

## Chapter 2

# EFFECTS OF POSTPARTUM DEPRESSION ON THE NEWBORN

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### INTRODUCTION

Pregnancy and childbirth is a process that affects women's lives in many ways and needs to be managed effectively. A woman is affected hormonally, physically, emotionally and psychologically throughout her pregnancy. Fundamental changes occur both in the personal world and in the family processes of the expectant mother. In the postpartum period, women may experience a variety of emotions, from joy to sadness, to laughing and crying crises. These feelings of sadness and crying are called "maternal blues" and tend to decrease within the first 2 weeks after birth (Mughal et al., 2022a). Postpartum depression (PPD) is the form of major depression seen in the postpartum period. Therefore, symptoms similar to those of major depression are observed. These symptoms include low mood, anhedonia, forgetfulness, irritability, anxiety, sleep disturbance, and decreased functionality. In addition, symptoms such as feelings of worthlessness and increased guilt are also observed in patients (Zauderer et al., 2009). According to Beck, most of the women with postpartum depression cannot be diagnosed because of the role conflict experienced by women who are mothers for the first time and because they do not want to tell their feelings to those around them (Beck, 2003). This situation clearly reveals the importance of nurses and midwives to evaluate women in the postpartum period regarding the risk of PPD. While the postpartum period is expected to represent the happiness of the family with the birth of the baby and the period when the mother reunites with her baby, it can be overshadowed by postpartum depression. Postpartum depression can occur due to many reasons. For this reason, nurses and midwives should evaluate women in terms of PPD during the postpartum period and should know the risk factors (Mughal et al., 2022a).

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The aim of this review is to evaluate postpartum depression, postpartum depression symptoms, the effects of postpartum depression on newborns and current literature on nursing care.

## **RISK FACTORS**

of the risk factors of PPD were found to be stress related. Depression and anxiety experienced during and/or before pregnancy PPD can be caused by many environmental factors, such as the inability to establish a mother-infant bond, insufficient support of the social environment, problems related to marriage, and difficult life conditions due to reasons such as family history; hospitalization of the baby. Complications during pregnancy can also cause PPD

**Psychological:** Nurses and midwives should pay attention to the presence of depression in their past history while taking anamnesis from the woman. In addition, the woman's dysmenorrhea, premenstrual syndrome or an anxious lifestyle are among the risk factors for PPD. During the evaluation, nurses and midwives should also pay attention to the woman's attitude towards her baby and her thoughts about the baby's gender.

**Obstetric risk factors:** Increase in hospitalizations due to pregnancy during pregnancy and emergency cesarean delivery are risk factors for the development of PPD. For example; having a risky pregnancy condition such as preeclampsia, gestational diabetes; meconium in the baby at birth Experiencing aspiration, premature birth, or giving birth to a low-birth -weight baby may increase the risk of PPD.

**Social factors:** Inability of the woman to receive adequate social support in the postpartum period may cause PPD. In addition, the presence of sexual, verbal or physical violence between spouses during this period may also be a factor in the development of PPD.

**Lifestyle :** Nutritional habits, sleep level, physical activities and exercise in a woman's daily life can affect postpartum depression. Vitamin B6 is linked to tryptophan and later to serotonin, which affects mood. by reducing It has been determined that it has an effect on postpartum depression. Sleep patterns are also one of the factors that affect the risk of depression. It has been determined that the woman's sleeping less than her normal sleep pattern is associated with PPD. A woman's physical activity and exercise also reduce depressive symptoms by releasing endorphins. Thus, an effective way of improving the decrease in self-esteem caused by depression is followed. In addition, increased exercise and activity im-

proves a woman's self-confidence and helps focus by increasing her problem-solving capacity (Mughal et al., 2022a; Slomian et al., 2019; Ghaedrahmati et al., 2017).

Pathogenesis of postpartum depression is not fully known; genetic, hormonal, psychological and social life stressors are thought to play a role in the development of PPD (Couto et al., 2015). It has been determined that the changes in reproductive hormones in the postpartum period affect the emotional transitions of women. PPD pathophysiology affects many systems. These systems consist of changes in multiple biological and endocrine systems, such as the immunological system, the hypothalamic-pituitary-adrenal axis (HPA), and lactogenic hormones. The HPA axis causes the release of cortisol in case of trauma and stress. If the HPA axis functions are not sufficient, the required response cannot be given. This reduces the secretion of catecholamines and leads to an inadequate stress response (Mughal et al., 2022a ; Cardaillac et al., 2016).

Estradiol and progesterone release after labor can serve as a potential source of stress in sensitive and susceptible women. The changes that occur can lead to the onset of depressive symptoms in women. Oxytocin and prolactin hormones also play an important role in the development of PPD. These hormones control and regulate the lactation reflex as well as breast milk production. It is generally observed that lactate deficiency and PPD occur at the same time. In the third trimester of pregnancy, oxytocin low blood levels are associated with an increase in depressive symptoms in the postpartum period (Cardaillac et al., 2016).

Postpartum depression to be made, at least five depressive symptoms lasting at least two weeks must be present. *In the Diagnostic and Statistical Manual of Mental Disorders (DSM-5)*, postpartum depression comes to mind if a woman has had a major depressive episode with the onset of pregnancy. The following nine symptoms are present nearly every day during this period. In addition, it is shown that there is a change that is different from the woman's pre-pregnancy routine. When diagnosing PPD, either depression or anhedonia (loss of interest) is expected in addition to the five existing symptoms (Mughal et al., 2022b).

- Mood is depressed throughout the day.
- Loss of interest in daily life
- Insomnia or hypersomnia
- in psychomotor skills
- Feelings of worthlessness and guilt
- Loss of energy and fatigue
- Suicidal ideation or attempt, recurrent thoughts of death

- concentration or unsteadiness
- Difference in weight or appetite ( 5 % weight change in 30 days)

The above-mentioned symptoms can lead to a significant problem. It should be noted that these symptoms are not caused by a drug or medical condition. postpartum depression; does not cause a psychotic disorder or episode. In the 10th Regulation of the International Statistical Classification of Diseases and Associated Health Problems (ICD-10), postpartum depression is defined as depressive symptoms occurring within 6 weeks after birth, with the onset of the postpartum period. ICD-10 defines the mentioned depressive episode as:

- The woman experiences depressive episodes and enters a depressive mood with loss of activity and energy.
- The woman's interest in daily life decreases. He has a loss of concentration on the events he has experienced. In addition to the disruption of sleep cycle and decreased appetite, the individual feels very tired. In addition, it is observed that the woman feels incomplete while caring for her baby, and her guilt, worthlessness and self-esteem decrease.
- Women can take meaningless walks even in the early hours of the morning, and may experience weight loss or loss of libido. These symptoms recur almost daily and are not affected by current conditions.
- This period of the woman's life can be categorized as mild, moderate or severe and varies according to the severity and number of symptoms.

PPD can lead to a delay in the development of the mother-infant bond, negatively affecting the breastfeeding process, negatively affecting parenting roles, and marital discord between spouses. This situation can cause negative consequences for the physiological and psychological development of not only the mother but also the child. The regression of the symptoms of postpartum depression will reduce the risk of behavioral and emotional problems in infants. During the postpartum depression evaluation process, nurses and midwives should not forget to take both the woman's own history and family history. During this evaluation, it is necessary to note the woman's past drug or alcohol use, smoking habits, and all prescription and nonprescription drugs she has used in the past. PPD screening for women can be performed 2 to 6 months after delivery. Nurses and midwives, as the health professionals who have the most contact with the mother during the postpartum period, should evaluate women in the postpartum period, identify the danger signs and take appropriate actions ( Lakkis and Makkashani , 2015).

## **EFFECTS OF POSTPARTUM DEPRESSION ON THE NEWBORN**

Postpartum depression can have consequences beyond showing physical violence to the baby. When the literature is examined, it is revealed that PPD also affects the mother-infant bond. It is often seen that inappropriate behaviors are exhibited by the mother with a negative attitude towards the newborn. This may lead to significant disruption of the baby's growth and development or to continue problematically. In the examinations made; It has been determined that there are risks for the children of untreated depressed mothers. These risks include impaired cognitive function, behavioral stagnation, emotional dissonance, physical violence, exclusion from peers, and psychiatric and medical disorders in adolescence (WHO, 2022; Pearlstein et al., 2009).

### **PHYSICAL DEVELOPMENT (WEIGHT AND HEIGHT)**

There are studies examining the physical development of babies of mothers with postpartum depression in literature. Ajslev et al. in an observational study conducted by Al (2010), which lasted for 7 years, it was determined that the children of mothers who had postpartum depression were less likely to be overweight. In another study, it was determined that these babies could gain more weight than their peers (Gaffney *et. al.* 2014). A study conducted in Pakistan shows that postpartum depression is generally associated with more diarrhea attacks in the first year of infants, and therefore infants have lower birth weights (Husain et al., 2014). In addition, postpartum depression reduces the duration of breastfeeding and may cause babies to gain less weight (Dennis and McQueen, 2013). On the other hand, there are studies showing that postpartum depression has no effect on the physiological development of infants (Adewuya et al., 2007).

### **COGNITIVE AND LANGUAGE DEVELOPMENT**

The development of communication skills during infancy is very important. During the first 4 weeks following the birth, the symptoms of postpartum depression and the response of the woman to non-verbal gestures decrease. It is thought that this situation tends to negatively affect both the psychological and physiological development of the baby ( Kawai et al., 2017 ). Liu et al. (2017) examined infants of mothers with PPD 6-8 weeks after birth. As a result of the study, it was shown that the average cognitive score and mental development were lower in the babies of mothers with PPD ( Liu et al., 2017 ).

Smith- Nielsen et al. (2016) evaluated the cognitive, language and motor development of babies in their study with 4 and 13 months old babies. In the study, it was determined that cognitive development was weaker when babies of mothers with postpartum depression were 4 months old. When the same babies were 13 months old, it was seen that there was no statistical difference between the results of the babies of mothers who were treated for postpartum depression and those of healthy mothers. The results obtained have determined that postpartum depression has effects that do not last long when the risk factors are removed ( Smith - Nielsen et al., 2016).

### **BABY NUTRITION**

Breastfeeding is known to prevent postpartum depression (Karakısla and Özdemir Cicek, 2022). Despite this, the depressed mood of the woman may cause her to exhibit inadequate care and hygiene practices towards the baby. In addition, irritability and hostility towards the child may occur in the woman when the baby is hungry or cannot absorb breast milk properly. This may play a negative role in the development of the baby ( Hassan et al. 2016 ). Breastfeeding stimulates the nervous system. It has an important function in the postpartum period due to its ability to regulate the HPA axis circadian rhythm to reduce the stress response ( Hahn-Holbrook et al. al., 2013 ). Although postpartum depression negatively affects breastfeeding, the breastfeeding process plays a role in improving depression symptoms ( Figueiredo et al., 2014 ). Hamdan and Tamim (2012) determined that the breastfeeding process improves postpartum depression symptoms up to 4 months after birth ( Hamdan and Tamim, 2012 ). In summary; Problems in the breastfeeding process, frequency and quality of milk lead to malnutrition of the baby.

### **MOTHER-BABY BOND**

In studies on mother-infant bond, it is known that there is a statistically significant and positive relationship between mother's mood and mother-infant bond ( O'Higgins et al., 2013 ). Various hormones are thought to play a role in the regulation of certain maternal behaviors ( Nemsadze and Silagava , 2010 ). Prolactin hormone affects the regulation of maternal behavior more than other hormones. In particular, it has a tremendous effect on the emergence and continuation of maternal feelings and caregiving behaviors. In addition, the increase in oxytocin in the mother's blood in the postpartum period creates a stronger sense of attach-

ment and contributes to mother-infant attachment ( Feldman et al., 2007 ;Kohlhoff et al., 2013). According to a study conducted by Behrendt et al., mother-infant attachment of mothers experiencing postpartum depression is negatively affected, the mother may develop hostility towards the baby and have difficulty in enjoying communication with the baby ( Behrendt et al., 2016 ).

### **BABY SLEEP**

PPD symptoms experienced by mothers also affect the sleep cycle of newborn babies. In the studies reviewed, it was observed that the rate of waking up at night was significantly higher in babies of mothers with postpartum depression symptoms, and the sleep patterns of these babies were more problematic. As the symptoms of postpartum depression in mothers increase, the risk of sleep disorders in infants also increases (Tavares et al., 2011; Quevedo et al., 2012; Tharner et al., 2012).

### **BEHAVIOR DEVELOPMENT**

PPD symptoms experienced by the woman in the postpartum period; It is known to have a significant effect on negative behaviors in infants. Studies have examined the children of women with PPD; It has been determined that personality traits such as an increase in 2-year-old syndrome problems, propensity to experience mood disorders, and having a more difficult character are seen more frequently. In addition, during the interpersonal communication of these children; internalization, It was determined that he had more problems in communication and symbolic behavior (Avan et al., 2010; Bagner et al., 2011). In a study examining the effect of an activity using picture books on the mother-infant bond of a woman's depressive mood, it was determined that the rate of pushing and closing the books was higher in the children of women with depressive moods ( Reissland et al ., 2009).

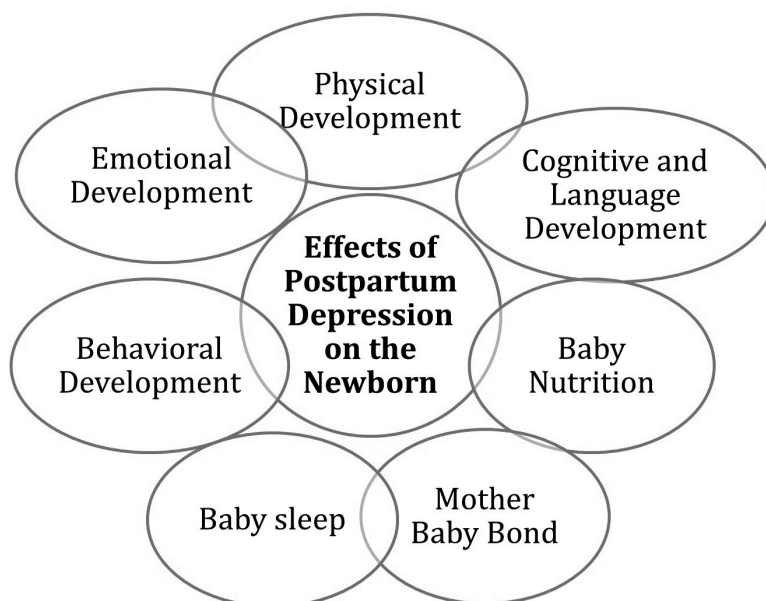


Figure 1. Effects of Postpartum Depression on the Newborn

## EMOTIONAL DEVELOPMENT

PPD has a significant impact on the emotional development of infants. There are studies indicating that babies of women with postpartum depression experience more fear and tend to experience more emotional disorders than babies of non-depressed mothers (Feldman et al., 2007; Paulson et al., 2009).

## TREATMENT AND MANAGEMENT

Primary treatment for postpartum depression is psychotherapy and antidepressant drugs. However, the treatment protocol may vary depending on the breastfeeding preference and personal history of the woman. For example; Psychotherapy is primarily used in mothers with mild and moderate postpartum depression, who do not want to use medication, and who are considering breastfeeding their baby. In women with moderate and severe postpartum depression, psychotherapy and antidepressant group drugs are used in combination in the treatment protocol. Selective serotonin reuptake inhibitors (SSRIs) are the first preferred drug group, especially in pharmacological treatment. In women for whom the SSRI is ineffective during medical treatment, the use of serotonin-norepinephrine reuptake inhibitors (SNRIs) or mirtazapine is considered. When an effective dose is



achieved in treatment, medical treatment should not be discontinued for another 6 to 12 months to prevent recurrence of postpartum depression symptoms (Beck, 2006).

Nursing care for breastfeeding women should include specific period-specific information. The training provided for this; Recommendations for medical treatment should include the benefits of breastfeeding, the risks of using antidepressant medication during breastfeeding, and the prognosis of the untreated disease together with the individual.

“Transcranial magnetic stimulation” (TMS) is a treatment option for mothers who prefer to breastfeed their baby and are afraid of the risks of medical treatment. TMS stimulates and activates nerve cells with magnetic waves. One of the important features of TMS is that it is a non-invasive treatment option. For the treatment protocol to be effective, it must be applied five times a week for 4 to 6 weeks. In general terms, although TMS is safe and well tolerated, it is a treatment that can have some side effects such as headache, confusion, scalp discomfort, and facial muscle contraction or involuntary movement in women. Seizures that occur due to this can cause hearing loss and some serious side effects such as mania can be seen in people with bipolar disorder (Milgrom, 2015).

In such a situation, ECT is recommended in patients who are resistant even after consecutive use of pharmacological treatment options. It is an effective method, especially in patients with symptoms of depression, suicidal ideation or the possibility or plan of harming their baby (Steward and Vigod, 2019). ECT is more reliable than other treatment options in that it does not affect breastfeeding and has fewer side effects on mother and baby (Robakis, 2016).

Intravenous injection in women who did not respond to the ECT protocol or whose symptoms of postpartum depression decreased. Brexanolone treatment is recommended. Brexanolone was approved by the FDA in March 2019. Brexanolone is also the first pharmacological protocol specifically approved for PPD. This drug is the liquid form of allopregnanolone, a metabolite of the hormone progesterone. It is preferred only in women who do not respond to antidepressants or ECT, due to the limitations of the use of brexanolone and the inability to fully demonstrate clinical effects. Brexanolone is administered as a continuous 60-hour infusion lasting almost 2.5 days. Available clinical studies show that brexanolone is mostly well tolerated in mothers with moderate to severe postpartum depression and can provide a rapid and positive response (Meltzer -Brody 2018).

## **NURSING CARE**

Women who are at risk of postpartum depression can be identified by evaluations performed during the antenatal period. These women should be given information and education about PPD in the prenatal period, together with their families, in the prenatal period. Information should be reinforced in the postpartum period, during the hospital stay of the pregnant woman and after discharge (Zauderer , 2009). Birth preparation classes provide support especially to primiparous mothers in teaching and using the information they may need for birth. Including the symptoms of postpartum depression in the content of education given to women and their spouses may make it easier to diagnose postpartum depression (Mughal et al, 2022a ).

Postpartum depression is a condition that causes high morbidity. Today, the focus is on prevention from PPD, not treatment options. Nurses, postpartum It has a key role in diagnosing high-risk women in the antenatal period when evaluating mood disorders. Nurses can determine the history of depression or postpartum depression with a detailed anamnesis of the pregnant woman at the time of admission to the hospital. In addition, women who show depressive symptoms during pregnancy should be identified and followed closely by nurses and midwives during the postpartum period. These women need education and support regarding available treatments ( Mughal et al, 2022b). Some of the women identified may benefit from consulting a therapist, while others may need to be referred to a psychiatrist for antidepressant treatment in the postpartum period. Women treated after postpartum depression have a better experience of mother-infant bonding than women who stop treatment. In addition, infants of mothers with depressive symptoms may develop mood and behavioral problems as well as obesity later in life. Despite being aware of postpartum depression, many women are reluctant to tell their family about it, fearing being stigmatized as a bad mother, so they cannot be identified. Therefore, nurses and midwives have a very important role in postpartum care (Meltzer-Brodyet 2018; 2018; Ruyak et 2018). The steps to be followed in detecting postpartum depression are shown in Table 1.

**Table 1. Nursing Management in Evaluation of Postpartum Depression**

| <b>Nursing Practices</b>   |
|--|
| Assess the woman's mental functioning, behavioral state and mood                                     |
| Educate the woman and her partner about postpartum depression  |
| Give examples of a balanced and healthy diet   |
| Provide postpartum support and advice to improve women's self-care                                   |
| Include social workers who can liaise with support groups for women experiencing PPD during training |
| woman to talk about seeking help   |
| Encourage women's participation in social activities   |
| Use the nurse's observer role by following the woman closely in the postpartum period.               |
| Refer woman to therapy if needed   |
| Encourage the woman to care for her baby often   |

## CONCLUSION

Postpartum depression affects not only the mother but also the newborn and family processes. Especially between 2-6 weeks postpartum is a critical period for PPD. Nurses and midwives should evaluate the mother and baby during this critical period. A PPD diagnosed as a result of evaluations affects not only the life of the mother and baby, but also the health of the community in the long run. For this reason, it is very important for health professionals to evaluate women about postpartum depression, to observe the woman in terms of symptoms and to inform her family.

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