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Screening for Postpartum Depression: A Descriptive Study of Risk Factors Among Postpartum Mothers in Malang

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ABSTRACT Postpartum depression (PPD) is a psychological disorder that occurs during the postpartum period. PPD significantly impacts both mother and child, with risk factors including age, parity, the interval between pregnancies, and education level. PPD can lead to chronic depression, affecting maternal care, breastfeeding, and potentially resulting in neglect or abuse of the infant. It also increases suicide risk and can negatively influence the child's future development. The incidence of postpartum depression in Indonesia is between 50-70%. The development of the baby and the mother's social life can be severely affected by postpartum depression. Screening is necessary to anticipate the incidence of postpartum depression. The design of this study was a quantitative descriptive with a cross-sectional approach. The population of 38 people used the total sampling technique so that the total sample was 38 people. The research instrument used a general data questionnaire and EPDS. The results of the study showed that postpartum mothers who experienced a risk of postpartum depression were 21.1%. Based on the characteristics, namely mothers aged 20-35 years (18.4%), primiparous (13.2%), spacing of children <2 years (8.7%), mothers who do not work (15.8%), and mothers with senior high school education (15.8%). Therefore, early screening for postpartum depression is essential to address these issues effectively and support maternal and child health.

INDEX TERMS Characteristics of Postpartum Women; Postpartum Depression; Edinburgh Postnatal Depression Scale.

I. INTRODUCTION

The postpartum period is a time of physical and psychological change for women after childbirth. A mother must adapt to lifestyle changes related to pregnancy, childbirth, and the postpartum period because of the complex physical and emotional changes. Postpartum is a period characterized by a heavy burden on the mother, especially interference in affective abilities. However, in 10-15% of mothers who experience further symptoms and worsen are diagnosed with postpartum depression [39]. Postpartum depression is moderate to severe depression in a woman after giving birth. It can occur immediately after childbirth or up to a year later. Most occur within the first 3 months after childbirth [5]. Postpartum depression has an

immediate impact on the mother and poses a long-term risk to the mother's mental health. It is also detrimental to the physical, social, and cognitive development of the child. Postpartum depressive disorder tends to cause depressed mood, loss of interest or pleasure in activities, appetite disorders, sleep disorders, physical agitation or psychomotor slowing, weakness, feeling useless, difficulty concentrating, and even suicidal ideation.

The incidence of depression based on data from the World Health Organization (WHO) shows that about 13% of women who have just given birth experiencing depression. Postpartum depression in developing countries is 19.8% [21]. The incidence of postpartum depression in Asia is between 26-85%, while in Indonesia the incidence

of postpartum depression is between 50-70%, such as DKI Jakarta, DI Yogyakarta, and Surabaya, the prevalence of postpartum depression (PPD) has been reported to range from 11% to 30% in East Java it reaches 6.8% [12]. In Malang, there is still no system for recording the incidence of postpartum depression. From the postpartum depression screening survey [11] on 57 respondents in the Independent Midwife Practice (PMB) S in Malang, it was found that 23% experienced postpartum depression.

The causes of postpartum depression are complex and remain unclear. Postpartum hormonal changes are thought to be associated with depressive symptoms and biological factors that can explain the occurrence of postpartum depression [26]. Some of the risk factors associated with postpartum depression include hormonal changes, age, parity, lack of husband/family support, low level of education, type of labor, employment, and child spacing, lack of information and assistance [6].

A study shows that primiparous mothers or first-time mothers are more likely to experience postpartum depression. This happens because primiparous mothers are psychologically unprepared to face the birth of a baby greater than multiparous mothers [31]. The risk factors for postpartum depression is the job of mother [21]. The situation of mothers who have to return to work after giving birth can trigger the onset of depression.

Age is a risk factor for postpartum depression due to the fact that young mothers are typically unprepared for changing roles [3]. However, due to fatigue and anatomical conditions not conducive to pregnancy and childbirth, old age can also be a risk factor. Maternal education level is a risk factor for depression. The higher the mother's education, the better her knowledge because there will be a lot of information obtained. Parity is also associated with the risk of postpartum depression [2].

Postpartum depression (PPD) is influenced by a range of psychological and psychosocial factors. Psychological changes in the postpartum period are often attributed to hormonal fluctuations occurring after childbirth. Elevated stress levels, insufficient social support, a history of or current exposure to violence, and dissatisfaction with one's partner are common contributors to PPD. Among these, the two most significant risk factors are a history of prenatal depression and current experiences of violence. These factors underscore the multifaceted nature of PPD and the need for comprehensive approaches to prevention and intervention [37].

The efforts made by the government through mental health activities related to family health programs include mental health checks on pregnant women in ANC (Antenatal Care) activities and detection of the possibility of postpartum women experiencing baby blues syndrome or postpartum depression in postpartum visits [20]. To effectively manage postpartum anxiety, it is essential to implement preventive measures through early identification of symptoms. This can be achieved by conducting regular screenings to detect early signs and symptoms of postpartum anxiety. The American College of Obstetricians

and Gynecologists (ACOG) recommends screening patient for depression and anxiety symptoms at least once during the perinatal period using standardized and validated tools. The Edinburgh Postnatal Depression Scale (EPDS) has been the most widely used postpartum depression assessment tool [1]. The Edinburgh Postnatal Depression Scale (EPDS) is widely used globally for the detection of postpartum depression. It demonstrates a sensitivity of 80% and a specificity of 84.4%, making it a reliable tool for identifying individuals at risk of postpartum depression.

While some postpartum mothers successfully adapt to their new circumstances, others face challenges and develop psychological disturbances. Identifying risk factors associated with postpartum depression is essential for reducing its prevalence. By understanding these risk factors, targeted interventions and preventive strategies can be developed to support those at higher risk, thereby mitigating the incidence of postpartum depression and enhancing overall maternal well-being.

II. RESEARCH METHODOLOGY

The type of research used in this study is descriptive quantitative with a cross-sectional approach. It is an observational research that analyzes data collected at a single point in time across a defined sample population. This design allows for the assessment of prevalence and associations between variables but does not provide insights into causal relationships or changes over time. This research was conducted in Blimbing, Malang from May to June 2023. The population in this study were all seventh-day postpartum and following the inclusion criteria as many as 38 people. Inclusion criteria: 1) Mothers who go through a normal labor and give birth to a live baby, 2) Mothers with no family history of depression during pregnancy and postpartum, and 3) Mothers with no family history of depression. Exclusion criteria: 1) mothers with a history of depression during previous pregnancies and postpartum periods, and 2) mothers with a family history of depression. The sampling technique used a total sampling of 38 respondents. Some potential respondents were excluded from the study because they returned to their hometowns outside the city, and others declined to participate in the research.

There is only one variable or a single variable, namely the description of the characteristics of postpartum women with postpartum depression screening results. The research instrument used is the Edinburgh Postnatal Depression Scale (EPDS), adapted from Gondo (2010). This self-report questionnaire consists of 10 items, where respondents are asked to evaluate their feelings over the past 7 days. Each question has four response options, scored from 0 to 3, resulting in a total score range of 0 to 30. Scoring is as follows: for questions 1, 2, and 4, scores are assigned in ascending order (0, 1, 2, 3) based on the response options. For questions 3 and 5 through 10, scores are assigned in descending order (3, 2, 1, 0). Special attention should be paid to the responses to question 10 during scoring [10].

Prior to participation, informed consent was obtained from potential respondents, ensuring that they agreed to take part in the study. They were informed that their participation was voluntary and that all personal information would be kept confidential and not disclosed. Data analysis in this study utilized univariate analysis, specifically descriptive statistics, conducted using SPSS. This analysis aimed to identify the characteristics of mothers based on the results of postpartum depression screening. This research has received a recommendation from the Ethics Committee of Poltekkes Kemenkes Malang on 26th June 2023 with reference number No.587/VI/KEPK POLKESMA/2023.

III. RESULT

Table 1

Table 1 Frequency Distribution of Postpartum Characteristics

Characteristics of Respondents	Frequency (f)	Percentage (%)
Age		
< 20 years	1	2,6
20 – 35 years	32	84,2
> 35 years old	5	13,2
Sum	38	100
Parity		
Primipara	15	39,5
Multiparous	23	60,5
Sum	38	100
Child Spacing		
< 2 years	6	26,1
≥ 2 years	17	73,9
Sum	23	100
Work		
Work	12	31,6
Not working	26	68,4
Sum	38	100
Education		
JHS	2	5,3
SHS	26	68,4
College	10	26,3
Sum	38	100
Lactation		
Breastfeed	38	100
Sum	38	100

Source: Researcher's Primary Data, 2023

Table 1 shows characteristics based on age almost entirely have an age range of 20 – 35 years as many as 32 respondents (84.2%). Based on parity, most respondents were multiparous, as many as 23 respondents (60.5%). Based on child spacing, most of the respondents had a child spacing ≥ 2 years as many as 17 respondents (73.9%).

Based on employment, most of the respondents did not work as many as 26 respondents (68.4%). Based on education, most of them had high school education as many as 26 respondents (68.4%). Based on lactation, all respondents breastfed as many as 38 respondents (100%).

Table 2

Table 2 Frequency Distribution of Postpartum Depression Screening Results

Postpartum Depression Screening Results	Frequency (f)	Percentage (%)
No Risk of Depression	30	78,9
Risk of Depression	8	21,1
Sum	38	100

Source: Researcher's Primary Data, 2023

Table 2 shows that the results of postpartum depression screening in postpartum women on day seven were almost entirely not at risk of postpartum depression, namely as many as 30 respondents (78.9%).

Table 3

Table 3 Frequency Distribution of Maternal Characteristics with Postpartum Depression Screening Results

Characteristics of Respondents	Postpartum Depression Screening Results				Total	
	No Risk of Depression		Risk of Depression		f	%
	f	%	f	%	f	%
Age						
< 20 years	0	0,0	1	2,6	1	2,6
20-35 years	25	65,8	7	18,4	32	84,2
> 35 years old	5	13,2	0	0,0	5	13,2
Sum	30	78,9	8	21,1	38	100
Parity						
Primipara	10	26,3	5	13,2	15	39,5
Multiparous	20	52,6	3	7,9	23	60,5
Sum	30	78,9	8	21,1	38	100
Child spacing						
< 2 years	4	17,4	2	8,7	6	26,1
≥ 2 years	16	69,6	1	4,3	17	73,9
Sum	20	87,0	3	13,0	23	100
Work						
Work	10	26,3	2	5,3	12	31,6
Not working	20	52,6	6	15,8	26	68,4
Sum	30	78,9	8	21,1	38	100
Education						
JHS	1	2,6	1	2,6	2	5,3
SHS	20	52,5	6	15,8	26	68,4
College	9	23,7	1	2,6	10	26,3
Sum	30	78,9	8	21,1	38	100
Lactation						
Breastfeed	30	78,9	8	21,1	38	100
Sum	30	78,9	8	21,1	38	100

Source: Researcher's Primary Data, 2023

Table 3 shows the characteristics of mothers with postpartum depression screening results on day seven puerperium based on age who are at risk of postpartum depression in the 20 – 35 years age group as many as 7 respondents (18.4%). Based on parity at risk of postpartum depression in primiparous as many as 5 respondents (13.2%). Based on the distance of children at risk of postpartum depression with a child's distance < 2 years as many as 2 respondents (8.7%). Based on employment, 6 respondents (15.8%) were at risk of postpartum depression in mothers who did not work. Based on education at risk of postpartum depression at the high school education level as many as 6 respondents (15.8%). Based on lactation at risk of postpartum depression, breastfeeding mothers were 8 respondents (21.1%).

This study has several limitations. Some potential respondents were excluded because they returned to their hometowns outside the city, and others declined to participate. Additionally, the study did not further explore hypotheses regarding the relationship between specific maternal characteristics and the risk of postpartum depression. It solely provided a descriptive analysis without examining the connections between sub-variables. Therefore, further inferential research is needed to address these aspects.

IV. DISCUSSION

A. AGE

The results showed that the characteristics of mothers regarding age were 18.4% who were at risk of postpartum depression, mostly aged 20-35 years. However, based on the results of the study one mother was < 20 years old and at risk of postpartum depression so from one mother aged < 20 years, which means 100% risk of postpartum depression. The age range > 20 years is a mature age in terms of psychology, the difference in psychological age is very dependent on continuous self-processing in other words, people who continue to learn not only from the good things done but also from failure will experience psychological maturity [7].

Mother maturity level is not based on the person's age, but on various influencing factors, such as mindset, experience gained, and others [14]. In addition, a mother's mental readiness for her new role as a mother will be more closely related to the period of pregnancy and childbirthing. This research [31] the younger the mother's age, the higher risk postpartum depressive disorder. This is because young mothers are often unprepared for changes in their role as mothers in terms of physical, mental, financial and social

readiness. Not only young age but old age can also be a risk factor due to fatigue factors and anatomical conditions that are no longer good for pregnancy and childbirthing.

Although 20-35 years is a mature age in terms of psychology, most mothers who are at risk of depression are mothers who have only had 1 child so they are inexperienced in caring for their babies so they need to adjust to their new role as mothers and are also not mentally ready, psychological maturity is not based on age various factors influence, such as mindset and experience.

B. PARITY

The outcomes showed that 13.2% of the characteristics based on parity at risk of postpartum depression were primiparous. The incidence of postpartum depression is higher in primiparous mothers, this is related to the level of readiness of mothers who give birth for the first time and experience role changes due to the process of adapting to their new role as a mother who has no experience in caring for babies. According [39], primiparous mothers tend to be in the process of adapting to their new conditions and have no experience in caring for babies. Stated that parity is a risk factor for postpartum depression [3]. While, [24] shows that parity is not a predictor for the postpartum depression. So, both primiparous and multiparous have the potential for postpartum depression.

Primiparous mothers are generally at risk of postpartum depression because after giving birth the mother needs adaptation both physically and psychologically. Primiparous mothers usually feel worried about the changes that occur in their body, find it difficult to adjust themselves in taking care of the baby, do not understand the baby and are inexperienced in baby care, causing the mother to be at risk of postpartum depression.

C. CHILD SPACING

The results showed that 8.7% of the characteristics based on the distance of children at risk of postpartum depression were those who had children < 2 years apart. The opinion conveyed by Novianti (2022) in some mothers who have children at too close can trigger psychological disorders. This is related to the basic needs of the previous child who still requires attention from parents plus the birth of the next child who is too close will seize even more attention from parents, the birth spacing of less than 2 years also has a greater risk of depression because mothers need space to prepare themselves physically and psychologically to undergo this such as giving additional burdens to the mothers, Who must divide time and energy to take care of her children and herself.

Mothers who have children who are too close will feel burdened by the presence of a new child who requires

more maternal attention so that the mother's focus is divided between caring for her two children, especially mothers who have no one to help in the caring of their babies, then the mothers will feel anxious about her situation and her baby so that the mother is at risk of postpartum depression.

D. MOTHERS JOB

The results showed that mothers who did not work were 15.8% at risk for postpartum depression in terms of employment characteristics. In addition, [22] which states that postpartum mothers tend to experience depression, allegedly not caused by work where mothers only have junior and high school education so they do not have other jobs that can increase family financial resources. This does not follow the opinion conveyed by [11] that working mothers have a dual role which causes their attention to be divided between caring for the baby and work that must be done outside the home. Although working mothers will have time off at the beginning of the postpartum period, this only increases the worry of mothers who cannot take care of children at home longer and must immediately prepare as early as possible who will take care of children when their mother returns to work.

Most mothers are housewives who do not work, the duties of housewives do not have an economic exchange value, therefore the task is considered low so that they feel less valuable and mothers feels a burden to the husband in terms of financial husband uncertain income, increasing daily needs coupled with the presence of new members that require a lot of money can trigger the risk of postpartum depression, besides that it can also be influenced by other factors.

E. EDUCATION

The results showed that 15.8% of the characteristics of education, mothers who were at risk of postpartum depression were most at the high school level. Although the highest number of high school education, out of 2 mothers who have a junior high school education, 1 of them is 50% at risk of postpartum depression, it can be concluded that the lower the mother's education, the more at risk of postpartum depression. Mothers with low education feel unable to care for their children, due to limited information. This is to the opinion conveyed by [31] that low education is related to the incidence of postpartum depression because there is a tendency for those with low education, marriage occurs at a young age, potentially have higher parity and limited access to information so that it becomes a risk factor for postpartum depression. The same research was

conducted by [22] which states that of the 7 postpartum mothers who experienced postpartum depression, 6 of them had high school education. The higher the mother's education, the lower the risk of experiencing postpartum depression [32]. Educational level affects the effectiveness of coping strategies. More educated people will be more realistic and active in solving problems compared to less educated people. The ability to adapt is expected to improve with higher education.

A person's education is closely related to the knowledge possessed, highly educated mothers have a small risk of postpartum depression because highly educated mothers have good coping strategies in choosing and making more appropriate decisions. In addition, highly educated mothers will easily receive information from both others and the mass media. In this study, there was a tendency for those with junior and senior high school education to be at risk of postpartum depression.

F. LACTATION

The results showed 100% of breastfeeding mothers but as many as 21.1% were at risk of postpartum depression. Skin-to-skin contact between mother and baby for six hours a day in the first week followed by two hours the following month decreased the occurrence of depression [15]. This skin contact can increase the hormone oxytocin which can increase relaxation. This can also make the baby calmer, sleep longer and cry less so that the mother is more confident in caring for her baby.

Oxytocin is also known as the love hormone, so breastfeeding can make mothers happy and prevent depression. [29] showed that of 150 postpartum mothers measured in the first month and sixth month of the puerperium period, the results of the EPDS scores were greater in mothers who did not breastfeed than mothers who breastfed. However, oxytocin levels of each breastfeeding mother are different, depending on how hormones respond to each other, so if the oxytocin levels are low, it is possible that breastfeeding mothers can still experience postpartum depression [23].

Higher prolactin/oxytocin secretion and lower vasopressin secretion in breastfeeding mothers might safeguard against postpartum depression and anxiety, irritability and enhance pressure reaction [17]. This is also supported by the conclusion of a longitudinal study conducted [14] which states that postpartum women who experienced postpartum depression, after being given exclusive breastfeeding therapy for 3 months, show reduced symptoms and levels of depression at 3-6 months postpartum.

Breastfeeding mothers will form a bonding attachment between mother and baby and will also stimulate the release of the hormone oxytocin, which is a happiness hormone that can reduce the risk of postpartum depression, maternal oxytocin hormone levels vary, so if the oxytocin hormone levels are low it does not rule out the risk of postpartum depression. In this study all breastfeeding.

G. Postpartum Depression Screening Results

The results of postpartum depression screening using the EPDS questionnaire almost all seventh-day postpartum mothers are not at risk of postpartum depression as much as 78.9% and a small proportion of 21.1% are at risk of postpartum depression. The results showed that mothers who were not at risk for postpartum depression did not show any signs of depression. On the other hand, mothers who were at risk for postpartum depression typically showed signs of depression and anxiety like self-blame, sadness, anxiety, fear, insomnia, and frequent crying.

Results of postpartum depression screening using the EPDS questionnaire [10] identified EPDS as a tool for detecting postpartum depression with a simple assessment method, this tool has satisfactory sensitivity and specificity and is also sensitive to changes in depression over time, the use of EPDS can also be used on seventh day postpartum, reinforced by [19] about biological factors that occur in depressed postpartum mothers. Norepinephrine and serotonin are the two neurotransmitters that play the most role in the pathophysiology of mood disorders. The temporal response to changes these receptors in animal trials correlated with a one to three-week delay in clinical improvement that is usually found in patients. Besides norepinephrine, serotonin, and dopamine evidence points to acetyl-choline dysregulation in mood disorders. Decreased serotonin can trigger depression and some suicidal patients have low cerebrospinal fluid concentrations of serotonin metabolites and serotonin uptake site concentrations. Due to the role of these two neurotransmitters, depression in postpartum mothers can be detected as early as the seventh day postpartum.

Most postpartum mothers at PMB S are not at risk of postpartum depression, but it does not rule out the risk of postpartum depression is a psychological disorder that appears after several weeks postpartum, usually experienced more or less in the period of 2 to 4 weeks and can last even 1 – 2 years [1]. The results of this screening can be the basis that every postpartum mother needs early detection to find new cases or prevent more severe conditions. Although the risk of postpartum depression is small, postpartum depression can harm the mental health of the mother and the development of the child future. So,

screening for postpartum depression needs to be pursued so that the coverage of early detection of postpartum depression increases.

This study provides benefits for postpartum mothers by helping to prevent postpartum depression. However, it does not explore additional risk factors, such as social support and sleep disturbances post-delivery, [40] identifies as significant risks according to respondent conditions. Nonetheless, the depression screening conducted in this study has been validated by two researchers.

V. CONCLUSION

The characteristics of the mothers in the study are as follows: nearly all are aged between 20 and 35 years. In terms of parity, the majority are multiparous. Almost half have a child spacing of 2 years or more. Most respondents are not employed and have completed high school education. Additionally, all respondents are breastfeeding. The results of the postpartum depression screening indicate that nearly all respondents are not at risk for postpartum depression.

Characteristics of mothers with postpartum depression screening results in postpartum mothers on day seven based on age most of those at risk of postpartum depression are in the age range of 20-35 years, based on parity most of those at risk of postpartum depression are primiparous, based on child spacing most of those at risk of postpartum depression with child spacing < 2 years, based on employment most mothers who do not work are at risk of postpartum depression, based on education most of those at risk of postpartum depression at the junior and senior high school education levels and based on lactation most of those at risk of postpartum depression because they are entirely breastfeeding.

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