

Knowledge Analysis of Postnatal Mother about Essential Newborn Care with Incidence of Postpartum Blues: A Cross-Sectional Study

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Abstract: Stress in the postpartum period can cause anxiety, fatigue, and decreased self-care associated with an increased risk of postpartum depression. In Indonesia, the incidence of postpartum blues is between 50-70%. This study assessed knowledge of essential newborn care among postnatal mothers and identified the incidence rate of postpartum blues. This cross-sectional study was conducted in Bengkulu city. Respondents of this research were 57 mothers who met the criteria included in the 2 weeks postpartum in Public Health Facilities. Mother's knowledge was measured by Essential Newborn Care Questionnaire. The symptoms of postpartum blues were measured by the Edinburgh Postnatal Depression Scale (EPDS). The contingency coefficient shows a relationship between mother's knowledge about essential newborn care and the incidence of postpartum blues ($p = 0.002$; $r = 0.380$). The multiple logistic regression proved that knowledge is the main risk factor of postpartum blues ($p 0.007$; OR 6.039). The results of this study indicate that there is a significant relationship between maternal knowledge about essential newborn care and postpartum blues with a weak relationship. Those with poor knowledge, who are 6.039 times more risky than those with good knowledge, should be targeted for newborn care education.

Keywords: postpartum blues; knowledge; essential newborn care; post-partum mothers

INTRODUCTION

After giving birth, mothers are required to care for and raise their children to be good personalities, be under pressure to absorb learning in baby care and have the responsibility of being a mother. It can trigger depression in the mother after childbirth.¹ World Health Organization (WHO) has established practice guidelines regarding essential newborn care, including umbilical cord care, breastfeeding, thermoregulation, eye care, and immunization.² Difficulty in breastfeeding and the lack of maternal knowledge in baby care are included in factors that influence maternal stress levels postpartum.³ Stress in the postpartum period can cause anxiety, fatigue, and decreased self-care, which are factors associated with an increased risk of postpartum depression.⁴

Feelings of loss of control and emotional distress not only affect the mother but also have adverse effects on the infant as well,⁵ for instance, negative birth outcomes, poor mother-infant bonding, and long-term consequences for the child.⁶ The early postpartum period is crucial to improve the health and survival of both the newborn and the mother. However, the World Health Organization has reported that the postpartum and postnatal period receives less attention from healthcare professionals than the prenatal period and childbirth periods.⁷ Postpartum blues is a mood transition period after childbirth, which often occurs in 50-70% of women after childbirth. Some mothers recover quickly and achieve stability, but 13% of them will experience postpartum depression. The incidence of postpartum blues in Asia is quite high and

varies between 26-85%. In Indonesia, the incidence of postpartum blues is between 50-70%.⁸ Postpartum blues is often neglected and poorly managed because it is still considered normal in postpartum mothers.¹

Bengkulu region is at low elevation and can have swamps. The area of this city lies parallel to the mountains of Bukit Barisan and face to face with the Indian Ocean. A recent report predicts that Bengkulu is "at risk of inundation over the next few decades from undersea earthquakes predicted along the coast of Sumatra".⁹ Based on the information above, researchers are interested in conducting research on the correlation of postpartum maternal knowledge about essential newborn care with the incidence of postpartum blues in Bengkulu City in 2022.

MATERIAL AND METHOD

The study was conducted in public health facilities in the seashore zone in Bengkulu City. Bengkulu City is located in a coastal area directly facing the Indian Ocean. The city has an area of 144.52 km² with an average altitude of less than 500 meters. As an area located on the coast, Bengkulu City does not have an area more than 30 km from the coast. The study was conducted in respondents' homes in the area of all public health facilities in Bengkulu City. Researchers used a cross-sectional study from August to September 2022. The study population is all mothers who gave birth in Bengkulu City in 2022.

The inclusion criteria in this study were all mothers who belonged within 2 weeks postpartum, either primipara or multipara, giving birth in public health facilities in Bengkulu and could communicate verbally and nonverbally. The exclusion criteria in this study were all mothers who had postpartum complications and psychiatric disorders and were uncooperative.

Sampling was done by purposive sampling technique. Respondents of this study were 57 mothers who lived within 2 weeks postpartum in Bengkulu City. The independent variables in this study were the mother's knowledge about essential newborn care and the dependent variable, postpartum blues.

Operational Definition and Definition of Terms
Satisfactory knowledge: When the postnatal mother answered the knowledge question above or equal to the median, they were considered to have satisfactory knowledge. *Poor knowledge:* When the postnatal mother answered the knowledge question below to the median, they were considered to have poor knowledge. *Essential newborn care:* the care provided to a newborn immediately after delivery, which includes the time between birth to 24 hours care, is essential newborn care, and it includes keeping the newborn warm (prevent hypothermia), delayed bathing of the baby for 24 hours after birth, cord care, initiate breastfeeding in the first one hour, administer vitamin K intramuscularly and administer eye ointment. *Postpartum blues:* feelings of sadness a woman may have in the first few days after having a baby. Screening for postpartum blues utilized the Edinburgh Postnatal Depression (EPDS) scale. When the postnatal mother's scoring was above or equal to ten, they were considered to have postpartum blues symptoms; when the postnatal mother's scoring was below ten, they were considered not to have postpartum blues symptoms.

Data were collected through a self-administered questionnaire to assess the knowledge of postnatal mothers on essential newborn care and the symptoms of postpartum blues. The questionnaire was adapted from WHO guidelines and EPDS. Secondary data is obtained from public health facilities in Bengkulu.

Data quality was controlled by training data collectors on objectives, questionnaires, and ways of administering questionnaires. Also, a pretest was conducted in 5% of the sample size in Penurunan Public Health Center and Lempuing Public Health Center, and then the necessary arrangements and corrections were made. All filled questionnaires were checked for completeness, accuracy, and consistency.

The data were entered and exported to the SPSS statistical package version 24 for further analysis. Data were presented in frequency, proportions, and summary statistics to describe the study variables and factors under the study. The dependent variable was computed from 10 screening postpartum blues questions. Then, the scoring above and equal to ten were considered as having a postpartum blues symptom. The study's results were analyzed using the correlation coefficient correlation test and multiple logistic regression.

This study was conducted by Declaration Helsinki, which guides the researcher in protecting research subjects. The study was approved by the institutional research review committee of the Health Research Ethics Committee, Faculty of Medicine and Health Science, Bengkulu University, Bengkulu (ref. no 324/UN30.14.9/LT/2021). Furthermore, the participants were informed that participation was voluntary and about the benefits and harms of participation. Sample collection was done based on their agreement.

RESULT

Sociodemographic Characteristics

Of the total of 57 postnatal mothers, all participated in the study, making a response rate of 100%. The median age of respondents was 27. Regarding their parity, 34(59,6%) participants were multipara. Regarding their educational qualification, 25 (43,9%) participants have a senior high school level, as shown in Table 1.

Table 1. Sociodemographic Characteristics of Postnatal Mothers in Public Health Facilities in The Seashore Zone, Bengkulu, August-September 2022

	Characteristics of Respondents	N	Percentage (%)
Age	<20 years old	4	7
	20-35 years old	48	84.2
	>35 years old	5	8.8
Education level	Not completed in primary	2	3.5
	primary school	1	1.8
	Junior high school	7	12.3
	Senior High School/equal	25	43.9
	College	22	38.6
Employment status	Employed	12	21.1
	Unemployed	45	78.9

Table 2: Characteristics of Postnatal Mother Based on Postpartum Blues Symptoms in Public Health Facilities in Seashore Zone, Bengkulu, August-September 2022

Variables	Category	Frequency	Percentage (%)
Postpartum blues symptom	Postpartum blues symptom (+)	35	61.4
	Postpartum blues symptom (-)	22	38.6

Results of the relationship analysis between the characteristics of respondents and the incidence of postpartum blues are listed in Table 3. Table 3 shows the p-value for the variable age, which is 0.272; education level, 0.539; employment status, 0.025; and parity status, 0.533. It indicated that statistically, only the employment status variable correlated with the incidence of postpartum blues.

Knowledge of essential newborn care

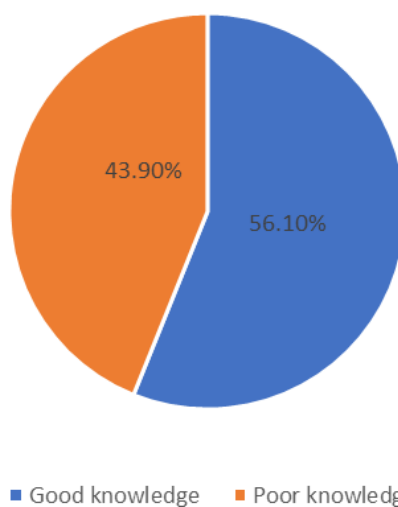


Figure 1. Participant's Knowledge of Essential Newborn Care Practice of Postnatal Mother Based on Postpartum Blues Symptoms in Public Health Facilities in Seashore Zone, Bengkulu, August-September 2022

Table 3. Analysis of The Relationship between Postnatal Mother Knowledge about Essential Newborn Care and The Incidence of Postpartum Blues

Variables	Yes		No		Total		(r)	p
	N	%	N	%	N	%		
Age								
< 20 years and > 35 years	7	12.3	2	3.5	9	15.8	0.144	0.272
20-35 years old	28	49.1	20	35.1	48	84.2		
Education level								
Low	7	12.3	3	5.3	10	17.5		
High	28	49.1	19	33.3	47	82.5	0.081	0.539
Employment Status								
Unemployed	31	54.4	14	24.6	45	78.9		
Employed	4	7	8	14	12	21.1	0.285	0.025
Parity								
Primipara	13	22.8	10	17.5	23	40.4		
Multipara	22	38.6	12	21.1	34	59.6	0.082	0.533

Table 4 analyses the relationship between postnatal mothers' knowledge about essential newborn care and the incidence of postpartum blues. Respondents who had positive symptoms of postpartum blues were mostly at the level of poor knowledge (36.8%), and there was a significant correlation between postnatal mother knowledge about essential newborn care and the incidence of postpartum blues with a significant value of 0.002 ($p < 0.05$), contingency coefficient 0.380 (< 0.4) which indicates a weak correlation. Multivariate analysis found that knowledge is a major risk factor for postpartum blues in postpartum mothers, with a p-value of 0.007 ($p < 0.05$). The analysis results for the knowledge variable obtained an OR value of 6.039.

Table 4. Analysis of the Relationship between Postnatal Mother Knowledge of Essential Newborn Care with the Incidence of Postpartum Blues

Knowledge	No Postpartum Blues		Postpartum Blues		(r)	p
	N	%	N	%		
Satisfactory	18	31.6	14	24.6	0.380	0.002
Poor	4	7.0	21	36.8		
Total	22	38.6	35	61.4		

DISCUSSION

This study showed that most research respondents were in the age range of 20-35 years, 48 people (84.2%). It showed that the majority of respondents were at the ideal age for women to get pregnant and give birth. In this study, some respondents were 20-35 years old, which was a healthy age of production, and complications rarely occur during pregnancy, childbirth, and the puerperium as physiologically and psychologically, the body's organs are ripe for reproduction.^{10,11} The majority of respondents have a senior high school education level, and most have fulfilled the compulsory education set by the government by Government Regulation of the Republic of Indonesia Number 47 the Year 2008 regarding Compulsory Education, which is for 9 years or the level of Junior High School or equivalent and continuing education at the high school level.

Furthermore, this study found that 49.1 % of respondents aged 20-35 years experienced postpartum blues and showed that age did not have a significant relationship with postpartum blues. The same results revealed that postpartum blues can occur in all age groups since the dominant cause of postpartum blues is hormonal changes in the postpartum period.¹² This result can be interpreted that the increasing age of women who have just undergone the process of childbirth does not affect the emergence of feelings of disturbance after childbirth.

Regarding the study's results, it was found that 49.1% of respondents with high education experienced postpartum blues, with the contingency coefficient correlation test finding no significant relationship between education and postpartum blues. This finding aligns with the study conducted in Sukoharjo District, Central Java, revealing a significant effect between the risk factors for maternal education and the incidence of postpartum blues.¹³ Respondents with unemployed status 45 people (79%), with the results of the analysis found that 54.4% of them experienced postpartum blues. The bivariate analysis found a significant relationship between employment and postpartum blues with a weak relationship. This finding

is supported by the study of Goyal, which states that unemployed and low socioeconomic status are at risk of having a 3.684 times greater chance of experiencing postpartum blues.¹⁴

Mothers who only work at home and care for their children can experience a crisis and disturbances due to fatigue. For homemakers who care for all their household matters, it may pressure their responsibilities as wives or mothers. Mothers who do not work are more focused on themselves and the baby. Therefore, if there is a problem, then a mother is blaming herself more and is more vulnerable to postpartum blues. Furthermore, a mother who did not work will lack information and insights from friends to be used in parenting.

The results of the research found that the majority of respondents were multipara, totaling 34 people (59.7%), with 38.6% of them experiencing postpartum blues. The analysis found no significant relationship between parity and postpartum blues. Multipara mothers who have experience in baby care do not rule out the possibility of experiencing symptoms of postpartum blues. It is more common in primipara but did not rule out the possibility of multipara mothers if the mother has a history of postpartum blues. The postpartum blues with multipara status may suffer from postpartum blues and have a history of postpartum blues, or mothers may experience trauma from the previous birthing process.¹⁵⁻¹⁷

Knowledge is the result of knowing, and this happens after people sense a certain object, which occurs through the five human senses: sight, hearing, smell, taste, and touch. In this case, knowing is interpreted as recalling (calling) pre-existing memory after observing something. Most human knowledge is obtained through the eyes and ears.¹⁸ Knowledge of essential newborn care in this study is categorized as satisfactory and poor. Categories are used to differentiate the two categories based on the median as a cut-off.¹⁹

The results of this study showed that more than half of the respondents had satisfactory knowledge. It is related to the higher education of the mother. The better the mother's knowledge is, the more information they will receive. However, in some people, education does not affect it because it is more influenced by the environment that the individual accepts.²⁰

The majority of respondents in this study were found to have postpartum blues. It is because postpartum blues are often neglected and not handled properly. After all, they are still considered normal in postpartum mothers¹. In around 10-15% of women who experience postpartum blues, if they do not get good management, they will tend to develop postpartum depression.³ Therefore, there is a need for preventive measures so that they do not develop into more severe conditions.

Some 32 respondents have satisfactory knowledge, and 14 of them have symptoms of postpartum blues, while the others have negative symptoms of postpartum blues. Respondents with satisfactory knowledge were found to have fewer positive symptoms than those who experienced negative symptoms. The difference between that only slightly shows the risk is almost the same between those who experience positive postpartum blues symptoms and those who do not experience postpartum blues symptoms in respondents with good categorical knowledge. It can be concluded that satisfactory knowledge about essential newborn care does not rule out the possibility for mothers to experience postpartum blues symptoms.

The majority of respondents in this study have satisfactory knowledge. However, in the 25 people who have poor knowledge category, 21 people had positive postpartum blues symptoms and 4 negative postpartum blues symptoms. It can be concluded that although the majority of respondents had satisfactory knowledge, it was found that the poor knowledge experienced more positive postpartum blues symptoms. Hunker (2017) also stated that postpartum blues experienced by women after childbirth are due to the lack of knowledge of women who have just given birth to new tasks that must be undertaken as mothers.¹⁶ The results of this study indicated that there is a significant relationship between maternal knowledge about essential newborn care and postpartum blues in postpartum mothers with a weak relationship.

Someone's knowledge is something that can shape a person's actions. Poor mother's knowledge can be said to have unpreparedness in caring for their baby. Mothers are under pressure to absorb learning about baby care. Mothers feel they have a great responsibility. This poor knowledge increases feelings of anxiety as they are not ready or do not know how to care for the baby, which can lead to the risk of postpartum blues symptoms. It aligns with Husain's study, which stated that the information obtained by postpartum mothers is important in reducing the level of anxiety.¹⁷

Moreover, it aligns with Hain's research which states that less optimal preparation can cause mothers to experience problems in the puerperium, such as postpartum blues.¹⁸ If the mother has adequate physical and mental readiness, it can reduce stress, anxiety, and fear about pregnancy and childbirth and can facilitate

the mother in adapting to her role. The analysis results for the knowledge variable obtained OR value of 6.039, means that respondents with knowledge in the poor category have a 6 times more risk of experiencing postpartum blues than respondents with knowledge in the satisfactory category. The results of this analysis showed that information obtained by postpartum mothers is important for reducing anxiety levels. The less optimal preparation may cause mothers to experience problems in the puerperium, such as postpartum blues.

As a result, the mother will get under pressure to absorb learning about newborn care. Moreover, most respondents in this study had satisfactory knowledge of essential newborn care, but they did not rule out that this poor knowledge will increase the anxiety of not being ready or not knowing how to take care of the baby, which can lead to the risk of positive postpartum blues symptoms.

CONCLUSION

The results of this study indicated that there was a significant relationship between maternal knowledge about essential newborn care and postpartum blues in postpartum mothers with a weak relationship. Knowledge about essential newborn care had a significant relationship with the incidence of postpartum blues. Those with poor knowledge that was 6.039 times more risky than those with good knowledge should be targeted for newborn care education.

Based on the study findings, we forwarded the following recommendation to respective institutions and bodies: public health facilities should follow their postnatal mother for further identification of problems associated with the gap in knowledge of essential newborn care; the managing bodies of hospitals and health center should strive for following up the postnatal condition, especially about the psychology condition, such as postpartum blues and the last public health center should provide health staff to making supportive and supervision on condition of postnatal mother.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

REFERENCES

1. Slomian J, Honvo G, Emonts P, Reginster JY, Bruyère O. Consequences of maternal postpartum depression: A systematic review of maternal and infant outcomes. *Womens Health (Lond Engl)*. 2019;15:174550651984404. <http://dx.doi.org/10.1177/1745506519844044>
2. World Health Organization. WHO Recommendations on Newborn Health: Guidelines Approved by the WHO Guidelines Review Committee. World Health Organization. 2017.
3. Saraswati SP. Knowledge and practice of postnatal mothers on newborn care at hospital setting. *ARC J Nurs Healthc*. 2016;2(1), 25–30.
4. Stewart DE, Vigod SN. Postpartum depression: Pathophysiology, treatment, and emerging therapeutics. *Annu Rev Med*. 2019;70(1):183–96. <http://dx.doi.org/10.1146/annurev-med-041217-011106>
5. Couto TC e. Postpartum depression: A systematic review of the genetics involved. *World J Psychiatry*. 2015;5(1):103. <http://dx.doi.org/10.5498/wjp.v5.i1.103>
6. American College of Obstetricians and Gynecologists. Depression, anxiety rates high among hospitalized pregnant women on bed rest. 2013. Retrieved from http://www.acog.org/About_ACOG/News_Room/News_Releases/2013/Depression_Anxiety_Rates_High_Among_Hospitalized_Pregnant_Women_on_Bed_Rest
7. WHO, recommendations on home-based records for maternal, newborn, and child health . Geneva: World Health Organization, 2018.
8. Kanés S, Colquhoun H, Gunduz-Bruce H, Raines S, Arnold R, Schacterle A, et al. Brexanolone (SAGE-547 injection) in post-partum depression: a randomised controlled trial. *Lancet*. 2017;390(10093):480–9. [http://dx.doi.org/10.1016/s0140-6736\(17\)31264-3](http://dx.doi.org/10.1016/s0140-6736(17)31264-3)
9. Bengkulu climate: Average Temperature, weather by month, Bengkulu water temperature - Climate-Data.org". en.climate-data.org. Archived from the original on 25 December 2021
10. Muliatul J, Hanifatur R, Nida S. Literature review: Relationship between Social Support and Postpartum Blues Incident. *Proceeding of the 1st International Nursing and Health Sciences Symposium*, 2020; 1(1): 66-71.

11. World Health Organization. Managing Complications in Pregnancy and Childbirth: A guide for midwives and doctors. 2017. Retrieved: <https://apps.who.int/iris/bitstream/10665/255760/1/9789241565493-eng.pdf>
12. Putriarsih R, Masters Program in Public Health, Universitas Sebelas Maret, Budihastuti UR, Murti B, Department of Obstetrics and Gynecology, Dr. Moewardi Hospital, Surakarta, Masters Program in Public Health, Universitas Sebelas Maret. Prevalence and determinants of postpartum depression in sukoharjo district, central java. *J Matern Child Health*. 2017;03(01):395–408. <http://dx.doi.org/10.26911/thejmch.2017.03.01.02>
13. Bradshaw H, Riddle JN, Salimgaraev R, Zhaunova L, Payne JL. Risk factors associated with postpartum depressive symptoms: A multinational study. *J Affect Disord*. 2022;301:345–51. <http://dx.doi.org/10.1016/j.jad.2021.12.121>
14. Agrawal I, Mehendale AM, Malhotra R. Risk factors of postpartum depression. *Cureus*. 2022; <http://dx.doi.org/10.7759/cureus.30898>
15. Bhat A, Grote NK, Russo J, Lohr MJ, Jung H, Rouse CE, et al. Collaborative care for perinatal depression among socioeconomically disadvantaged women: Adverse neonatal birth events and treatment response. *Psychiatr Serv*. 2017;68(1):17–24. <http://dx.doi.org/10.1176/appi.ps.201600002>
16. White LK, Kornfield SL, Himes MM, Forkpa M, Waller R, Njoroge WFM, et al. The impact of postpartum social support on postpartum mental health outcomes during the COVID-19 pandemic. *Arch Womens Ment Health*. 2023;26(4):531–41. <http://dx.doi.org/10.1007/s00737-023-01330-3>
17. Hain S, Oddo-Sommerfeld S, Bahlmann F, Louwen F, Schermelleh-Engel K. Risk and protective factors for antepartum and postpartum depression: a prospective study. *J Psychosom Obstet Gynaecol*. 2016;37(4):119–29. <http://dx.doi.org/10.1080/0167482x.2016.1197904>
18. Majumder S, Najnin Z, Ahmed S, Bhuiyan SU. Knowledge and attitude of essential newborn care among postnatal mothers in Bangladesh. *J Health Res*. 2018;32(6):440–8. <http://dx.doi.org/10.1108/jhr-05-2018-0015>
19. Bryce E, Mullany LC, Khatri SK, Tielsch JM, LeClerq SC, Katz J. Coverage of the WHO's four essential elements of newborn care and their association with neonatal survival in southern Nepal. *BMC Pregnancy Childbirth*. 2020;20(1). <http://dx.doi.org/10.1186/s12884-020-03239-6>
20. Mohini, Shetty S. A study to assess the knowledge of mothers on home based neonatal care at selected area of rural Bangalore. *Int J Community Med Public Health*. 2017;4(5):1695. <http://dx.doi.org/10.18203/2394-6040.ijcmph20171786>