



# Prevalence And Factors That Contributing of Baby Blues Syndrome On Postpartum Mothers

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## Article Info

### Article history:

Received March, 2022

Revised April, 2022

Accepted May, 2022

### Keywords:

Syndrome Baby Blue

Postpartum

Postpartum Depression

## ABSTRACT

Baby Blues syndrome describes different groups of depressive symptoms that can occur during the first 6 weeks after birth. The postpartum period is the critical time during which mild and severe mood disorders can occur. Understanding the prevalence and related factors of Baby Blues Syndrome becomes mandatory for early detection and treatment. The institution-based cross-sectional study was conducted from May 1 to June 30, 2021. Study participants were qualified women who visited hospitals and health centers in Muara Enim, Indonesia for postpartum care. The Edinburgh postnatal depression scale was used to assess baby blues syndrome. A systematic random sampling technique was used to collect the data, then coded instatistical tests with spss application version 24. Bivariate and multivariate binary logistic regressions are performed to decipher related factors. A total of 208 mothers who visited postpartum care were respondents, where the response obtained was 100% of the expected target. The prevalence of Baby Blues Syndrome was found at 15.6% (95%CI = 11.7, 19.8). Several factors were found to be the baby blues syndrome i.e. single parents, poor social support, having a child currently hospitalized, and a history of family members or close relatives who died significantly associated with. The prevalence of syndrome baby blues is quite high in postpartum mothers from the results of several studies at various points of location. Major events and life traumas are associated with an increased risk of postpartum depression that gave rise to Baby Blues Syndrome. Health care providers should be aware of the state of the mother during the puerperium, they must provide support from the beginning of pregnancy to reduce the risk of depression in the postpartum period. Health care professionals working in postpartum care clinics should pay special attention to mothers who are single parents, have poor social support, have children hospitalized at this time, and experience the death of family members or close relatives.

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## 1. INTRODUCTION

Most women experience specific, time-limited mood swings in the days following birth which are known as the postpartum blues (baby blues) (O'Keane et al., 2011). These emotional experiences are particular to the postpartum period because they differ phenomologically from reactions to emotional stressors or other major medical measures (Kennerley & Gath, 1989).

Postpartum blues or Baby blues syndrome is a phenomenon that occurs in the first days postpartum which has been reported since the late 19th century. Baby blues syndrome that often occurs in postpartum mothers (Deniati et al., 2022). Baby blues are brief and mild mood disturbances that occur for a few days after delivery (Howard et al., 2014; Okunola et al., 2021) and occur as a result of the adjustment process for the birth of the baby that lasts from a few hours to about two weeks, with the peak of instability occurring on day 3-5. Symptoms of depression include sadness, crying, fatigue, irritability, anxiety, sleep disturbances, decreased concentration, and an unstable mood.

Based on WHO data, the prevalence of baby blues syndrome in the world is around 3% to 8%. In Asia, cases of baby blues syndrome are still very high, around 26% - 85%. In Indonesia, the incidence of baby blues is 50% - 70%, and this can cause postpartum depression, with numbers varying from 5% to more than 25% after the mother gives birth. The number of postpartum blues cases is quite significant and cannot be ignored because although postpartum blues are usually mild and short-lived, about 10% - 15% of mothers experience a more severe syndrome, namely postpartum depression (Manurung & Setyowati, 2021; Nilaweera et al., 2014).

Based on 26 studies the prevalence of baby blues was reported to be around 13.7% to 76.0% (Rezaie-Keikhaie et al., 2020). There is a prevalence comparison depending on the assessment tools and research methodologies used ranging from 15% to 85% (Edmonds, 2012; Ntaouti et al., 2018). Based on research (Rezaie-Keikhaie et al., 2020) that the prevalence of baby blues occurs more in countries in Africa and Europe than in Asia and the United States. In addition, groups of low-income countries experience more postpartum blues events than those with high incomes.

According to (Ntaouti et al., 2018) the causes of baby blues are very complex, but it is suspected that there are influences from internal factors and external factors (Denis et al., 2012; M et al., 2018). According to (Pop et al., 2015), the possible cause of the baby blues is hormonal changes after childbirth, therefore women are more sensitive after (Pop et al., 2015). Baby blues is a common condition that may be caused by a decrease in the hormone progesterone (Putri & Putri, 2022). During pregnancy, various hormones in the mother's body increase as the fetus grows. After giving birth, the amount of various hormone productions such as estrogen, progesterone, and endorphins changes which can affect the mother's emotional state (O'Hara & Wisner, 2014). Physical fatigue and pain after giving birth, breast milk that has not come out so that the baby is fussy and swollen breasts, and lack of support. There are many risk factors for the occurrence of the baby blues such as lack of support, high-risk pregnancy, difficult or traumatic delivery, maternal health comorbidities, health problems in the baby (Maliszewska et al., 2016), admission to the neonatal intensive care unit, history of previous miscarriages, characteristics of the new baby, birth such as excessive crying and irritability, baby girl gender, premature delivery, postpartum complications (Okunola et al., 2021), feeling of inability to care for and breastfeed the baby, and lack of confidence in achieving motherhood (Denis et al., 2012). Meanwhile, based on the results of research (Manjunath et al., 2011) there is an extraordinary relationship between family income and the baby blues, because low-income families have a higher incidence than high-income families with a prevalence of 62% so that the entry of new members into the family. Families who are already struggling economically can create tremendous stress.

Baby blues or postpartum blues can interfere with infant care and increase the risk of postpartum depressive symptoms (Gerli et al., 2019; Zanardo et al., 2019), interfere with mother-infant interactions (Badr & Zauszniewski, 2017) and affect child development (Akbarzadeh et al., 2015; Mirhosseini et al., 2015). In this case, early intervention is needed to prevent postpartum depression (Dowlati et al., 2014). Lack of education for mothers since they are still in the pregnancy phase can cause delays in handling the baby blues. The role of health workers is a determinant of the occurrence of baby blues in postpartum mothers (Kurniawati & Septiyono, 2022). Counseling for pregnant women can prevent the baby blues (Ulfa et al., 2022). As a health worker

## 2. RESEARCH METHOD

**Study area, design and period :** The research was conducted in the city of Palembang, Indonesia. A cross-sectional study design was used from May 1 to June 30, 2021. The study site has a total of one government-owned referral hospital, three health centers, five private clinics, and more than ten practicing midwives. There were 208 mothers who gave birth and had postnatal visits during the study period.

**Population :** Source of population, all women who came for a postnatal visit within 6 weeks of giving birth at a referral hospital and health center in Muara Enim, Indonesia. Study Population, all women presenting for a postnatal visit within 6 weeks of delivery during the data collection period.

**Inclusion Criteria :** All women who gave birth and who presented for a postnatal visit within 6 weeks of delivery at health centers and referral hospitals and midwife practices.

**Exclusion Criteria :** Women who have verbal communication problems and total hearing loss.

**Calculation of Sample Size and Sampling Technique :** The required sample size was determined using the single population proportion formula with the following assumptions:  $(Z/2) =$  value for 95% CI, = 1.96,



proportion of postpartum depression; a similar study in Gondar, Indonesia ( $P = 23\%$ ) [17],  $d =$  margin of error taken as 5%; by adding 10% of the study subjects as the nonresponse rate, the final sample size became 531. The study subjects were interviewed using systematic random sampling after determining the sampling fraction ( $k = 531/208 = 2$ ) and the first participant was selected using the lottery method. The total sample size ( $n = 308$ ) was allocated proportionally according to the total number of participants in the postnatal visit at each hospital, puskesmas and practice midwife in Muara Enim.

**Variable :** Baby Blues Syndrome dependent variable (yes/no). Independent variable

**Socio-demographic factors:** age, educational status, economy, marital status, occupation, monthly income, current place of residence.

**Social factors:** Social and husband support, emotional abuse, physical violence, sexual violence, substance use: the use of any substance during the postpartum period for non-medical purposes (such as Khat, alcohol, and cigarettes).

**Pregnancy and delivery factors:** Parity, pregnancy intention, currently hospitalized child, mode of delivery, perinatal complications or diseases, stressful life events during the puerperium and unwanted fetal sex.

**Prior psychiatric history:** Family history (first degree relative) of psychiatric problems.

**Operational definition :** Poor social support. Mothers who scored 3-8 on the social support scale (Oslo-3) during the puerperium. Moderate social support. Mothers who scored 9-11 on the social support scale (Oslo-3) during the puerperium. Strong social support. Mothers who scored 11-14 on the social support scale (Oslo-3) during the puerperium.

**Data Collection Tools and Procedures :** A structured questionnaire administered by interviewers was used to collect information from study participants. Sociodemographic, clinical, and obstetric factors were excluded. Levels of social support were assessed using the Oslo social support scale, and the Edinburgh Postnatal Depression Scale (EPDS) was used to assess postpartum depression. Data were collected by means of a questionnaire given by interviewers to mothers who came for postnatal care.

**Data Quality Control And Analysis :** The data collection instrument was pre-tested on 5% of the sample size in other cities to improve language clarity and adapt the data collection tool. Estimates of the time required were made after testing the questionnaire. Four third-year midwifery D3 students collected the data. The data collectors were trained for 1 day on data collection technology. The training also covered the importance of disclosing the possible benefits and objectives of the research to study participants prior to the start of data collection. The researcher checked the completeness and consistency of the questionnaires filled out by the data collectors to ensure the quality of the data and also visited the data collectors as much as possible to check whether he collected the data correctly. Collected data were entered into Epi-info version 7 and analysis was performed after data was imported into SPSS version 24. During bivariate analysis, variables with  $p$  values  $< 0.05$  were exported to multivariate analysis. Coarse and adjusted odds ratios were analyzed using bivariate and multivariable binary logistic regression analysis and the significance level of association was determined at  $p$ -value  $< 0.05$ .

### 3. RESULTS AND ANALYSIS

Socio-demographic characteristics of postpartum mothers There were 531 mothers who gave birth and had postnatal visits during the study period. Among them, 208 mothers were included in the study using a systematic random sampling technique, with a response rate of 100%. Among the study subjects, 441 (85.7%) were aged 25-45 years and almost 85% were married. The majority of participants, 350 (65.9%) have attended formal education. Regarding ethnicity, the majority of the study participants, 403(75.9%) were natives of Muara Enim and 128(24.1%) were ethnic groups from outside. 461 (86.8%) participants earned more than the minimum monthly income of Rp. 3.158.000.

#### Obstetric and clinical characteristics of postpartum mothers

Of the 208 study participants, the majority of respondents 177 (85.1%) were multigravida (delivered  $> 1$ ) and 31 (14.5%) were primigravida (had their first child). Nearly 80% of participants had two or more living children during the study period. Regarding termination of pregnancy, 35(16.8%) had experienced termination of employment and 26(12.5%) had experienced the death of their child. 32(15.3%) participants reported that the recent pregnancy was unplanned. In addition, the sex of the last 189 babies (61.4%) were male and the rest were female. Regarding the desired sex of the last baby, 24 (11.5%) respondents said that the sex of their baby was the unwanted sex. In nearly 62% of the participants, 128(61.5%) mode of delivery was spontaneous vaginal delivery.

Forty-seven, 31(14.9%) respondents had had a disease diagnosed in their last pregnancy and 64(30.8%) study mothers reported having their baby hospitalized at least once before.

#### **Psychosocial Factors (In the Last 6 Months) Postpartum Mother**

Of the total study participants, 62(20.1%) answered that their family or close relatives had died. Nearly one-fifth (19.5%) of participants reported that there was a serious illness, injury or attack during a recent pregnancy. Nearly 60.59(19.2%) study participants had experienced the death of a parent or child and 42(13.6%) participants reported that they were separated due to marital difficulties. In addition, 41(13.7%) study participants were unemployed/unable to work in the last 6 months of the male period. In addition, 40(13%) reported physical violence during the last pregnancy (Table 3).

#### **Substance use among postpartum mothers**

Overall, 31(10.1%) study participants reported any substance use prior to pregnancy and of these the majority of use was related to alcohol; namely 21 (67.7%). The rest only use Khat at least once in their lifetime. Regarding the substances used during the last pregnancy, 18(5.8%) respondents used all kinds of substances, and all of them used alcohol.

History of known illness among postpartum mothers Of the total study participants, 31 (10.1%) had a known history of mental illness. In addition, 44 (14.3%) study respondents had a known family history of mental illness and 28 (9.1%) had a diagnosis of diabetes mellitus and hypertension.

#### **Social support among postpartum mothers**

Social support status was assessed using the Oslo-3 social support scale. Of the total study participants, the majority 137(44.5%) had moderate social support, 114(37%) had poor social support and the rest had strong social support. During pregnancy, 175(56.8%), 111(36%), and 22(7.1%) each had strong, moderate, and poor husband support. Thirty-six percent, 112 (36.4%) of study participants had no practical support from family members during pregnancy (such as king koo, washing, cleaning or child-rearing), and during the puerperium.

#### **Prevalence of Baby Blues Syndrome and its related factors**

According to the Edinburgh Postnatal Depression Scale (EDPS), study participants who scored 13 were considered such as postpartum depression. Therefore, the prevalence of Baby Blues Syndrome among mothers who had postnatal care follow-up was 15.6% [95% CI = 11.7, 19.8].

Binary logistic regression was performed to assess the relationship of each independent variable with the outcome variable (postpartum depression). Variables indicating a level of significance ( $p < 0.05$ ) during bivariate analysis were added to the multivariate regression model. Twenty-two independent variables were shown to be significantly related during the bivariate analysis. The results of the multivariate analysis showed that only four variables were statistically significant. Being a widow / widower, having a child who is currently hospitalized, after the death of a family or close relative, having poor social support shows a significant relationship with postpartum depression.

The results showed that widowed/widowed women had a relationship with postpartum depression; and four times more likely to have Baby Blues Syndrome than those who were married [AOR = 4.17, 95% CI = 1.14, 15.20]. In addition, respondents who had poor social support were five times more likely to be depressed than those with strong social support [AOR = 5.11, 95% CI = 1.00, 26.18]. Respondents who had children in the current hospital were nearly 3 times more likely to be depressed than respondents who did not have children who were currently hospitalized [AOR = 3.32, 95% CI = 1.39, 7.93]. In the same dimension, participants who had experienced the death of a family member or close relative in the last 6 months were three times more likely to have depression than those who had not experienced it [AOR = 2.92, 95% CI = 1.01, 8.50] , (Table

## **4. DISCUSSION**

#### **Prevalence of postpartum depression**

There were 613 mothers who gave birth and attended postpartum care and vaccination services during the study period. Among them, 308 mothers were included in this study using a systematic random sampling technique ( $k = 2$ ), which is a 100% response rate. The overall prevalence of postpartum depression was 15.6% (95% CI = 11.7, 19.8). This is similar to other studies conducted in Delhi and adjacent states in northern India, 15.8% [18], Egypt, 17.9% [19], and Uganda, 16.3% [20].



Prevalence rates were higher in our study when compared to Canada, Denmark, and Uganda (Kampala), and the Egyptian study were 1.6, 5.5 and 6.1%, 7.14%, respectively [21-24]. The higher rate may be due to the use of different measurement tools, assessment period, level of social support and economic status of the mothers.

On the other hand, this figure is lower when compared to other similar studies conducted in Lebanon, 21% [25], Cameroon, 23.4% [26], Nigeria, 23% [27]. The lower prevalence rates in our study might be due to differences in residency, and differences in sample sizes. For example, the study in Lebanon was conducted in a rural area using a follow-up study with a sample size of 396 mothers. In addition, the study conducted in Cameroon used a case-control study design while our study used a cross-sectional study design. A similar study in Indonesia revealed that 22.1% [28], 22.4% [29], 31.5% [30], mothers experienced depression during the puerperium. These studies have a higher prevalence rate than our study. The reported higher prevalence in this study may be due to the screening tool, study design, and sample size. The study conducted in the Oromia region used a self-reporting questionnaire (SRQ) and a community-based cross-section study.

Factors associated with Baby Blues Syndrome Among sociodemographic factors, study subjects who were widowed/widowed had an association with postpartum depression: almost four times higher than those who were married. In this group, the association agrees with research conducted in Indonesia [31]. The agreement may be due to the fact that marriage is important for mental health; especially during the postpartum period.

In the dimension of social support, respondents who have poor social support are more likely to experience depression than those who have strong social support. The association in estimation is in line with studies conducted in Malaysia and Pakistan [32], Cameroon; Yaoundé [26] and Hiwot Fana University Hospital in Indonesia [10]. In fact, having poor social support is one of the highest contributors to poor mental health [33].

The variable that was found to have an association with the Baby Blues Syndrome was having a child who was hospitalized during the postpartum period. Respondents who have children who are currently hospitalized are almost three times more likely to be depressed than respondents who do not have children who are currently hospitalized. In the same dimensions, participants who had experienced the death of a family member or close relative in the past 6 months were three times more likely to experience Baby Blues Syndrome than those who had not experienced the death of a family member or close relative. The association agrees with the research conducted in the city of Robe ; Bale Zone, Indonesia [30]. A possible reason may be due to the fact that experiencing life-threatening events during the postpartum period becomes intolerable and can affect the mental health of the mothers.

### **Limitations**

Postpartum women with persistent depression that was acquired before/during pregnancy were not excluded and this could further increase the prevalence rate of postpartum depression. This study only involved mothers who had postnatal care follow-up in urban areas. Because we recruited several data collectors, there may be interviewer bias.

### **5. CONCLUSION**

Despite a significant proportion of postpartum mothers experiencing depression, the prevalence of Baby Blues Syndrome is lower than most studies in various fields. Major life events and trauma are associated with an increased risk of postpartum depression. Health professionals should be aware of the state of the mother during pregnancy. They should initiate support to reduce the risk of depression in the postpartum period. Health care professionals working in maternal and child health clinics should pay special attention to pregnant women who are widowed/widowed, have poor social support, have children who are currently hospitalized, and have experienced the death of a family member or close relative.

### **Recommendations**

It would be recommended that midwife professionals routinely screen for symptoms of Baby Blues Syndrome and link them to mental health services such as other reproductive health problems for mothers who attend hospitals and health centers after delivery.

### **Ethical approval and consent to participate**

Palembang Poltekkes Ethical Permit No. 1273/KEPK/Adm2/III/2021. March 1, 2021

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