



Analysis Factors Affecting Postpartum Depression in Postpartum Mothers During the COVID-19 Pandemic



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EPDS;
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postpartum depression;
risk factors;
social support;

Abstract

This study aims to analyze the factors associated with postpartum depression during the COVID-19 pandemic. The first general reactions of parents who have children with mental retardation are shock, fear, sadness, disappointment, guilt, rejection, or anger. These conditions have the potential to cause psychological problems that can lead to depression. There are many factors affecting depression in mothers who have children with mental retardation. This study used an analytical method with a cross-sectional design. The sample involved 247 respondents determined using an accidental sampling technique. Data were analyzed using univariate analysis and bivariate analysis with a significant value of <0.05 . Postpartum mothers who experienced depression were 143 people (57.89). Variables that showed a relationship to postpartum depression were age with a p-value of 0.000 and social support with a p-value of 0.002. Both variables were declared significant because the p-value is lower than 0.05. Social support is the most dominant risk factor contributing to the incidence of postpartum depression. Important to take preventive measures by involving husbands and families in providing information about maternal child health and anticipating the early detection of postpartum blues postpartum depression with the quality of extracting patient information (anamnesis) to reduce the incidence of postpartum depression.

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1 Introduction

Maternal and infant health is the priority of development in the health sector in Indonesia. One of the factors of maternal health can be seen in reproductive health (Rahmadhani, 2021). Each woman looks forward to giving birth as the community perceives that a perfect woman is a woman who has given birth (Anderson et al., 2017). Childbirth is an important event because it makes a woman a fully functioning woman in life (Oladeji et al., 2019). Being a parent is a crisis for women because they have to pass a transition period. Psychologically, a woman will feel psychiatric signs and symptoms after giving birth (Wulan Rahmadhani, 2020). A postpartum woman needs adjustments in dealing with her new activities and roles as a mother both physically and psychologically in the first weeks of childbirth. Some postpartum women manage to adjust well, but others who do not manage to adjust experience psychological disorders which are known as Postpartum Depression (PPD) (Rahmadhani, 2020).

The incidence of PPD is quite high as indicated by the PPD prevalence in Pakistan which reaches 22.3% (Feinberg et al., 2021). The prevalence of DPP in Greece is 13.6% (Knol et al., 2012). Particularly in Klaten District, 30% experienced mild DPP and 6.7% experienced moderate PPD (Lisonkova et al., 2016). In Surakarta, 52% of respondents experienced postpartum depression (Ria et al., 2018). The common PPD symptoms are feelings of sadness, crying, irritability, anxiety, difficulty concentrating, unstable emotions, sleep and appetite disturbances, even suicidal thoughts, paranoid delusions, and threats of violence against the baby (Robertson et al., 2004). Some studies in Indonesia have focused on this issue. One of the studies was conducted in Pekanbaru City, Riau Province showing that 16.7% of postpartum mothers had PPD (Misrawati et al., 2014). Another study by Desfanita et al., 2015 showed that most mothers experienced PPD with a total of 40 respondents (53.3%) (Gunst et al., 2021).

Estrogen and thyroid hormone levels drop drastically 24 hours after childbirth (Pradhananga et al., 2020). This hormonal balance disorder causes symptoms of crying, experiencing changes in feelings, anxiety, worrying about the baby, loneliness, and lack of confidence in being a mother (Kusumastuti et al., 2021). Factors causing maternal depressive symptoms are biological factors, characteristics, and background of the mother. Levels of estrogen (estradiol and estriol), progesterone, prolactin, and cortisol which increase and decrease too quickly or too slowly are biological factors causing postpartum depression (Woldeyohannes et al., 2021). Other factors affecting maternal depressive symptoms in some other students are interpersonal variables (neural disorders, poor life experiences), social variables (marital dissatisfaction, lack of social support, economic status), and clinical variables related to pregnancy (risk of current pregnancy, problems in previous pregnancies) (Dira & Wahyuni, 2016). A literature study by Beck (2002), found that the aetiology of postpartum depression was inconsistent and doubtful (Kementrian Kesehatan RI, 2018).

Coronavirus disease (COVID-19) is caused by Coronavirus 2 (SARS-CoV-2), a severe acute and dangerous respiratory syndrome that spreads quickly (WHO, 2020). It was first reported in Wuhan City, Hubei province, China. Then, it spread rapidly and was declared a pandemic by the World Health Organization (WHO) (World Health Organization, 2020). In Indonesia, maternal and neonatal mortality is still a big issue and needs attention during the COVID-19 pandemic (Kemenkes RI, 2021). Based on data from the COVID-19 handling task force, as of September 14, 2020, there were 4.9% of pregnant women were confirmed positive for COVID-19 from 1,483 confirmed cases (Kemenkes RI, 2021). It indicates that pregnant women, childbirth, postpartum, and newborns are also vulnerable to COVID-19 and this condition is feared to increase maternal and newborn morbidity and mortality (Ramadhani et al., 2020). Almost all health services are affected by the COVID-19 pandemic, including maternal, neonatal, and maternal and child health services, both in terms of access and quality so pregnant women are reluctant to go to Puskesmas due to fear of being infected, the recommendation for postponing pregnancy check-ups and classes for pregnant women (Kemenkes, 2020).

In Indonesia, the number of incidents is not widely known, considering that no relevant institutions are researching this case. [Suryasa et al. \(2021\)](#), reported that the incidence of PPD in Indonesia was between 50-70%. Unconsciously, this condition starts to show a fairly large percentage. Therefore, it is important to do research related to PPD.

2 Materials and Methods

This research used an analytical observation method with a cross-sectional design. The study was conducted in the working area of Puskesmas Kebumen from March to June 2022. The population of this study was all postpartum mothers who live in the working area of Puskesmas Kebumen. The determination of the sample used the accidental sampling technique with a total of 247 respondents. The study used primary data taken directly from respondents using a questionnaire from the Edinburgh Postpartum Depression Scale (EPDS). The questionnaire consisted of 10 questions about the respondent's feelings in the past week. Each question was analyzed using univariate analysis which describes the percentage and using bivariate analysis

3 Results and Discussions

3.1 Result

Table 1 showed that most respondents aged <20 years (37.25%), primiparous (158 respondents or 63.97%), highly educated (56 respondents or 63.16%), lacked social support (139 respondents or 56.28%), and experienced signs of depression (143 respondents or 57.89%).

Table 1
Characteristics of respondents

Variable	N	%
Age		
<20 years old	92	37.25
20-35 years old	87	35.22
>35 years old	68	27.53
Parity		
Primipara	158	63.97
Multipara	89	36.03
Education		
Low	91	36.84
High	156	63.16
Social support		
Low	139	56.28
Good	108	43.72
Depression		
Yes	143	57.89
No	104	42.11

Based on Table 2, the p-value for the age variable (0.000) and the social support variable (0.002) was significantly related because the p-value was lower than 0.05.

Table 2
Analysis of factors associated with postpartum depression

Variable	PPD				Total		p-value
	Yes		No		n	%	
	n	%	n	%			
Age							
<20 years old	52	56.52	40	43.48	92	100	0.000
20-35 years old	41	47.13	46	52.87	87	100	
>35 years old	39	57.35	29	42.65	68	100	
Parity							
Primipara	94	59.49	64	40.51	158	100	1.000
Multipara	35	39.33	54	60.67	89	100	
Education							
Low	55	60.44	36	39.56	91	100	0.138
High	63	40.38	93	56.62	156	100	
Social support							
Low	101	72.66	38	27.34	139	100	0.002
Good	49	45.37	59	54.63	108	100	

3.2 Discussion

Factors causing postpartum depression cover biological factors, characteristics, and background of the mother (Puspasari & Fanani, 2020). Levels of estrogen (estradiol and estriol), progesterone, prolactin, and cortisol which increase and decrease too quickly or too slowly are biological factors causing PPD (Karl et al., 2020). The more decline in estrogen and progesterone levels after delivery, the higher the tendency for a woman to experience depression in the first 10 days after childbirth (Achyar & Margiana, 2018).

The estrogen and progesterone have the effect of suppressing the activity of the monoamine oxidase enzyme, an enzyme that works to inactivate both adrenaline and serotonin, which play a role in mood and depression (Chaisawan et al., 2011). Estradiol and estriol are active forms of estrogen formed by the placenta. Estradiol functions to strengthen the function of neurotransmitters by increasing the synthesis and reducing the breakdown of serotonin so that theoretically the decrease in estradiol levels due to childbirth plays a role in causing PPD. Biological factors are difficult and rarely measured in terms of maternal depressive symptoms (Solehati et al., 2020).

Other factors affecting maternal depressive symptoms as described in some studies covered interpersonal variables (neural disorders, poor life experiences), social variables (marital dissatisfaction, lack of social support), and clinical variables related to pregnancy (risk in current pregnancy, problems in previous pregnancies) (Phipps et al., 2013). A study by Beck (2002) found that the aetiology of postpartum depression was inconsistent and doubtful. Some other studies focused on some demographic variables related to the incidence of postpartum depression, namely age, marital status, parity, education level, and socioeconomic status (Diniyah, 2017). The studies revealed that the relationship between these demographic factors and postpartum depression was very weak, but a review of demographic factors as a risk for postpartum depression in Asia showed a strong relationship (Hanifah, 2017; Goncharuk et al., 2022). Economic factors, local traditions, and the gender of the baby were the main risk factors (Bloch et al., 2005; Klainin & Arthur, 2009; Muhdi et al., 2009; O'Hara et al., 1991 cite Gondo, 2009). Based on the chi-square test, the studies showed that from the five independent variables tested, age and social support were significantly related to the incidence of postpartum depression (Angraini, 2019). The results of the analysis of the relationship between physical exercise and postpartum depression showed that the proportion of respondents who participated in physical exercise during pregnancy, either pregnancy exercise or yoga, experienced depression of 35.7%, while those who did not participate in physical exercise during pregnancy experienced postpartum depression of 88.9%. The results of statistical tests also obtained a p-value of <0.003. Therefore, it can be concluded that there is a significant relationship between physical exercise and postpartum depression (Arami et al., 2020; Gustiani et al., 2022).

This is in line with the literature that physical exercise during pregnancy, including yoga and pregnancy exercise, can reduce anxiety about childbirth and reduce postpartum depression symptoms. [Hutchens & Kearney \(2020\)](#), found that physical exercise had a relationship with the release of endorphins and blood plasma. Based on this study, physical exercise can help release feelings of joy which in turn are addictive (dependence) [\(Diniz et al., 2017\)](#). Endorphin release also depends on the form of exercise, frequency, and duration [\(Cahyaningtyas, 2019\)](#). Endorphins released through exercise play a role in the feeling of joy and are released through the peptide also reduces postpartum anxiety and depression [\(Kusuma, 2019\)](#).

Physical exercise is one of the most physiological stimuli and involves all body systems including muscular, nervous, metabolic, and hormonal systems, and is a very efficient method of controlling stress [\(Hajipoor et al., 2021\)](#). Exercise can play a role in controlling neurohormonal, autonomic, and behavioral responses to physical and psychological stress [\(Ongeri et al., 2018\)](#). Therefore, a well-done exercise has an important role in improving health, both physical and psychological health [\(Mastorakos et al., 2005\)](#), physical fitness, mood, and reducing anxiety as well as preventing depression [\(Zejnnullahu et al., 2021\)](#).

After childbirth, a mother can experience mood disorders such as disappointment, fear, no love for the baby, and guilt for having these feelings [\(An et al., 2021\)](#). These conditions of psychological disorders in the early postpartum period are categorized as symptoms of mild mental disorders that are often ignored by postpartum mothers. These conditions trigger a more severe condition. Thus, if left unchecked for a long time, these conditions can have a negative impact on both mother and baby [\(Sadock, 2007\)](#). Indeed, fear can be overcome as all fear comes from the subconscious brain. So each individual can overcome it by herself even though the motivation from the closest people also plays an important role [\(Abdillah & Putri, 2016\)](#).

The results of the analysis of the relationship between social support and postpartum depression showed that the proportion of respondents who had less social support experienced depression. The results of statistical tests obtained a p-value of <0.05 . Thus, it can be concluded that there is a significant relationship between physical exercise and postpartum depression [\(Almeida et al., 2020\)](#). This is in line with the literature that the lack of family support, especially from husbands and other close family members can trigger postpartum depression [\(Rosenthal & Henderson, 2003; Wolwan, 1993 cit Hutagaol, 2010\)](#). The condition of postpartum mothers requires special attention and mothers need an adjustment process both physically and psychologically to restore themselves to normal conditions [\(Wahyuntari et al., 2019\)](#). After childbirth, a mother can experience mood disorders such as disappointment, fear, no love for the baby, and guilt for having these feelings [\(Basuki, 2019\)](#). The condition of psychological disorders in the early postpartum period is categorized as symptoms of mild mental disorders that are often ignored by postpartum mothers [\(Kinser & Masho, 2015\)](#). These conditions trigger a more severe condition. If left unchecked for a long time, these conditions can have a negative impact on both mother and baby [\(Çankaya, 2020\)](#).

Women need help and support both physically and psychologically after giving birth, especially those with the first child [\(Hung et al., 2004\)](#). Pierce (in Kail & Cavanaugh, 2000) defines social support as a source of emotional, informational, or assistance from people around individuals who are facing problems and in crisis conditions. This definition is quite similar to [Sheeba et al. \(2019\)](#), that social support is an interpersonal interaction that aims to assist someone so that the person feels a form of attention, value, and love [\(Ariyanti et al., 2016\)](#). Therefore, it can be concluded that social support is support or assistance given by the closest person to someone who is facing problems so that they feel a form of attention, are appreciated and become part of the group [\(Nyfløt et al., 2017\)](#). Another factor that is not related to the incidence of postpartum depression is education [\(Firmin et al., 2019\)](#). Studies showed that although most of the respondents have a high level of education, they can still be at risk for postpartum depression [\(Puspasari & Fanani, 2020\)](#).

[Hutagaol \(2010\)](#), revealed that mothers with higher education generally have feelings of ambivalence between their role as mothers in caring for children and their families and their desire to improve their careers so that they are more vulnerable to experiencing depression [\(Arimurti et al., 2020\)](#). The results of the study are in line with [Sangsawang et al. \(2019\)](#), that education level was not associated with the incidence of postpartum depression, but [Govender et al. \(2020\)](#), showed that the behavior of caring for infants in mothers with higher education was significantly different from the behavior of mothers with low education ($p = 0.018$). Moreover, Soep (2009) found that education had a significant effect on postpartum depression experienced by mothers with low education [\(Ariyanti et al., 2016\)](#).

4 Conclusion

Some variables that affected postpartum depression were Age and social support, but the researchers found some similar difficulties experienced by both related to all important parts of the breastfeeding and infant care process. This study recommends providing full support in caring for and providing everything that mothers need. For the next research, it is necessary to assess postpartum depression through hormones or laboratories.

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