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Analysis of Risk Factors Associated with Postpartum Depression Among Postpartum Mothers

Analisis Faktor Risiko yang Berhubungan dengan Kejadian Depresi pada Ibu Pascasalin

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ABSTRACT

Background: Postpartum depression (PPD) is a common mental health disorder affecting mothers, infants, and families. Identifying key determinants is essential for early prevention.

Objective: This research aimed to examined factors associated with PPD among mothers within three months postpartum at community health centers in Bandung City.

Methods: A cross-sectional study included 184 postpartum mothers selected through multistage random sampling. Validated instruments were employed to collect the data, including the Edinburgh Postnatal Depression Scale, Fatigue Severity Scale, Brief Resilience Scale, and Multidimensional Scale of Perceived Social Support. Univariate, bivariate, and multivariate logistic regression analyses were performed.

Results: The prevalence of PPD was 22.8%. In the adjusted model, fatigue (AOR = 4.46; 95% CI: 1.78–11.18), at-risk maternal age (AOR = 3.15; 95% CI: 1.22–8.14), and low resilience (AOR = 1.59; 95% CI: 1.01–2.73) were independently associated with PPD.

Conclusion: Improving early detection and incorporating regular mental health evaluations into primary care services may help lessen the impact of postpartum depression.

Keywords: Fatigue; Maternal Age; Postpartum Depression; Resilience

ABSTRAK

Latar Belakang *Depresi pascasalin merupakan gangguan kesehatan mental yang sering terjadi dan berdampak pada ibu, bayi, serta keluarga. Identifikasi faktor penentu utama sangat penting untuk mendukung upaya pencegahan dan deteksi dini.*

Tujuan: *Menganalisis faktor-faktor yang berhubungan dengan kejadian depresi pascasalin pada ibu dalam tiga bulan pertama setelah persalinan di puskesmas Kota Bandung, Indonesia.*

Metode: *Penelitian ini menggunakan desain* crossectional*, melibatkan 184 ibu pascasalin yang dipilih dengan teknik* multistage random sampling*. Pengumpulan data dilakukan menggunakan instrumen yang telah tervalidasi, yaitu Edinburgh Postnatal Depression Scale, Fatigue Severity Scale, Brief Resilience Scale, dan Multidimensional Scale of Perceived Social Support. Analisis data dilakukan melalui univariat, bivariat, dan multivariat untuk mengidentifikasi faktor-faktor yang berhubungan dengan depresi pascasalin.*

Hasil: *Hasil penelitian menunjukkan prevalensi depresi pascasalin sebesar 22,8%. Pada model multivariat kelelahan (AOR = 4,46; IK 95%: 1,78–11,18), usia ibu berisiko (AOR = 3,15; IK 95%: 1,22–8,14), dan resiliensi rendah (AOR = 1,59; IK 95%: 1,01–2,73) terbukti berhubungan secara independen dengan kejadian depresi pascasalin.*

Kesimpulan: *Penguatan upaya identifikasi dini dan integrasi penilaian kesehatan mental secara rutin dalam layanan kesehatan primer diharapkan dapat menurunkan risiko terjadinya depresi pascasalin.*

Kata Kunci: *Kelehan; Kesehatan Mental Ibu; Resiliensi; Dukungan Sosial; Sosiodemografi*

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INTRODUCTION

Maternal mental disorders during pregnancy and the postpartum period represent a persistent global health challenge (Śliwerski et al. 2020). The World Health Organization estimates that approximately 10–13% of women worldwide experience depression during pregnancy or postpartum, with higher rates in low- and middle-income countries (WHO 2022). The global prevalence of postpartum depression (PPD) ranges from 13% to 39% (Wang et al. 2021). Notably, depressive symptoms are more prevalent within the first three months postpartum compared with later periods (Alshikh Ahmad et al. 2021).

In Indonesia, the prevalence of depression among women is reported at 1.8%, nearly twice that of men, with West Java showing the highest provincial rate (Badan Kebijakan Pembangunan Kesehatan 2023). Local studies indicate substantial postpartum depressive symptoms, including reports from Jakarta, Banten (Nurbaeti et al. 2018), and Bandung (Lestari et al. 2024). However, evidence specifically focusing on mothers within the first three months postpartum in primary care settings remains limited. This early postpartum period is critical, as emotional instability during this phase may predict longer-term mental health disorder (Daehn et al. 2022).

The postpartum transition involves profound biological, psychological, and social adjustments. Sleep disruption, role transitions, economic pressures, and cultural expectations may trigger sustained stress responses that increase vulnerability to depressive symptoms.(Ngai and Lam 2021; Li 2022; WHO 2022; Schalla and Stengel 2024) Many mothers describe their perinatal journey—from pregnancy to the postpartum period—as an emotional rollercoaster. Early postpartum mood fluctuations have been found to predict the onset of mental health disorders up to 14 months later (Daehn et al. 2022).

When left unaddressed, postpartum mental health problems can have serious consequences for the well-being of mothers, their children, and their families (Gowon et al. 2024). Mothers experiencing mental health disorders often encounter various forms of stigma—whether from the public, internally from within themselves, or structurally through societal systems. These stigmas can lead to social isolation, diminished self-esteem, worsening psychiatric symptoms, and reluctance to seek professional help due to fears of being labeled as mentally ill. Such fears are often intensified by concerns about losing custody of their children, prompting many mothers to suppress their emotional struggles. As a result, they may withdraw socially, further exacerbating their psychological condition and creating significant barriers to accessing necessary mental health services (Pokharel et al. 2023).

Various studies have shown that factors such as sociodemographic characteristics, fatigue, resilience, and social support contribute to the development of PPD. Sociodemographic characteristics have consistently been associated with postpartum depression. Younger mothers (≤20 years) and older primiparous women (>35 years) demonstrate higher levels of postpartum psychological distress compared with mothers of optimal reproductive age (Ho-Fung et al. 2022; Wang et al. 2023a). Lower educational attainment, unemployment, financial hardship, unmarried status, and primiparity have also been reported as significant risk factors. In addition, reproductive factors such as unintended pregnancy and mode of delivery, as well as psychosocial stressors including intimate partner violence and extended family co-residence, further increase vulnerability to depressive symptoms during the postpartum period (Agnafors et al. 2019; Azad et al. 2019; Dubey et al. 2021; Peng et al. 2021).

The relationship between fatigue, resilience, and social support in the development of PPD can be understood within a contemporary stress-sensitivity framework, which posits that sustained exposure to psychosocial stress and individual vulnerabilities increases the likelihood of depression (Alves et al. 2022; Ertmann et al. 2022). Persistent postpartum fatigue may impair emotional regulation and stress tolerance, thereby increasing susceptibility to depressive symptoms (Wilson et al. 2019; Yi and Ahn 2024). In contrast, resilience functions as a dynamic protective resource that promotes adaptive coping and psychological adjustment (Baattaiah et al. 2023), whereas perceived social support operates as a protective mechanism that mitigates stress and reduces adverse psychological outcomes among postpartum women (Wang et al. 2024).

Despite growing evidence, most previous studies have examined postpartum risk factors separately rather than simultaneously, particularly in primary health care settings within low- and middle-income countries. Evidence focusing on the early postpartum period in community-based services also remains limited, restricting comprehensive risk identification and the development of integrated screening strategies. Community health centers play a pivotal role in the early detection and prevention of maternal mental health disorders, yet routine screening for postpartum depression remains limited in Bandung.

This study aims to examine the simultaneous associations between sociodemographic characteristics, fatigue, resilience, and social support and postpartum depression among mothers within the first three months postpartum attending community health centers in Bandung. By providing integrative evidence on these interrelated factors, the study seeks to inform early identification strategies and strengthen maternal mental health services in primary care settings.

MATERIALS AND METHODS

A. Research Design

This study employed a quantitative cross-sectional design to examine the factors associated with postpartum depression. The research was conducted from April 7 to April 30, 2025, at six randomly selected community health centers (Puskesmas) in Bandung City, Indonesia. These centers provide routine maternal and child health services and represent different urban districts within the city. The study protocol was approved by the Research Ethics Committee of Universitas Padjadjaran (No. 188/UN6.KEP/EC/2025).

B. Population and Sample

The target population of this study comprised postpartum mothers within 1–90 days after delivery who attended postnatal, family planning, or infant immunization services at community health centers in Bandung City, Indonesia. A multistage random sampling technique was employed. In the first stage, six districts were selected using simple random sampling from all districts in Bandung City. In the second stage, one community health center was randomly selected from each chosen district, resulting in six participating centers. Within each selected health center, eligible postpartum mothers were recruited consecutively during routine visits until the required sample size was achieved.

Inclusion criteria were being within three months postpartum, having ≤4 children, residing in Bandung, being able to read and write, and providing written informed consent. Mothers were excluded if they had experienced infant death, had severe maternal complications requiring intensive care, delegated full newborn care

to others, or had a prior history of depression.

The sample size was calculated using an unmatched categorical formula (Ibrahim, 2022), based on previously reported proportions of postpartum depression among exposed (0.75) and unexposed mothers (0.87) (Rtamagustini, 2022). The minimum required sample size was 167 participants. After accounting for a 10% anticipated non-response rate, the final sample size was determined to be 184 postpartum mothers.

C. Data Collection Techniques

Primary data were obtained using structured self-administered questionnaires distributed by trained enumerators during postpartum care, contraception, and infant immunization visits at the participating community health centers. Before enrollment, mothers completed a brief eligibility screening and provided written informed consent. Enumerators were available onsite to clarify questions and assist when needed. The completed questionnaires were checked for completeness, and the participants were recontacted immediately if clarification or correction was needed.

D. Research Instruments

The primary outcome was PPD The primary outcome was PPD within the first three months after childbirth, measured via the Edinburgh Postnatal Depression Scale (EPDS) with a cutoff score of ≥13 (Cox et al. 1987; Cox et al. 2014). Exposures included sociodemographic factors (maternal age, education, income, parity, marital status, employment status, pregnancy intentions, birth mode, family type, and intimate partner violence), biological factors (fatigue), social factors (perceived social support), and psychological factors (resilience). Fatigue was measured via the Fatigue Severity Scale (FSS ≥36) (Krupp et al. 1989), resilience was measured via the Brief Resilience Scale (low 0–2.99; normal 3–4.30; high 4.31–5) (Smith et al. 2008), and perceived social support was measured via the Multidimensional Scale of Perceived Social Support (low 12–43; moderate 44–54; high 55–60) (Rtamagustini 2022). All instruments have demonstrated validity and reliability in postpartum or perinatal populations.

E. Data Analysis Techniques

Data were analyzed using SPSS version 27. Descriptive statistics were used for univariate analysis. Bivariate associations were tested using chi-square or Fisher's exact tests. Variables with P<.25 were included in multivariate logistic regression to identify independent predictors of postpartum depressive symptoms. Statistical significance was set at P<.05, and results were reported as adjusted odds ratios (aORs) with 95% confidence intervals.

RESULT AND DISCUSSION

A. Result

The study was conducted from April 7 to 30, 2025. A total of 226 postpartum mothers were assessed for eligibility at six selected community health centers in Bandung. Of these, 190 met the predefined inclusion criteria. Eight eligible mothers declined participation. Consequently, 184 mothers provided written informed consent and were included in the final analysis, yielding a response rate of 96.8%.

Table 1. Sociodemographic Characteristics of Study Participants

Variable	Value (%)
Maternal Age	
At risk-age	32 (17.4)
Not at-risk age	152 (82.6)
Education Level	
Primary	37 (20.1)
Secondary	114 (62)
Higher	33 (17.9)
Marital Status	
Unmarried/Divorced	4 (2.1)
Married	180 (97.9)
Employment Status	
Unemployed	149 (81)
Employed	35 (19)
Household Income	
Below city minimum wage	121 (65.8)
Above city minimum wage	63 (34.2)
Parity	
Primiparous (1 child)	77 (41.8)
Multiparous (2–4 children)	107 (58.2)
Pregnancy Planning	
Unplanned	100 (54.3)
Planned	84 (45.7)
Most Recent Delivery Mode	
Cesarean section	75 (40.8)
Assisted vaginal delivery	39 (21.2)
Normal vaginal delivery	70 (38)
Family Type	
Extended family	71 (38.6)
Nuclear family	113 (61.4)
Experience of Domestic Violence	
Yes	8 (4.3)
No	176 (95.7)

Table 1 presents the sociodemographic characteristics of the participants. Of the 184 postpartum mothers, 17.4% were categorized as being of at-risk maternal age. The majority had secondary education (62.0%), and 97.9% were married. A substantial proportion were unemployed (81.0%) and had household income below the Bandung City minimum wage (65.8%). More than half were multiparous (58.2%) and reported unplanned pregnancies (54.3%). Regarding delivery mode, 40.8% underwent cesarean section, 38.0% had normal vaginal delivery, and 21.2% had assisted vaginal delivery. Most participants lived in nuclear families (61.4%), while 4.3% reported experiencing domestic violence.

Table 2. Overview of Postpartum Depression, Fatigue, Social Support, and Resilience Among Mothers

Variable	Value (%)
Depression	
Yes	42 (22.8)
No	142 (77.2)
Fatigue	
Fatigued	79 (42.9)
Not fatigued	105 (57.1)
Resilience	
Low	56 (30.4)
Normal	105 (57.1)
High	23 (12.5)
Social Support	
Low	61 (33.2)
Moderate	101 (54.9)
High	22 (12)

Table 2 presents that 22.8% of the respondents experienced PPD. Additionally, 42.9% reported fatigue, 30.4% reported low resilience, and 33.2% reported low levels of social support. No missing data were identified for any of the variables included in the final analysis.

Table 3. Associations between sociodemographic factors and postpartum depression

Variable	Depression		*P*-value
	Yes (n = 42) n (%)	No (n = 142) n (%)	
Maternal Age			**0.030***
At-risk	12 (28.6)	20 (14.1)	
Not at-risk	30 (71.4)	122 (85.9)	
Education Level			0.608
Primary	10 (23.8)	27 (19.0)	
Secondary	24 (57.1)	90 (63.4)	
Higher	8 (19)	25 (17.6)	
Marital Status			**0.038***
Unmarried/Divorced	3 (7.1)	1 (0.7)	
Married	40 (95.2)	141 (99.3)	
Employment Status			0.658
Unemployed	35 (83.3)	114 (80.3)	
Employed	7 (16.7)	28 (19.7)	
Household Income			0.211
Bellow city minimum wage	31 (73.8)	90 (63.4)	
Above city minimum wage	11 (26.2)	52 (36.6)	
Parity			0.612
Primiparous (1 child)	19 (45.2)	58 (40.8)	
Multiparous (2–4 children)	23 (54.8)	84 (59.2)	
Pregnancy Planning			0.263
Unplanned	26 (61.9)	73 (51.4)	
Planned	16 (38.1)	69 (48.6)	
Mode of Delivery			0.218
Cesarean section	23 (54.8)	52 (36.6)	
Assisted vaginal	7 (16.7)	32 (22.5)	
Normal vaginal	12 (28.6)	58 (40.8)	
Family Type			0.775
Extended family	17 (40.5)	53 (37.3)	
Nuclear family	25 (59.5)	89 (62.7)	
Experience of Domestic Violence			**<0.001***
Yes	8 (19)	0 (0.0)	
No	34 (81)	142 (100)	

[1]Based on chi-square or Fisher's exact test as appropriate. Significant at $P < .05$

Table 3 presents the bivariate associations between sociodemographic characteristics and PPD. Maternal age ($P = .030$), marital status ($P = .038$), and experience of domestic violence ($P < .001$) were significantly associated with PPD. No significant associations were found for education level, employment status, income, parity, pregnancy planning, delivery mode, or family type ($P > .05$).

Table 4. Associations of fatigue, social support, and resilience with postpartum depression

Variable	Depression		*P*-value
	Yes (n = 42) n (%)	No (n = 142) n (%)	
Fatigue			**<0.001***
Not fatigued	8 (19.1)	71 (50.0)	
Fatigued	34 (80.9)	71 (50.0)	
Social Support			**<0.001***
High	3 (7.1)	19 (13.38)	
Moderate	15 (35.7)	86 (60.56)	
Low	24 (57.1)	37 (26.06)	
Resilience			**0.002***
High	1 (2.4)	22 (15.5)	
Normal	20 (47.6)	85 (59.9)	
Low	21 (50)	35 (24.6)	

[1]Based on Chi-square test. Significant at $p < .05$.

Table 4 presents that fatigue, resilience, and social support were significantly associated with PPD (*P* < .001, .002, and < .001, respectively). Among the 42 mothers with PPD, 80.9% reported fatigue, 50.0% had low resilience, and 57.1% reported low perceived social support. These variables, along with others with *P* < .25, were included in the multivariate logistic regression model.

Table 5. Factors associated with postpartum depression

Variable	Frequencies		Adjusted Result	
	Depressed (n = 42) n (%)	Non-Depressed (n = 142) n (%)	aOR (95% CI)	*P-v*alue
At-risk maternal age	12 (28.6)	20 (14.1)	4.453 (1.64–12.11)	0.003
Domestic violence (Yes)	8 (19.0)	0 (0.0)	.00 (.00–.)	0.999
Fatigue (Yes)	34 (80.9)	71 (50.0)	2.890 (1.40–5.99)	0.004
Social support (High)	3 (7.1)	19 (13.4)	[Reference]	
Social support (Moderate)	15 (35.7)	86 (60.6)	1.359 (0.29–6.31)	0.695
Social support (Low)	24 (57.1)	37 (26.1)	0.254 (0.06–1.17)	0.079
Resilience (High)	1 (2.4)	22 (15.5)	[Reference]	
Resilience (Moderate)	20 (47.6)	85 (59.9)	0.428 (0.05–3.74)	0.443
Resilience (Low)	21 (50.0)	35 (24.6)	1.297 (1.03–1.63)	0.043

Abbreviations: aOR, adjusted odds ratio; CI, confidence interval.
[1]Based on the final model of logistic regression using the backward (Wald) method.

Table 5 shows the results of the multivariate logistic regression analysis. At-risk maternal age, fatigue, and low resilience were significantly associated with PPD within the first three months postpartum. Among these factors, at-risk maternal age showed the highest odds (*P* = .003; aOR = 4.45; 95% CI: 1.64–12.11).

Fatigue was also significant (P = .004; aOR = 2.89; 95% CI: 1.40–5.99). Low resilience remained significant (P = .043; aOR = 1.30; 95% CI: 1.03–1.63).

B. Discussion

This study identified several independent factors associated with PPD. In the final adjusted model, at-risk maternal age, fatigue, and low resilience remained significantly associated with depressive symptoms. Maternal age demonstrated the strongest association, increasing the odds of PPD by more than fourfold. Fatigue was associated with nearly a threefold increase in risk, while low resilience was also independently associated with higher odds of PPD.

The present study found that at-risk maternal age was the strongest predictor of PPD. This finding aligns with previous studies conducted in Indonesia and China, which reported increased vulnerability to depressive symptoms among mothers at extreme reproductive ages, potentially due to heightened physiological and psychosocial stressors during the postpartum period (Murwati et al. 2021; Wang et al. 2023b). Older mothers may experience greater parenting stress, sleep disruption, and role-related pressure (Ahmad et al. 2024). Conversely, younger mothers may face limited experience, reduced resources, and difficulties in adapting to maternal responsibilities (Alshahrani et al. 2024). These findings suggest that both early and advanced maternal age represent vulnerable periods requiring targeted psychosocial support. However, inconsistent results have also been reported in other populations, indicating that cultural and contextual factors may influence the relationship between maternal age and PPD (Dubey et al. 2021; Żyrek et al. 2024).

Marital status and experiences of domestic violence were significantly associated with PPD in bivariate analyses. Unmarried mothers and those exposed to domestic violence reported higher prevalence of depressive symptoms, consistent with studies conducted in Ireland, China, India, and Brazil (Silva and Leite 2020; McDonnell et al. 2024; Priya et al. 2024; Wei et al. 2025). Limited emotional, financial, and social support, as well as relational conflict, may increase psychological vulnerability (Shitu et al. 2019; Desta et al. 2021; Mollard et al. 2021; Wei et al. 2025). However, these associations did not remain significant in the adjusted model, suggesting their effects may be mediated or confounded by other psychosocial factors such as fatigue and resilience.

Fatigue was identified as one of the dominant factors associated with PPD, with a 2.89-fold increased risk. This aligns with previous studies conducted in Saudi Arabia and China, which reported that postpartum fatigue—arising from sleep disturbances, breastfeeding demands, and physical recovery—contributes to depressive symptoms (Baattaiah et al. 2023; Yi and Ahn 2024). A systematic review found that factors such as poor sleep, breastfeeding challenges, maternal health problems and low ferritin or hemoglobin levels contribute to fatigue within the first six months postpartum. This exhaustion often impairs a mother's cognitive and physical capacity for daily activities (Badr and Zauszniewski 2017). While fatigue can be a symptom of depression, the two are clinically distinct: fatigue centers on persistent exhaustion, whereas depression involves emotional distress such as hopelessness and suicidal ideation (Wilson et al. 2019). Consequently, mitigating fatigue through social support for infant care and professional-led physical activities, such as yoga or pilates, can be an effective strategy to reduce depressive risks (Azlina 2021; Qian et al. 2021).

Low resilience was also independently associated with PPD. This aligns with with previous studies conducted in China, who reported a similar

relationship within the first six weeks postpartum (Shang et al. 2022). Resilience negatively correlates with depression and may mediate the effects of prenatal stress on postpartum mental health (Baattaiah et al. 2023; Hajure et al. 2024). Resilient mothers are better equipped to manage stress, solve problems, and adjust to unexpected challenges, with stronger self-efficacy and confidence during the transition to motherhood (Dlamini et al. 2023; Mei et al. 2025). Factors such as mindfulness, maternal self-mastery, and self-esteem enhance resilience, highlighting the role of healthcare providers in fostering autonomy, supportive relationships, and family connections to strengthen maternal resilience (Hajure et al. 2024; Julian et al. 2024; Mei et al. 2025).

Finally, social support was significantly associated with PPD in bivariate analysis, although it did not remain an independent predictor in the final multivariate model. Consistent with studies from South Korea, limited support—particularly from partners—elevates the risk of depression during the first two postpartum months (Spry et al. 2021; Kim et al. 2023). Mothers with strong social networks experience better coping, stronger emotional bonds with their infants, and improved mental resilience (Hanifah and Rozali 2021; Jiang et al. 2021; Antoniou et al. 2022). Practical assistance, such as shared childcare and household responsibilities, fosters maternal confidence and optimism (Lee et al. 2023). Perceived support during pregnancy also has preventive effects, particularly for high-risk women, and can be strengthened through antenatal education, counseling, home visits, web-based programs, and peer support groups, focusing on mental health, maternal adjustment, physiological changes, and partner involvement (Sharifipour et al. 2022; Taylor et al. 2022; Żyrek et al. 2024).

This study has several limitations. First, the cross-sectional design precludes causal inference and limits the ability to assess temporal relationships between exposure variables and PPD. Second, data were obtained through self-reported questionnaires, which may be subject to recall and social desirability bias. Finally, although multiple variables were included in the model, residual confounding from unmeasured factors cannot be excluded.

CONCLUSION

This study demonstrated that postpartum depression within the first three months after childbirth was independently associated with at-risk maternal age, fatigue, and low resilience. Among these factors, maternal age showed the strongest association. These findings underscore the importance of early identification of vulnerable mothers and the integration of mental health screening into routine maternal care. Screening for depressive symptoms, fatigue, and psychosocial resilience during pregnancy and the early postpartum period may contribute to timely prevention and intervention. Strengthening collaboration between midwives and mental health professionals is essential to improve maternal mental health outcomes.

RECOMMENDATION

Future research should employ longitudinal or case-control designs to clarify causal pathways and explore additional determinants of PPD. The incorporation of structured clinical interviews conducted by trained psychologists or psychiatrists is recommended to enhance diagnostic validity. In practice, primary care settings, particularly community health centers, should integrate comprehensive early screening beginning in pregnancy, including assessment of fatigue and psychological resilience. Community-

based and family-centered interventions should be strengthened to support early prevention and management of PPD.

REFERENCES

Agnafors, S., Bladh, M., Svedin, C.G. and Sydsjö, G. 2019. Mental health in young mothers, single mothers and their children. BMC psychiatry 19(1), p. 112. Available at: https://doi.org/10.1186/s12888-019-2082-y

Ahmad, M., Sechi, C. and Vismara, L. 2024. Advanced Maternal Age: A Scoping Review about the Psychological Impact on Mothers, Infants, and Their Relationship. Behavioral Sciences 14(3). Available at: https://doi.org/10.3390/bs14030147

Alshahrani, M., Alqarni, N.O., Aldughar, S.S., Asiri, S.T. and Alharbi, R.I. 2024. The Prevalence and Risk Factors of Postpartum Depression among Mothers in Najran City, Saudi Arabia. Healthcare 12(10). Available at: https://doi.org/10.3390/healthcare12100986

Alshikh Ahmad, H., Alkhatib, A. and Luo, J. 2021. Prevalence and risk factors of postpartum depression in the Middle East: a systematic review and meta-analysis. BMC pregnancy and childbirth 21(1), p. 542. Available at: https://doi.org/10.1186/s12884-021-04016-9

Alves, R.L. et al. 2022. Maternal stress and vulnerability to depression: coping and maternal care strategies and its consequences on adolescent offspring. Translational Psychiatry 12(1), p. 463. Available at: https://doi.org/10.1038/s41398-022-02220-5

Antoniou, E., Tzanoulinou, M.-D., Stamoulou, P. and Orovou, E. 2022. The Important Role of Partner Support in Women's Mental Disorders During the Perinatal Period. A Literature Review. Maedica 17(1), pp. 194–200. Available at: https://doi.org/10.26574/maedica.2022.17.1.194

Azad, R. et al. 2019. Prevalence and Risk Factors of Postpartum Depression Within One Year After Birth in Urban Slums of Dhaka, Bangladesh. PLOS ONE 14(5), p. e0215735. Available at: https://doi.org/10.1371/journal.pone.0215735

Azlina, F.A. 2021. Self-Care Management dalam Intervensi Keperawatan Pada Kelelahan Postpartum: Tinjauan Literatur [Self-Care Management in Nursing Interventions for Postpartum Fatigue: A Literature Review]. Dunia Keperawatan: Jurnal Keperawatan Dan Kesehatan 9(3), pp. 342–348.

Baattaiah, B.A., Alharbi, M.D., Babteen, N.M., Al-Maqbool, H.M., Babgi, F.A. and Albatati, A.A. 2023. The Relationship Between Fatigue, Sleep Quality, Resilience, and the Risk of Postpartum Depression: An Emphasis on Maternal Mental Health. BMC Psychology 11(1). Available at: http://dx.doi.org/10.1186/s40359-023-01043-3

Badan Kebijakan Pembangunan Kesehatan. 2023. Survei Kesehatan Indonesia Tahun 2023 [Indonesia Health Survey 2023]. Available at: https://www.badankebijakan.kemkes.go.id/ski-2023-dalam-angka/

Badr, H.A. and Zauszniewski, J.A. 2017. Meta-Analysis of the Predictive Factors of Postpartum Fatigue. Applied Nursing Research 36, pp. 122–127. Available at: https://www.sciencedirect.com/science/article/pii/S0897189716303998

Cox, J., Holden, J. and Henshaw, C. 2014. Perinatal Mental Health: The Edinburgh Postnatal Depression Scale

(EPDS) Manual (2nd edn). RCPsych Publications. Available at: https://books.google.co.id/books?id=V2NaAwAAQBAJ

Cox, J.L., Holden, J.M. and Sagovsky, R. 1987. Detection of postnatal depression: development of the 10-item Edinburgh Postnatal Depression Scale. The British journal of psychiatry 150(6), pp. 782–786.

Daehn, D., Rudolf, S., Pawils, S. and Renneberg, B. 2022. Perinatal Mental Health Literacy: Knowledge, Attitudes, and Help-Seeking Among Perinatal Women and the Public – A Systematic Review. BMC Pregnancy and Childbirth 22(1). Available at: http://dx.doi.org/10.1186/s12884-022-04865-y

Desta, M., Memiah, P., Kassie, B., Ketema, D.B., Amha, H., Getaneh, T. and Sintayehu, M. 2021. Postpartum Depression and Its Association With Intimate Partner Violence and Inadequate Social Support in Ethiopia: A Systematic Review and Meta-Analysis. Journal of Affective Disorders 279, pp. 737–748. Available at: https://www.sciencedirect.com/science/article/pii/S0165032720329839

Dlamini, L.P., Hsu, Y.-Y., Shongwe, M.C., Wang, S.-T. and Gau, M.-L. 2023. Maternal Self-Efficacy as a Mediator in the Relationship Between Postpartum Depression and Maternal Role Competence: A Cross-Sectional Survey. Journal of Midwifery & Women's Health 68(4), pp. 499–506. Available at: https://doi.org/10.1111/jmwh.13478

Dubey, A., Chatterjee, K., Chauhan, V.S., Sharma, R., Dangi, A. and Adhvaryu, A. 2021. Risk Factors of Postpartum Depression. Industrial Psychiatry Journal 30(Suppl 1). Available at: https://journals.lww.com/inpj/fulltext/2021/30001/risk_factors_of_postpartum_depression.25.aspx

Ertmann, R.K., Lyngsøe, B.K., Nicolaisdottir, D.R., Kragstrup, J. and Siersma, V. 2022. Mental vulnerability before and depressive symptoms during pregnancy and postpartum: a prospective population-based cohort study from general practice. Nordic journal of psychiatry 76(4), pp. 243–249. Available at: https://doi.org/10.1080/08039488.2021.1953583

Gowon, N.D. et al. 2024. Understanding lived experiences and perceptions of perinatal depression in Nigeria: a qualitative evidence synthesis. Journal of Global Health Reports 8, p. e2024024.

Hajure, M. et al. 2024. Resilience and mental health among perinatal women: a systematic review. Frontiers in psychiatry 15, p. 1373083. Available at: https://doi.org/10.3389/fpsyt.2024.1373083

Hanifah, P. and Rozali, Y.A. 2021. Gambaran Dukungan Sosial pada Wanita Pasca Persalinan [The Description of Social Support in Postpartum Women]. JCA of Psychology 2(02).

Ho-Fung, C., Andersson, E., Hsuan-Ying, H., Acharya, G. and Schwank, S. 2022. Self-reported mental health status of pregnant women in Sweden during the COVID-19 pandemic: a cross-sectional survey. BMC Pregnancy and Childbirth 22(1). Available at: http://dx.doi.org/10.1186/s12884-022-04553-x

Ibrahim, J. (2022). *Buku Ajar Metodologi Penelitian Kesehatan [Textbook of Health Research Methodology]*. Penerbit NEM. https://books.google.co.id/books?id=t7CvEAAAQBAJ

Jiang, Q. et al. 2021. Perinatal Mental Health Problems in Rural China: The

Role of Social Factors. Frontiers in psychiatry 12, p. 636875. Available at: https://doi.org/10.3389/fpsyt.2021.636875

Julian, M., Somers, J.A., Dunkel Schetter, C. and Guardino, C.M. 2024. Resilience resources, life stressors, and postpartum depressive symptoms in a community sample of low and middle-income Black, Latina, and White mothers. Stress and health : journal of the International Society for the Investigation of Stress 40(1), p. e3275. Available at: https://doi.org/10.1002/smi.3275

Kim, S., Kim, D.J., Lee, M.-S. and Lee, H. 2023. Association of Social Support and Postpartum Depression According to the Time After Childbirth in South Korea. Psychiatry investigation 20(8), pp. 750–757. Available at: https://doi.org/10.30773/pi.2023.0042

Krupp, L.B., LaRocca, N.G., Muir-Nash, J. and Steinberg, A.D. 1989. The fatigue severity scale: application to patients with multiple sclerosis and systemic lupus erythematosus. Archives of neurology 46(10), pp. 1121–1123.

Lee, M.-S., Lee, J.J., Park, S., Kim, S. and Lee, H. 2023. Is social support associated with postpartum depression, anxiety and perceived stress among Korean women within the first year postpartum? Journal of psychosomatic obstetrics and gynaecology 44(1), p. 2231629. Available at: https://doi.org/10.1080/0167482X.2023.2231629

Lestari, A.D., Wardani, S.W., Widiawati, I. and Desmaniarti, Z. 2024. Deteksi Dini Depresi dan Efikasi Diri Menyusui pada Ibu Nifas di Kota Bandung [Early Detection of Depression and Breastfeeding Self-Efficacy Among Postpartum Mothers in Bandung City]. Jurnal Global Ilmiah 1(12).

Li, H. 2022. Affective instability, depression, and anxiety symptoms in a community sample of pregnant and postpartum women: a cross-sectional study. International Journal of Environmental Research and Public Health 19(6), p. 3171.

McDonnell, Cadhla.; Gracia, P. 2024. Family Structure and Women's Mental well-being: How Family Stressors Explain Mental Health Inequalities Between Lone and Partnered Mothers. rontiers in Sociology 9. Available at: https://doi.org/10.3389/fsoc.2024.1498987

Mei, X., Ranran, M., Yan, L., Funa, Y., Minyu, L., Qianwen, C. and and Ye, Z. 2025. Trait Mindfulness, Resilience, Self-Efficacy, and Postpartum Depression: A Dominance Analysis and Serial-Multiple Mediation Model. Psychology Research and Behavior Management 18(null), pp. 743–757. Available at: https://www.tandfonline.com/doi/abs/10.2147/PRBM.S509684

Mollard, E., Kupzyk, K. and Moore, T. 2021. Postpartum stress and protective factors in women who gave birth in the United States during the COVID-19 pandemic. Women's Health 17, p. 17455065211042190. Available at: https://doi.org/10.1177/17455065211042190

Murwati, M., Suroso, S. and Wahyuni, S. 2021. Faktor Determinan Depresi Postpartum di Wilayah Kabupaten Klaten Jawa Tengah [Determinant Factors of Postpartum Depression in Klaten Regency, Central Java]. Jurnal Sipakalebbi 5(1), pp. 18–31.

Ngai, F.-W. and Lam, W. 2021. Stress, Marital Relationship, and Quality of Life of Couples Across the Perinatal Period. Maternal and child health journal 25, pp. 1884–1892.

Nurbaeti, I., Deoisres, W. and Hengudomsub, P. 2018. Postpartum Depression in Indonesian Mothers: Its

Changes and Predicting Factors. Pacific Rim International Journal of Nursing Research 22(2).

Peng, S. et al. 2021. Living with parents-in-law increased the risk of postpartum depression in Chinese women. Frontiers in Psychiatry 12, p. 736306.

Pokharel, A. et al. 2023. Mental Illness Stigma Among Perinatal Women in Low- and Middle-Income Countries: Early Career Psychiatrists' Perspective. Frontiers in Psychiatry 14. Available at: https://www.scopus.com/inward/record.uri?eid=2-s2.0-85180216891&doi=10.3389%2Ffpsyt.2023.1283715&partnerID=40&md5=bc6edf68b7406c4183b7d6f94c7a258a

Priya, T., Kaushal, S., Dogra, P. and Dogra, V. 2024. Prevalence and Risk Factors of Postpartum Depression in Sub-Himalayan Region. Medical Journal Armed Forces India 80(2), pp. 161–165. Available at: https://www.sciencedirect.com/science/article/pii/S0377123721003129

Qian, J., Sun, S., Liu, L. and Yu, X. 2021. Effectiveness of Nonpharmacological Interventions for Reducing Postpartum Fatigue: A Meta-Analysis. BMC pregnancy and childbirth 21(1), p. 622. Available at: https://doi.org/10.1186/s12884-021-04096-7

Rtamagustini, N.N.T. 2022. Analisis Hubungan Faktor-Faktor Risiko Depresi Perinatal pada Ibu Hamil dan Pasca Persalinan Setelah 12 Bulan Masa Pandemi Covid-19 di Kabupaten Badung, Bali [Analysis of the Relationship Between Risk Factors for Perinatal Depression in Pregnant and Post. Universitas Padjadjaran.

Schalla, M.A. and Stengel, A. 2024. The Role of Stress in Perinatal Depression and Anxiety: A Systematic Review. Frontiers in Neuroendocrinology, p. 101117.

Shang, X., Li, L., Niu, C., Liao, Y. and Gao, S. 2022. Relationship Between Social Support and Parenting Sense of Competence in Puerperal Women: Multiple Mediators of Resilience and Postpartum Depression. Frontiers in psychiatry 13, p. 986797.

Sharifipour, F., Javadnoori, M., Moghadam, Z.B., Najafian, M., Cheraghian, B. and Abbaspoor, Z. 2022. Interventions to Improve Social Support Among Postpartum Mothers: A Systematic Review. Health promotion perspectives 12(2), p. 141.

Shitu, S., Geda, B. and Dheresa, M. 2019. Postpartum depression and associated factors among mothers who gave birth in the last twelve months in Ankesha district, Awi zone, North West Ethiopia. BMC Pregnancy and Childbirth 19(1), p. 435. Available at: https://doi.org/10.1186/s12884-019-2594-y

Silva, R. de P. and Leite, F.M.C. 2020. Intimate Partner Violence During Pregnancy: Prevalence and Associated Factors. Revista de saude publica 54, p. 97.

Śliwerski, A., Kossakowska, K., Jarecka, K., Świtalska, J. and Bielawska-Batorowicz, E. 2020. The Effect of Maternal Depression on Infant Attachment: A Systematic Review. International journal of environmental research and public health 17(8). Available at: https://doi.org/10.3390/ijerph17082675

Smith, B.W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P. and Bernard, J. 2008. The brief resilience scale: assessing the ability to bounce back. International journal of behavioral medicine 15, pp. 194–200.

Spry, E.A. et al. 2021. Preventing postnatal depression: a causal mediation analysis of a 20-year preconception cohort. Philosophical Transactions of

the Royal Society B 376(1827), p. 20200028.

Taylor, B.L., Nath, S., Sokolova, A.Y., Lewis, G., Howard, L.M., Johnson, S. and Sweeney, A. 2022. The relationship between social support in pregnancy and postnatal depression. Social psychiatry and psychiatric epidemiology 57(7), pp. 1435–1444. Available at: https://doi.org/10.1007/s00127-022-02269-z

Wang, Y., Gu, J., Gao, Y., Lu, Y., Zhang, F. and Xu, X. 2023a. Postpartum Stress in the First 6 Months After Delivery: A Longitudinal Study in Nantong, China. BMJ open 13(10), p. e073796. Available at: https://doi.org/10.1136/bmjopen-2023-073796

Wang, Y., Gu, J., Zhang, F. and Xu, X. 2023b. The effect of perceived social support on postpartum stress: the mediating roles of marital satisfaction and maternal postnatal attachment. BMC Women's Health 23(1), p. 482. Available at: https://doi.org/10.1186/s12905-023-02593-9

Wang, Y., Gu, J., Zhang, F. and Xu, X. 2024. The multiple mediation model of social support and postpartum anxiety symptomatology: the role of resilience, postpartum stress, and sleep problems. BMC Psychiatry 24(1), p. 630. Available at: https://doi.org/10.1186/s12888-024-06087-2

Wang, Z. et al. 2021. Mapping global prevalence of depression among postpartum women. Translational Psychiatry 11(1), p. 543. Available at: https://doi.org/10.1038/s41398-021-01663-6

Wei, M. et al. 2025. Marriage and postpartum major depressive disorder: A systematic review and meta-analysis of cohort studies. Journal of Psychiatric Research 182, pp. 83–91. Available at: https://www.sciencedirect.com/science/article/pii/S0022395625000044

WHO. 2022. Guide for Integration of Perinatal Mental Health in Maternal and Child Health Services. Geneva: World Health Organization.

Wilson, N., Lee, J.J. and Bei, B. 2019. Postpartum Fatigue and Depression: A Systematic Review and Meta-Analysis. Journal of Affective Disorders 246, pp. 224–233. Available at: https://www.sciencedirect.com/science/article/pii/S0165032718319475

Yi, F. and Ahn, S. 2024. Effects of Postpartum Fatigue, Parenting Stress, and Family Support on Postpartum Depression in Chinese First-Time Mothers: A Cross-Sectional Study. Women's Health Nursing 30(3), pp. 226–237.

Żyrek, J. et al. 2024. Social Support During Pregnancy and the Risk of Postpartum Depression in Polish Women: A Prospective Study. Scientific Reports 14(1), p. 6906. Available at: https://doi.org/10.1038/s41598-024-57477-1