Jurnal Kesehatan Manarang

Jurnal Kesehatan Manarang, 11 (3), December 2025, pp. 351 – 362
ISSN 2528-5602 (Online), ISSN 2443-3861 (Print)
doi: https://doi.org/10.33490/jkm.v11i3.2136

PREVALENCE AND DETERMINANTS OF POSTPARTUM DEPRESSION AMONG MOTHERS IN BADUNG REGENCY, BALI: A CROSS-SECTIONAL STUDY

I Komang Lindayani [1]✉, Ira Nurmala[2], Nunik Puspitasari[3], Budi Prasetyo[4]
[1]Department of Midwifery, Health Polytechnic-Ministry of Health Denpasar
[2,3]Department of Epidemiology, Biostatistics, Population Studies and Health Promotion, Division of Health Promotion and Behavioural Science, Faculty of Public Health, Airlangga University
[4]Department of Obstetric and Gynaecology, Faculty of Medicine, Airlangga University

ARTICLE INFO

Article history

Submitted : 2025-07-24
Revised : 2025-09-12
Accepted : 2025-10-22

Keywords:

Associated factors;
Husband support;
Postpartum depression;
Prevalence;
Stressor

ABSTRACT

Postpartum depression (PPD) affects many aspects of a mother's life. Understanding the factors that contribute to this condition is crucial, as some factors may play a greater role than others. This study aimed to identify the prevalence of PPD, examine its associated factors, and determine the dominant factors related to the incidence of PPD in Badung Regency, Indonesia. This research employed a cross-sectional design conducted between May and July 2024. It involved 239 mothers who were 2 – 6 weeks postpartum. Participants were selected from seven public health centers in Badung Regency using two-stage cluster sampling. A questionnaire was used to assess several factors, including sociodemographic characteristics, obstetric history, baby characteristics, stressors during the postpartum period, husband's support, and postpartum depression symptoms. These factors were analyzed using bivariate chi-square analysis and multivariate logistic regression. The prevalence of PPD in this study was 47.3%. Associated factors included maternal age, stressors related to personal needs and fatigue, infant nurturing, body changes and sexuality, and instrumental and emotional husband support. Among these, the most dominant factors were body changes and sexuality, personal needs, and fatigue, which increased the risk of PPD by approximately threefold. The prevalence of PPD in Badung Regency is higher than previously reported in other areas. This highlights the importance of PPD screening and educating husbands about the need to provide both instrumental and emotional support during the postpartum period. We recommend implementing early screening and husband involvement programs.

Kata Kunci:

Faktor-faktor terkait;
Dukungan suami;
Depresi pascapersalinan;
Prevalensi;
Stresor

ABSTRAK

Depresi pascapersalinan (PPD) telah memengaruhi banyak aspek kehidupan seorang ibu. Memahami faktor-faktor yang berkontribusi terhadap kondisi ini sangat penting karena beberapa faktor mungkin memainkan peran yang lebih besar daripada yang lain. Penelitian ini bertujuan untuk mengidentifikasi prevalensi PPD, memeriksa faktor-faktor yang terkait dengannya, dan menentukan faktor-faktor dominan yang berhubungan dengan kejadian PPD di Kabupaten Badung, Indonesia. Penelitian ini menggunakan desain potong lintang, yang dilakukan antara Mei – Juli 2024. Ini melibatkan 239 ibu yang berusia 2-6 minggu pascapersalinan. Para peserta dipilih dari 7 puskesmas di Kabupaten Badung, menggunakan pengambilan sampel klaster dua tahap. Kuesioner digunakan untuk mengukur beberapa faktor, seperti sosiodemografi, kebidanan, karakteristik bayi, stresor selama periode pascapersalinan, dukungan suami, dan gejala depresi pascapersalinan. Faktor-faktor ini dianalisis menggunakan analisis chi-square bivariat dan regresi logistik multivariat. Prevalensi depresi pascapersalinan dalam penelitian ini dilaporkan sebesar 47,3%. Faktor-faktor yang terkait adalah usia, stresor terkait kebutuhan pribadi dan kelelahan, pengasuhan bayi, perubahan tubuh dan seksualitas, serta dukungan instrumental dan emosional suami. Di antara faktor-faktor tersebut, perubahan tubuh dan seksualitas, kebutuhan pribadi, dan kelelahan merupakan faktor yang paling dominan. Faktor-faktor ini 3 kali lebih mungkin meningkatkan risiko depresi pascapersalinan. Prevalensi depresi pascapersalinan di Kabupaten Badung lebih tinggi dibandingkan wilayah yang dilaporkan sebelumnya. Hal ini menunjukkan pentingnya skrining depresi pascapersalinan dan edukasi kepada suami tentang pentingnya memberikan dukungan instrumental dan emosional selama masa nifas. Kami merekomendasikan untuk diadakan program skrining awal dan keterlibatan suami.

✉ ***Corresponding Author:***

I Komang Lindayani
Telp. 082144110520
Email: bidan.lindayani@gmail.com

INTRODUCTION

The postpartum or puerperium period is the time after the placenta is delivered and ends when the uterus returns to its pre-pregnancy condition. Typically, this period lasts approximately 6 weeks or 42 days (Lowdermilk et al., 2013). It is generally a joyful yet challenging time. During this period, mothers must adapt to their newborns, accept their new role as mothers, and experience specific physical, mental, and social changes, especially in the early weeks after childbirth. These conditions can increase the risk to the mother's health (Khademi et al., 2023; Tola et al., 2021)

A large-scale study conducted by Martínez-Galiano in 2019 in Spain investigated the physical and psychological problems or discomforts experienced by mothers after childbirth. The study, involving 2,990 postpartum mothers, revealed that these problems included fatigue, hemorrhoids, sadness, back pain, breast pain, perineal pain, constipation, sexual intercourse problems, breastfeeding difficulties, urinary incontinence, anxiety, relationship problems with partners, headaches, burning sensation during urination, depression, wound infection, and fecal incontinence. While facing these discomforts, mothers also need to adapt physically, psychologically, and socially (Martínez-Galiano et al., 2019).

Studies suggest that the adaptations experienced during the postpartum period can increase a mother's vulnerability to stress or what is called psychological distress (Biaggi et al., 2016; Smith et al., 2011). Although elevated stress levels during this time are considered normal, excessive stress can pose a serious threat to the well-being of the mother, baby, and family (Kristensen et al., 2018). Many studies have confirmed that stress during the postpartum period is associated with the incidence of postpartum depression (Aadillah & Nurbaeti, 2023; Nurbaeti et al., 2019; Qobadi et al., 2016).

Globally, around 10% of women experience mental disorders, especially depression, during pregnancy, while 13% do so during the postnatal period. A meta-analysis conducted by Wang et al. (2021) found that the global prevalence of postpartum depression is approximately 17.22%, with South Africa showing the highest prevalence at 39.96%. Interestingly, the prevalence is higher in developing countries, reaching 15.6% during pregnancy and 19.8% during the postnatal period (WHO, 2023). Other reports indicate that the prevalence in developing countries is 19.99%, whereas Southeast Asia has the highest prevalence among Asian regions, at 22.32%.

In Indonesia, the prevalence of postpartum depression varies across studies. For instance, research by Nurbaeti et al., (2018) reported a prevalence of 19.88% in Jakarta. Meanwhile, a study by Putriarsih et al., (2017) in Sukoharjo Regency, Central Java, found a prevalence of 18.5%. A higher rate was reported by Indriasari (2017) at the Morokrembangan Community Health Center in Surabaya, where more than 50% of postpartum mothers experienced depression. In Bali, particularly in Denpasar City, the prevalence was 20.5% (Lindayani & Marhaeni, 2020).

The relatively high rate of postpartum depression in Indonesia can affect the health and survival of both mother and child if left untreated. It has a negative impact, particularly on the mother's psychological well-being and quality of life. Furthermore, interactions between the mother and her baby, as well as with her husband and family, may be disrupted. PPD has negative consequences as it reduces maternal responsiveness and affection, increases negative self-perception, and interferes with breastfeeding practices. Mothers with postpartum depression often experience difficulties initiating and maintaining breastfeeding due to low motivation, low energy, and negative emotions that hinder their commitment to breastfeeding. In severe cases, PPD may even increase the risk of suicidal ideation (Luciano et al., 2021; Shi et al., 2018; Winston & Chicot, 2016).

Social support plays an important role in mitigating the effects of postpartum depression. Numerous studies have shown that social support is significantly associated with a lower incidence of postpartum depression (Atuhaire et al., 2021; Lee et al., 2023; Yoo et al., 2021). Asadi, et al. (2022) conducted qualitative research using in-depth interviews to explore factors that may help alleviate PPD. They found two main categories of needs among postpartum mothers: the need for social support, particularly emotional support, help, and care, and the need to receive respect and emotional approval from their husbands, such as love and affection (Asadi et al., 2022).

Balinese society still follows a patriarchal culture in which married women are expected to live with their husband's family. Moreover, Balinese culture remains strongly influenced by traditional customs. Therefore, this study focuses on Balinese postpartum mothers to examine the determinants influencing the prevalence of postpartum depression within communities with such cultural

characteristics. This topic is important because there is limited district-level data that takes cultural context into account. The study aims to determine the prevalence of PPD, identify associated factors, and analyze dominant predictors of PPD in Badung Regency.

METHOD

Type of Research

This was a cross-sectional study conducted for analytical purposes.

Place and Time of Research

The study was conducted in Badung Regency between May and July 2024.

Population and Sample

The population of this study consisted of 8,201 postpartum mothers who were 2–6 weeks postpartum. The sample size was calculated using the Lemeshow formula with an estimated proportion of 20% and α=0.05, resulting in a minimum sample size of 239 postpartum mothers. Inclusion criteria included being of Balinese ethnicity, able to communicate well, and willing to participate as respondents. Meanwhile, exclusion criteria included a history of mental illness, serious complications during pregnancy or childbirth, a baby hospitalized after birth, multiple births, or infant death after birth.

As mentioned earlier, this research took place in Badung Regency, a district bordering the provincial capital of Bali. It consists of six sub-districts and thirteen health centers. A two-stage cluster sampling technique was used to determine both the study sites and participants. In stage 1, seven public health centers were selected proportionally at random. In stage 2, simple random sampling was used to determine the participants. As a result, thirty-four respondents were selected from each public health center. The sampling process began with recording data on postpartum mothers who were 2–6 weeks postpartum and met the inclusion criteria listed in the postpartum reports. Samples were then selected randomly. The selected participants were contacted by telephone to confirm their willingness to participate and to agree on the interview location.

Data Collection

This study received ethical clearance from the Health Research Ethics Committee of the Faculty of Nursing, Airlangga University (No: 3161-KEPK, signed on April 17th, 2024).

Four questionnaires were used for data collection. The first explored sociodemographic, obstetric, and infant-related factors such as age, education level, occupation, family income, duration of marriage, living arrangement, parity, pregnancy intention, mode of delivery, infant's gender, and feeding pattern.

To measure stressors during the postpartum period, the Maternal Postpartum Stress Scale (MPSS) developed by Radoš et al. (2023) was used. It consisted of 22 statements grouped into three subscales: personal needs and fatigue (9 items), infant nurturing (7 items), and body changes and sexuality (6 items) (Nakić Radoš et al., 2023). This scale was chosen because its items specifically measure stressors occurring during the postpartum period. The validity and reliability tests showed Cronbach's α values of 0.865, 0.884, and 0.91, respectively. Each item was rated on a 5-point scale, where 1 indicated very low or no stress at all, and 5 indicated very high stress.

The questionnaire assessing husband's support was developed based on the Postpartum Social Support Questionnaire (PSSQ) by Hopkins & Campbell (2008). It consisted of 9 questions, including 6 items on instrumental support and 3 items on emotional support. Validity and reliability tests showed a Cronbach's α of 0.837. Each item was rated on a 5-point Likert scale, where 1 equaled "almost never" and 5 equaled "very often."

Finally, the Edinburgh Postpartum Depression Scale (EPDS) was used to measure postpartum depression symptoms. It consisted of 10 statements with four answer choices scored from 0 – 3, with a cut-off point of ≥10. The minimum and maximum possible scores were 0 – 30. This questionnaire is widely used in studies on postpartum depression. All questionnaires were validated by two psychology experts at Airlangga University.

Data collection was conducted face-to-face and assisted by three trained enumerators with more than two years of work experience as midwives. The selection of participants was facilitated by

midwives working at the respective community health centers. Enumerators explained the study objectives and requested participants' consent before conducting interviews, which lasted approximately 15 minutes.

Data Analysis and Processing

Data were analyzed using SPSS version 25. Because the data were not normally distributed, nonparametric tests were used. A Chi-square test was performed for bivariate analysis, and logistic regression was used for multivariate analysis, with statistical significance set at $p<0.05$.

RESULT

Sociodemographic, obstetric, and baby characteristics

Table 1. Distribution of Sociodemographic, obstetric, and baby characteristics

Variable	Mean±SD/n,%
Sociodemographic factors	
Age (years)	28.64±4.830 (19 – 45)
Education level	
Primary and secondary school	16 (6.7)
High school	120 (50.2)
Higher education	103 (43.1)
Occupation	
Unemployed	88 (36.8)
Employed	151 (63.2)
Family income	
< District minimum wage	47 (19.7)
≥ District minimum wage	192 (80.3)
Length of marriage	
< 5 years	143 (59.8)
≥ 5 years	96 (40.2)
Living together	
With husband only	50 (20.9)
With husband and parents-in-law or parents	189(79.1)
Obstetric and baby factors	
Parity	
Primipara	102 (42.7)
Multipara	137 (57.3)
Pregnancy intention	
Unplanned	66 (27.6%)
Planned	173 (72.4)
Mode of delivery	
Normal	67 (28.0)
Sectio Caesarea	173 (72.0)
Gender of the baby	
Boy	124 (51.9)
Girl	115 (48.1)
Feeding pattern	
Breastfeeding only	125 (51.9)
Mixed feeding or formula milk	115 (47.7)

The prevalence of postpartum depression was 47.3%. Table 1 presents the participants' sociodemographic, obstetric, and infant characteristics. Most respondents were within the healthy

reproductive age. The majority had an intermediate level of education, were employed, and had family incomes higher than the district minimum wage. Most had been married for less than five years and were living with their husbands and in-laws. The majority were multiparous mothers with planned pregnancies. Most deliveries were by cesarean section, the babies were predominantly male, and most mothers exclusively breastfed their babies.

Table 2. Distribution of stressors during the postpartum period and husband's support

Variable	Mean±SD (Min – Max)
Stressor during postpartum period	
Personal needs and fatigue	19.92±6.935 (12 – 43)
Infant nurturing	15.74±5.486 (10 – 34)
Body changes and sexuality	6.48±3.007 (3 – 16)
Husband support	
Instrumental husband support	22.89±4.119 (10 – 30)
Emotional husband support	11.37±2.789 (3 – 15)

Table 2 shows that the scores for personal needs and fatigue, infant nurturing, body changes and sexuality, as well as instrumental and emotional husband support, tend to be relatively homogeneous and less varied based on the mean and standard deviation values.

Determinants associated with the prevalence of postpartum depression

Table 3. The relationship between determinants and the incidence of postpartum depression

Variable	PPD - n (%)	PPD + n (%)	X^2	p
Sociodemografic factors				
Age	29.37±5.121 (19 – 45)	27.81±4.360 (19 – 42)	3.955	0.047
< 20 years and >35 years	22 (71.0)	9 (29.0)		
20 – 35 years	104 (50.0)	104 (50.0)		
Education level			0.502	0.778
Primary and secondary school	8 (50.0)	8 (50.5)		
High school	61 (50.8)	59 (49.2)		
Higher education	57 (55.3)	46 (44.7)		
Occupation			0.000	1.000
Unemployed	46 (57.6)	42 (42.4)		
Employed	80 (50.9)	71 (49.1)		
Family income			0.55	0.814
< District minimum wage	26 (55.3)	21 (44.7)		
≥ District minimum wage	100 (52.1)	92 (47.9)		
Length of marriage			1.670	0.196
< 5 years	70 (49.0)	73 (51.0)		
≥ 5 years	56 (58.3)	40 (41.7)		

Variable	PPD -	PPD +	X^2	p
	n (%)	n (%)		
Living together			1.739	0.187
With husband only	31 (62.0)	19 (38.0)		
With husband and parents-in-law or parents	95 (50.3)	94 (49.7)		
Obstetric and baby factors				
Parity			1.909	0.130
Primipara	48 (47.1)	54 (52.9)		
Multipara	78 (56.9)	59 (43.1)		
Pregnancy intention			0.614	0.433
Unplanned	38 (57.6)	28 (42.2)		
Planned	88 (50.9)	85 (49.1)		
Mode of delivery			0.663	0.416
Normal	32 (47.8)	35 (52.2)		
Sectio Cesarea	94 (54.7)	78 (45.3)		
Gender of the baby			0.555	0.456
Boy	62 (50.0)	62 (50.0)		
Girl	64 (55.7)	51 (44.3)		
Feeding pattern			0.011	0.917
Breastfeeding only	65 (52.2)	60 (48.0)		
Mixed feeding or formula milk	61 (53.5)	53 (46.5)		
Personal needs and fatigue			32.857	0.000
Low	80 (73.4)	29 (26.6)		
High	46 (35.4)	84 (64.6)		
Infant nurturing			14.377	0.000
Low	72 (66.7)	36 (33.3)		
High	54 (41.2)	77 (58.8)		
Body changes and sexuality			30.468	0.000
Low	77 (73.3)	28 (26.7)		
High	49 (36.6)	85 (63.4)		
Instrumental husband support			6.331	0.012
Low	52 (44.1)	66 (55.9)		
High	74 (61.2)	47 (38.8)		
Emotional husband support			12.936	0.000
Low	33 (37.1)	56 (62.9)		
High	93 (62.0)	57 (38.0)		

Table 3 shows several determinants related to the incidence of postpartum depression, including age ($p = 0.047$), personal needs and fatigue ($p < 0.001$), infant nurturing ($p < 0.001$), body changes and sexuality ($p < 0.001$), instrumental husband's support ($p = 0.012$), and emotional husband's support ($p < 0.001$). To proceed to the multivariate analysis, all variables with a p-value < 0.05 and variables with a p-value < 0.25 were included in the logistic regression analysis, such as length of marriage ($p = 0.196$), living together ($p = 0.187$), and parity ($p = 0.167$).

Regression logistic analysis

The results of the multivariate analysis using logistic regression showed that the determinants significantly associated with the incidence of postpartum depression were personal needs and fatigue, and emotional support from the husband. These factors were controlled by age, infant nurturing, body changes and sexuality, and instrumental husband's support. The model was deemed feasible because it met the significance criteria, with an omnibus test result of $p = 0.000$ and a Nagelkerke R Square value of 0.276 (27.6%). Among these factors, the variables that most dominantly influenced the incidence of postpartum depression were body changes and sexuality, with an OR of 2.861 (95% CI: 1.465 – 5.586),

and personal needs and fatigue, with an OR of 2.700 (95% CI: 1.339–5.444). This indicates that postpartum women who experience stressors related to body changes, sexuality, personal needs, and fatigue are almost three times more likely to experience postpartum depression

Table 4. Multiple Logistic Regression Analysis of Determinants Related to Postpartum Depression

Characteristics	B	SE	Wald	p	Exp (B)	95% CI	
						Lower	Upper
Age	0.655	0.480	1.865	0.172	1.925	0.752	4.928
Personal needs and fatigue	0.993	0.358	7.708	0.005	2.700	1.339	5.444
Infant nurturing	-0.047	0.378	0.016	0.900	0.954	0.455	1.999
Body changes and sexuality	1.051	0.341	9.478	0.002	2.861	1.465	5.586
Instrumental husband support	-0.119	0.321	0.136	0.712	0.888	0.473	1.667
Emotional husband support	-0.780	0.325	5.772	0.016	0.458	0.242	0.866
Constant	-3.035	1.172	6.703	0.010	0.048		

DISCUSSION

This research revealed that the prevalence of postpartum depression (PPD) in Badung Regency, Bali Province, is 47.3%, which is higher than the prevalence reported in other regions of Indonesia and other countries globally. The Middle East has the highest prevalence (26%), while Europe has the lowest (8%) (Shorey et al., 2018). A review of 143 studies reporting prevalence in 40 countries demonstrated that there is a wide range of reported PPD prevalence, ranging from almost 0% to nearly 60%. In some countries such as Singapore, Malta, Malaysia, Austria, and Denmark, there are very few reports of PPD or postpartum depressive symptoms, whereas in other countries (e.g., Brazil, Guyana, Costa Rica, Italy, Chile, South Africa, Taiwan, and Korea), postpartum depressive symptoms are highly prevalent (Halbreich & Karkun, 2006). Variables associated with the prevalence of postpartum depression in Badung Regency include age, personal needs and fatigue, infant nurturing, body changes and sexuality, instrumental husband support, and emotional husband support.

Factors related to postpartum depression prevalence

Age

Several studies show that younger women have a higher risk of developing PPD than older ones (Bradshaw et al., 2022; Trier et al., 2019). This is because individuals under 20 years old are still developing emotionally and cognitively, which can affect their ability to cope with the stresses of motherhood. They may lack the maturity to handle the emotional and psychological demands of being a parent (Orchard et al., 2023). Moreover, hormonal fluctuations during the postpartum period can significantly impact mood and emotional stability. These fluctuations can be more pronounced in women under 20 years due to their ongoing developmental changes (Modak et al., 2023). On the other hand, women over 35 years old face a higher risk of experiencing postpartum depression because physical recovery from childbirth can be more challenging for older women, affecting their overall well-being and increasing the risk of PPD (Muraca & Joseph, 2014).

Fatigue

Additionally, personal needs and fatigue are closely correlated with the occurrence of PPD. Meeting personal physical needs, such as adequate rest, nutrition, and self-care, is essential for preventing postpartum depression. When these needs are not met, it can lead to increased fatigue and stress, both of which are known risk factors for PPD (Ghaedrahmati et al., 2017). One of the main sources of fatigue is disrupted sleep. Sleep deprivation is a well-known risk factor for depression and can exacerbate the symptoms of postpartum depression. Women experiencing significant sleep problems are more likely to develop PPD (Leistikow & Smith, 2024).

Infant nurturing

Another variable found in this research is infant nurturing. Caring for an infant is physically and emotionally demanding. The constant needs of an infant, including feeding, diaper changes, and sleep disruptions, can lead to high levels of stress and fatigue. This stress can contribute to the development of postpartum depression, particularly if a mother feels overwhelmed or unsupported (Corrigan et al., 2015). Conversely, effective nurturing can provide emotional satisfaction and reinforce positive self-esteem. When mothers can meet their infants' needs effectively, they are more likely to experience a sense of accomplishment and reduced depressive symptoms (Nguyen, 2023).

Body image

Body image dissatisfaction is another common issue for postpartum women. Negative feelings about body changes, such as weight retention and stretch marks, can significantly contribute to PPD. Women who struggle with body image are more prone to experiencing depressive symptoms during the postpartum period (Miller et al., 2022). A decrease in sexual desire is also common after childbirth due to hormonal changes, physical exhaustion, and emotional stress. This can lead to relationship strain, which in turn contributes to the development of PPD (Galbally et al., 2019).

Body image dissatisfaction consistently predicts the onset of both prenatal and postpartum depression, though the association is often weak. While body image dissatisfaction can lead to depression, studies examining whether depression leads to body image dissatisfaction in the postpartum period have yielded less consistent results (Silveira et al., 2015).

Husband support

Poor social support from partners is associated with a higher likelihood of depression (Dlamini et al., 2019). Instrumental support refers to the practical help a husband or partner provides to a new mother, such as caring for the baby, managing household chores, and ensuring that the mother has time to rest and recover. Research shows that when husbands are actively involved in these aspects, it significantly reduces the risk of PPD. Practical support alleviates the burden on the mother, preventing feelings of being overwhelmed, which is a key factor in PPD (Mitnick et al., 2022). In addition to practical help, the emotional support that husbands provide is also crucial. Emotional stability and security offered by a supportive partner can protect against feelings of loneliness and anxiety, which are common triggers of PPD. A study found that women who reported higher levels of emotional and instrumental support from their partners were less likely to develop PPD (Antoniou et al., 2022). Emotional support that husbands can give to postpartum mothers includes listening to their concerns, appreciating their efforts in caring for the baby, and showing affection through words and actions.

If we look closely at the local context, society in Bali still adheres to a strong patriarchal system, where married Balinese women traditionally leave their parental homes to live with their husbands' families (*ngerob*). They carry out multiple new roles in household, economic, and religious activities, commonly referred to as "triple roles." The husband's role in maintaining good relations between his wife and extended family is therefore very important. Almost all native Balinese are Hindu. Although Balinese women often perform multiple roles and are required to fulfill many tasks, most perceive work as both an obligation and a form of offering (*yadnya*). This aligns with Hindu teachings widely practiced among Balinese people, which emphasize sincerity in every action.

Nevertheless, the patriarchal culture practiced within Hindu society in Bali and the custom of living with in-laws often result in limited decision-making autonomy for women. Decisions frequently influenced by extended family members (in-laws) include providing nutrition for infants, using traditional herbal preparations, selecting baby equipment that may no longer be recommended, and determining the mother's diet during the postpartum period.

In Balinese society, individuals are deeply tied to communal life through traditional village structures such as *banjar* (community councils) and *adat* (customary law). Women are expected to participate in numerous ceremonies, offerings (*banten*), and temple preparations. These responsibilities are time-consuming and physically demanding, especially when women also have modern roles as workers, professionals, or caregivers. Balinese culture traditionally upholds patriarchal norms—men are public decision-makers, while women manage domestic and ritual responsibilities. Women are expected to be devoted wives, mothers, and religious caretakers. A woman's value is often linked to her ability

to serve her family and community rather than personal ambition or self-care. This can amplify psychological stress, particularly for educated or working women balancing traditional and modern expectations.

The World Health Organization (WHO) proposes several strategies to reduce the incidence of postpartum depression, including fostering a supportive environment, implementing health promotion and prevention efforts, treating mild mental health symptoms within maternal and child health services, referring moderate to severe cases to specialist care, and providing medication when necessary by trained providers (WHO, 2008). In Indonesia, a mental health screening program has been launched since early 2025 through the "Satu Sehat" application, although this program is not specifically targeted at postpartum mothers. Badung Regency has not yet conducted routine screening for postpartum depression. The findings of this study can serve as a foundation for developing postpartum depression prevention programs, including establishing a referral system for mothers showing depressive symptoms.

The results of the logistic regression analysis show that stressors related to body changes, sexuality, personal needs, and fatigue make mothers nearly three times more likely to experience postpartum depression. Stress caused by body changes and sexuality reflects low self-confidence among mothers, leading to low self-esteem and a higher risk of PPD. Therefore, education related to proper diet and physical activity for postpartum mothers is crucial to address this issue. Meanwhile, stress caused by unmet personal needs and fatigue indicates low levels of instrumental support and insufficient personal time. In this case, it is essential to provide education to husbands on the importance of offering both instrumental and emotional support to mothers during the postpartum period.

Despite its key findings, this research has several limitations. First, the study focuses only on postpartum mothers in Badung Regency, Bali, which may limit the generalizability of the findings to other regions with different demographics, healthcare systems, or cultural norms. Second, the focus on husband support may overlook contributions from other family members or community resources, which can also play a significant role in certain cultural settings. However, this study also has notable strengths. It addresses postpartum depression (PPD) within a Balinese cultural context—an area with limited district-level data. Therefore, the findings provide valuable insights for local health planning and the development of culturally sensitive interventions.

CONCLUSION AND RECOMMENDATION

The prevalence of postpartum depression in Badung Regency, Bali Province, is 47.3%. Key contributing factors include age, personal needs, fatigue, infant nurturing, body changes and sexuality, as well as instrumental and emotional husband support. Among these, the most influential factors are body changes and sexuality, personal needs, and fatigue. Further research is needed to confirm these findings through a longitudinal design or broader cultural comparisons. We recommend routine screening for postpartum depression in health centers, education for postpartum mothers on proper body care after childbirth, and active involvement of husbands in postpartum care education.

REFERENCES

Aadillah, V. Y., & Nurbaeti, I. (2023). Postpartum Depression and Its Contributing Factors among Mothers during the COVID-19 Pandemic in North Jakarta, Indonesia. *Nurse Media Journal of Nursing*, *13*(1), 85–94. https://doi.org/10.14710/nmjn.v13i1.49860

Antoniou, E., Tzanoulinou, M.-D., Stamoulou, P., & Orovou, E. (2022). The Important Role of Partner Support in Women's Mental Disorders During the Perinatal Period. A Literature Review. *Maedica - A Journal of Clinical Medicine*, *17*(1), 289–298. https://doi.org/10.26574/maedica.2022.17.1.194

Asadi, M., Noroozi, M., & Alavi, M. (2022). Identifying women's needs to adjust to postpartum changes: a qualitative study in Iran. *BMC Pregnancy and Childbirth*, *22*(1), 115. https://doi.org/10.1186/s12884-022-04459-8

Atuhaire, C., Rukundo, G. Z., Nambozi, G., Ngonzi, J., Atwine, D., Cumber, S. N., & Brennaman, L.

(2021). Prevalence of postpartum depression and associated factors among women in Mbarara and Rwampara districts of south-western Uganda. *BMC Pregnancy and Childbirth*, *21*(1), 503. https://doi.org/10.1186/s12884-021-03967-3

Biaggi, A., Conroy, S., Pawlby, S., & Pariante, C. M. (2016). Identifying the women at risk of antenatal anxiety and depression: A systematic review. *Journal of Affective Disorders*, *191*, 62–77. https://doi.org/10.1016/j.jad.2015.11.014

Bradshaw, H., Riddle, J. N., Salimgaraev, R., Zhaunova, L., & Payne, J. L. (2022). Risk factors associated with postpartum depressive symptoms: A multinational study. *Journal of Affective Disorders*, *301*(July 2021), 345–351. https://doi.org/10.1016/j.jad.2021.12.121

Corrigan, C. P., Kwasky, A. N., & Groh, C. J. (2015). Social Support, Postpartum Depression, and Professional Assistance: A Survey of Mothers in the Midwestern United States. *The Journal of Perinatal Education*, *24*(1), 48–60. https://doi.org/10.1891/1058-1243.24.1.48

Dlamini, L. P., Mahanya, S., Dlamini, S. D., & Shongwe, M. C. (2019). Prevalence and factors associated with postpartum depression at a primary healthcare facility in Eswatini. *South African Journal of Psychiatry*, *25*(0), 1404. https://doi.org/10.4102/sajpsychiatry.v25i0.1404

Galbally, M., Watson, S. J., Permezel, M., & Lewis, A. J. (2019). Depression across pregnancy and the postpartum, antidepressant use and the association with female sexual function. *Psychological Medicine*, *49*(09), 1490–1499. https://doi.org/10.1017/S0033291718002040

Ghaedrahmati, M., Kazemi, A., Kheirabadi, G., Ebrahimi, A., & Bahrami, M. (2017). Postpartum depression risk factors: A narrative review. *Journal of Education and Health Promotion*, *6*(1). https://doi.org/10.4103/jehp.jehp_9_16

Halbreich, U., & Karkun, S. (2006). Cross-cultural and social diversity of prevalence of postpartum depression and depressive symptoms. *Journal of Affective Disorders*, *91*(2–3), 97–111. https://doi.org/10.1016/j.jad.2005.12.051

Hopkins, J., & Campbell, S. B. (2008). Development and validation of a scale to assess social support in the postpartum period. *Archives of Women's Mental Health*, *11*(1), 57–65. https://doi.org/10.1007/s00737-008-0212-5

Khademi, K., Kaveh, M. H., Ghahremani, L., Nazari, M., & Karimi, M. (2023). The impact of family social support on postpartum quality of life among Iranian women: structural equation modelling. *Journal of International Medical Research*, *51*(2). https://doi.org/10.1177/03000605221147198

Kristensen, I. H., Simonsen, M., Trillingsgaard, T., Pontoppidan, M., & Kronborg, H. (2018). First-time mothers' confidence mood and stress in the first months postpartum. A cohort study. *Sexual & Reproductive Healthcare*, *17*(June), 43–49. https://doi.org/10.1016/j.srhc.2018.06.003

Lee, M.-S., Lee, J. J., Park, S., Kim, S., & 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 & Gynecology*, *44*(1), 2231629. https://doi.org/10.1080/0167482X.2023.2231629

Leistikow, N., & Smith, M. H. (2024). The role of sleep protection in preventing and treating postpartum depression. *Seminars in Perinatology*, *48*(6), 151947. https://doi.org/10.1016/j.semperi.2024.151947

Lindayani, I. K., & Marhaeni, G. A. (2020). Prevalensi dan Faktor Risiko Depresi Postpartum Di Kota

Denpasar Tahun 2019. *Jurnal Midwifery Update (MU)*, *2*(2), 100–109. https://doi.org/10.32807/jmu.v2i2.94

Lowdermilk, D. L., Perry, S. E., & Cashion, K. (2013). *Maternity Nursing-Revised Reprint-e-book* (8th ed.). Elsevier health Sciences. https://books.google.co.id/books/about/Maternity_Nursing_E_Book.html?id=A9XsAwAAQBAJ&redir_esc=y

Luciano, M., Sampogna, G., Del Vecchio, V., Giallonardo, V., Perris, F., Carfagno, M., Raia, M. L., Di Vincenzo, M., La Verde, M., Torella, M., & Fiorillo, A. (2021). The Transition From Maternity Blues to Full-Blown Perinatal Depression: Results From a Longitudinal Study. *Frontiers in Psychiatry*, *12*, 1–9. https://doi.org/10.3389/fpsyt.2021.703180

Martínez-Galiano, J. M., Hernández-Martínez, A., Rodríguez-Almagro, J., Delgado-Rodríguez, M., Rubio-Alvarez, A., & Gómez-Salgado, J. (2019). Women's Quality of Life at 6 Weeks Postpartum: Influence of the Discomfort Present in the Puerperium. *International Journal of Environmental Research and Public Health*, *16*(2), 253. https://doi.org/10.3390/ijerph16020253

Miller, E. R., Anderson, K. L., & Smith, J. A. (2022). Postpartum Body Image Dissatisfaction and Its Association with Depressive Symptoms. *Journal of Women's Health*, *31*(5), 545–554. https://doi.org/10.1089/jwh.2021.0545

Mitnick, D. M., Lorber, M. F., Smith Slep, A. M., Heyman, R. E., Xu, S., Bulling, L. J., Nichols, S. R., & Eddy, J. M. (2022). "Self-report measures of coercive process in couple and parent–child dyads": Correction. *Journal of Family Psychology*, *36*(4), 522–522. https://doi.org/10.1037/fam0000973

Modak, A., Ronghe, V., Gomase, K. P., Mahakalkar, M. G., & Taksande, V. (2023). A Comprehensive Review of Motherhood and Mental Health: Postpartum Mood Disorders in Focus. *Cureus*, *29*(15). https://doi.org/10.7759/cureus.46209

Muraca, G. M., & Joseph, K. (2014). The Association Between Maternal Age and Depression. *Journal of Obstetrics and Gynaecology Canada*, *36*(9), 803–810. https://doi.org/10.1016/S1701-2163(15)30482-5

Nakić Radoš, S., Brekalo, M., & Matijaš, M. (2023). Measuring stress after childbirth: development and validation of the Maternal Postpartum Stress Scale. *Journal of Reproductive and Infant Psychology*, *41*(1), 65–77. https://doi.org/10.1080/02646838.2021.1940897

Nguyen, T. (2023). The Impact Of Social Media On Adolescents. In *Senior Theses* (Vol. 104). https://doi.org/10.33015/dominican.edu/2023.NURS.ST.19

Nurbaeti, I., Deoisres, W., & Hengudomsub, P. (2018). Postpartum depression in Indonesian mothers: Its changes and predicting factors. *Pacific Rim International Journal of Nursing Research*, *22*(2), 93–105. https://he02.tci-thaijo.org/index.php/PRIJNR/article/view/84760

Nurbaeti, I., Deoisres, W., & Hengudomsub, P. (2019). Association between psychosocial factors and postpartum depression in South Jakarta, Indonesia. *Sexual & Reproductive Healthcare*, *20*(January), 72–76. https://doi.org/10.1016/j.srhc.2019.02.004

Orchard, E. R., Rutherford, H. J. ., Holmes, A. J., & Jamadar, S. D. (2023). Matrescence: lifetime impact of motherhood on cognition and the brain. *Trends in Cognitive Sciences*, *27*(3), 302–316. https://doi.org/10.1016/j.tics.2022.12.002

Putriarsih, R., Budihastuti, U. R., & Murti, B. (2017). Prevalence and Determinants of Postpartum Depression in Sukoharjo District , Central Java. *Journal of Maternal and Child Health*, *3*(1), 11–24. https://thejmch.com/index.php/thejmch/article/view/76

Qobadi, M., Collier, C., & Zhang, L. (2016). The Effect of Stressful Life Events on Postpartum Depression: Findings from the 2009–2011 Mississippi Pregnancy Risk Assessment Monitoring System. *Maternal and Child Health Journal*, *20*(S1), 164–172. https://doi.org/10.1007/s10995-016-2028-7

Shi, P., Ren, H., Li, H., & Dai, Q. (2018). Maternal depression and suicide at immediate prenatal and early postpartum periods and psychosocial risk factors. *Psychiatry Research*, *261*, 298–306. https://doi.org/10.1016/j.psychres.2017.12.085

Shorey, S., Chee, C. Y. I., Ng, E. D., Chan, Y. H., Tam, W. W. S., & Chong, Y. S. (2018). Prevalence and incidence of postpartum depression among healthy mothers: A systematic review and meta-analysis. *Journal of Psychiatric Research*, *104*, 235–248. https://doi.org/10.1016/j.jpsychires.2018.08.001

Silveira, M. L., Ertel, K. A., Dole, N., & Chasan-Taber, L. (2015). The role of body image in prenatal and postpartum depression: a critical review of the literature. *Archives of Women's Mental Health*, *18*(3), 409–421. https://doi.org/10.1007/s00737-015-0525-0

Smith, M. V, Shao, L., Howell, H., Lin, H., & Yonkers, K. A. (2011). Perinatal Depression and Birth Outcomes in a Healthy Start Project. *Maternal and Child Health Journal*, *15*(3), 401–409. https://doi.org/10.1007/s10995-010-0595-6

Tola, Y., Ayele, G., Boti, N., Yihune, M., Gethahun, F., & Gebru, Z. (2021). Health-Related Quality-of-Life and Associated Factors Among Post-Partum Women in Arba Minch Town. *International Journal of Women's Health*, *Volume 13*, 601–611. https://doi.org/10.2147/IJWH.S295325

Trier, A. M., Mack, M. R., & Kim, B. S. (2019). The Neuroimmune Axis in Skin Sensation, Inflammation, and Immunity. *The Journal of Immunology*, *202*(10), 2829–2835. https://doi.org/10.4049/jimmunol.1801473

Wang, Z., Liu, J., Shuai, H., Cai, Z., Fu, X., Liu, Y., Xiao, X., Zhang, W., Krabbendam, E., Liu, S., Liu, Z., Li, Z., & Yang, B. X. (2021). Mapping global prevalence of depression among postpartum women. *Translational Psychiatry*, *11*(1), 543. https://doi.org/10.1038/s41398-021-01663-6

WHO. (2008). Perinatal Period. In *Encyclopedia of Public Health* (pp. 1096–1096). Springer Netherlands. https://doi.org/10.1007/978-1-4020-5614-7_2589

WHO. (2023). *Maternal Mental Health*. https://www.afro.who.int/sites/default/files/2024-02/Policy brief - Strengthening Maternal Mental Health in Ghana.pdf

Winston, R., & Chicot, R. (2016). The importance of early bonding on the long-term mental health and resilience of children. *London Journal of Primary Care*, *8*(1), 12–14. https://doi.org/10.1080/17571472.2015.1133012

Yoo, H., Ahn, S., Park, S., Kim, J., Oh, J., & Koh, M. (2021). Factors influencing prenatal and postpartum depression in Korea: a prospective cohort study. *Korean Journal of Women Health Nursing*, *27*(4), 326–336. https://doi.org/10.4069/kjwhn.2021.11.17