

## Review Article

# Diagnosis and Management of Postpartum Depression

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## Abstract

Postpartum Depression (PPD) is a severe mental health problem that affects up to 15% of mothers. It is highly prevalent, and its drawbacks are not limited to the affected mothers. It also extends to their offspring, causing disturbances in their development. Recent research has identified several psychosocial and biological risk factors for PPD, including past depression, stressful life events, poor marital relationships, and social support. The obstetrician, pediatrician and primary health care physicians have a crucial role in screening for and treating PPD. This review aims to provide a holistic approach for PPD diagnosis and management.

**Keywords:** Postpartum Depression; Diagnosis; Management

## 1. Introduction

Delivering a baby is usually a happy event. Childbirth is a complex process, preceded by experiencing hormonal, physical, emotional, and psychological changes during pregnancy. Many postpartum women develop depressive symptoms and disorders. Patients may manifest postpartum blues consisting of mild depressive symptoms that are

generally self-limited, or minor or major depression or more severe syndromes of untreated postpartum depression can result in adverse consequences for the mother and infant [1,2].

### **1.1 Epidemiology**

**Global prevalence** according to a meta-analysis of 27 studies from 16 countries and regions for more than 130,000 postpartum women, In each study, the subjects were assessed with the Edinburgh Postnatal Depression Scale, which is a screening tool and is thus not intended to make a diagnosis. The estimated prevalence of postpartum unipolar depression was around 15%. Although, heterogeneity across studies was significant. Subgroup analyses showed higher prevalence rates in developing more than in developed countries [3].

### **1.2 Onset**

Postpartum depression onset occurs before or during pregnancy in approximately 50%. Most commonly occurs within six weeks after childbirth.

In a prospective study of 546 women who were recruited from an obstetric population and diagnosed with postnatal depression, the onset was as follows Prepregnancy (20%), Antepartum (38%) and Postpartum( 42%) [4].

Another retrospective study of women with postpartum onset of major depression (n = 116) found that the onset occurrence was postpartum month 1 (54%), Postpartum month 2 to 4 (40%) and Postpartum month 5 to 12 (6%) [5].

In many reviews and studies, the postpartum period defines broadly as the first 12 months after birth [6,7], while the postpartum depression definition will depend on the diagnostic system as following:

- The American Psychiatric Association's Diagnostic and Statistical Manual, Fifth Edition (DSM-5), the onset of major postpartum depression can occur prior to or after parturition [8]. The DSM-5 has a specifier "with peripartum onset," which is used when the onset of major depression occurs either during pregnancy or in the four weeks following delivery.
- The World Health Organization's International Classification of Diseases – 10<sup>th</sup> Revision (ICD-10) requires the onset of the episode within six weeks of delivery [9].

## **2. Pathogenesis**

The pathogenesis of postpartum depression is unknown, and to what degree the underpinnings of postpartum depression differ from those of non-perinatal depression [10]. Factors involved in postpartum depression may include genetic susceptibility [11], epigenetic phenomena (e.g., DNA methylation) [12], hormonal changes [13], as well as psychological and social problems and stressful life events [14].

### **3. Risk factors**

#### **3.1 Primary risk factors for PPD syndromes that have the most considerable effect:**

- Depression during pregnancy.
- History of depression, either perinatal (antenatal or postnatal) or non-perinatal [13,15-17].

#### **3.2 Secondary risk factors that are frequently associated with postpartum depression include [16]:**

- Stressful life events (e.g., marital conflict, emigration, or the COVID-19 pandemic) during pregnancy or after delivery.
- Poor social and financial support in the puerperium.
- Perinatal anxiety symptoms and disorders.
- Young age (e.g., age <25 years).
- Single marital status.
- Multiparity.
- Family history of postpartum depression or any psychiatric illness.
- Intimate partner violence and lifetime history of physical and sexual abuse.
- Unintended/unwanted pregnancy.
- Negative attitudes toward pregnancy.
- Fear of childbirth.
- Poor perinatal physical health (e.g., obesity at the time of conception, pregestational or gestational diabetes, antenatal or postnatal hypertension, or infection following delivery).
- Body image dissatisfaction (preconception, antenatal, and postpartum).
- Personality traits, such as neuroticism (marked by an enduring tendency to worry and feel anxious, angry, sad, and guilty).
- History of premenstrual syndrome or premenstrual dysphoric disorder.
- Perinatal sleep disturbance.
- Season of delivery (e.g., postpartum depression may increase during the winter season).

- Adverse pregnancy and neonatal outcomes (e.g., stillbirth, preterm birth and neonatal death).
- Postpartum blues.
- Breastfeeding that is nonexclusive, difficult, relatively short in duration, or ceases relatively early.
- Childcare stress, such as inconsolable infant crying, difficult infant temperament, or infant sleep disturbance.

## **4. Clinical manifestations and Diagnosis**

### **4.1 A. Clinical manifestations**

The clinical features of postpartum major depression appear comparable to those of major depressive episodes that occur outside of the postpartum period [1,13,18].

The symptoms of postpartum major depression and major depressive episodes that occur outside of the postpartum period appear to be similar.

#### **4.1.1 Depressed mood:**

Dysphoria is an essential feature of major depression (major depressive disorder) and persistent depressive disorder (dysthymia). Dysphoria can take many forms, such as feeling sad, hopeless, appear sad (e.g., tearful). In addition, increased and persistent annoyance, frustration, irritability, anger, or hostility occurs in roughly 50% of patients with major depression [8].

#### **4.1.2 Loss of interest or pleasure:**

Anhedonia in formerly pleasurable activities is a cardinal symptom of unipolar major depression [8]. Patients experience events, hobbies, and activities as less exciting or fun and may report that “they don’t care anymore.” Patients may withdraw from or lose interest in friends, and libido or interest in sex may also decrease.

#### **4.1.3 Change in appetite or weight:**

**It happened as** decrease or increase in major depression, persistent depressive disorder, and premenstrual dysphoric disorder [8].

#### **4.1.4 Sleep disturbance:**

**It represents most** frequently occurs in major depression and can also occur in persistent depressive disorder and premenstrual dysphoric disorder [8]. Problems with sleep manifest as insomnia or hypersomnia. Many depressed patients describe their sleep as non-restrictive and report difficulty getting out of bed in the morning.

#### **4.1.5 Fatigue or energy loss:**

Anergia describes feeling tired and exhausted. Patients may need to rest during the day, experience heaviness in their limbs, or feel it is hard to initiate or complete activities.

#### **4.1.6 Neurocognitive dysfunction:**

Major depression, persistent depressive disorder, and premenstrual dysphoric disorder can manifest with impaired ability to think, concentrate, or make decisions. Patients may also appear easily distracted or complain of memory difficulties [8,19].

#### **4.1.7 Psychomotor agitation or retardation:**

**They are** less common than other symptoms but indicate that the patient is more severely ill. Major depressive episodes may include psychomotor disturbances:

- Agitation: Excessive motor activity that is usually nonproductive, repetitious, and accompanied by a feeling of inner tension.
- Retardation: Generalized slowing of body movements, thinking, or speech. Speech volume, quantity, and inflection may be decreased, with increased latency in answering questions [8].

#### **4.1.8 Feelings of worthlessness or excessive guilt:**

The self-perceptions of depressed patients may be marked by feelings of inadequacy, inferiority, failure, worthlessness, and inappropriate guilt [8].

#### **4.1.9 Suicidal ideation and behavior:**

Depressed patients can experience recurrent thoughts of death or suicide and may attempt suicide. Suicidal ideation might be passive, with thoughts that life is not worth living or that others would be better off if the patient was dead. By contrast, active suicidal ideation is marked by thoughts of wanting to die or commit suicide and indicates the patient is severely ill [8].

### **4.2 B- Diagnosis**

Postpartum depression is diagnosed when at least five depressive symptoms are present for at least two weeks. In the *Diagnostic and Statistical Manual of Mental Disorders (DSM-5)*, postpartum depression is considered when a patient has a major depressive episode that begins within 12 months of delivery along with the peripartum onset. It is a separate disease (just a specifier). *Peripartum onset* is defined as a major depressive episode with the onset of pregnancy or within four weeks of delivery. The nine symptoms are present almost daily and represent a change from the previous routine. The diagnosis should include depression or anhedonia (loss of interest) and five symptoms [8].

#### **4.2.1 Comorbid disorders:**

Comorbid mental illness is common in PPD. In a prospective observational study of women with postnatal depression (n = 566), at least one comorbid disorder was present in 66% [20]. The large majority of the comorbid disorders were anxiety disorders. Other comorbidities included eating disorders, obsessive-compulsive disorder, posttraumatic stress disorder, and substance use disorders.

#### **4.2.2 Evaluation**

During the evaluation, it is crucial to include drug and alcohol history, smoking habits, and all prescription and over-the-counter-drug medications. Screening for PPD can be done 2 to 6 months after childbirth. Several screening tools are available, and one of the most frequently used is the Edinburgh Postnatal Depression Scale (EPDS). It is a 10-item questionnaire filled out by patients and takes a few minutes to complete. An EPDS cutoff score equal to or greater than 13 is required to determine if patients are at risk for developing PPD.

This screening test provides the basis for additional clinical tests. The objectives of the clinical evaluation are to constitute the diagnosis, assess suicidal and homicidal risks, in this case usually infanticide, and rule out other psychiatric illnesses [21].

#### **4.2.3 Screening**

Based upon practice guidelines issued by the United States Preventive Services Task Force [22,23] primary care clinicians (including obstetricians, gynaecologists, or pediatricians) should screen all postpartum women for depression. The most widely used instrument for screening postpartum women for major depression is the self-report, 10-item EPDS.

## **5. Differential Diagnosis**

**A. Normal postpartum changes:** The somatic symptoms of major depression (changes in sleep, energy level, and appetite) overlap with changes observed in postpartum women who are not depressed.

**B. Postpartum blues:** Depressive symptoms such as dysphoria, insomnia, fatigue, and impaired concentration can appear in both major postpartum depression and postpartum blues. However, the two disorders are distinguished in that the diagnosis of postpartum blues does not require a minimum number of symptoms. In addition, the symptoms of postpartum blues are mild and self-limited; symptoms typically develop within two to three days of delivery, peak over the next few days, and resolve within two weeks of onset.

**C. Bipolar depression:** Postpartum depression can represent bipolar depression rather than unipolar depression [24,25]. For example, in a prospective study of postpartum women who screened positive for depression (n = 826), the primary diagnosis was a unipolar depression in 69 per cent and bipolar depression in 23 percent [20].

**D. Hyperthyroidism or Hypothyroidism:** these conditions can also lead to mood disorders. They can be assessed by testing TSH and free T4 levels.

## 6. Negative consequences of postpartum depression:

Postpartum depression impairs maternal functioning, is associated with poor nutrition and health in the offspring [26], and can interfere with breastfeeding, maternal-infant bonding, care of the infant and other children, and the woman's relationship with her partner. In addition, postpartum depression is associated with abnormal development, cognitive impairment, and psychopathology in children [27].

- **Breastfeeding:** PPD appears to be associated with an increased risk of not breastfeeding [13,27,28].
- **Poor bonding with an infant:** PPD can interfere with maternal-infant bonding [29,30].
- **Child health care:** PPD appears to be associated with the poorer health care of children [13,28].
- **Infant sleep:** Mothers with PPD may be less likely to position their infants for sleep [28] correctly.
- **Child vaccinations:** Children of depressed mothers may be less likely to receive vaccinations.
- **Compromise safety practices** include using infant car seats, and electric outlet covers [28].
- **Abnormal infant and child development:** PPD appears to be associated with abnormal infant and child development in the offspring.
- **Cognitive impairment and psychopathology in the child:** PPD appears to be associated with cognitive impairment and psychopathology in the children.
- **Marital discord:** PPD may strain the marital relationship [29-31].
- **Suicide:** Although suicide is a leading cause of death in postnatal women [32], the absolute rate of suicide during the postpartum period is very low and ranges from approximately 1 to 5 per 100,000 live births [33].
- **Infanticide:** Rumination about harming the baby can occur in PPD. Patients may describe these thoughts as "scary" or frightening and typically express no intention of wanting to harm their infant. Thoughts of harming the baby are generally experienced as unwanted, unacceptable (ego-dystonic), and intrusive and are usually not revealed unless patients are questioned directly [34,35].

## 7. Treatment And Management

### A. Psychotherapy

**Psychotherapy used initially to treat** mild to moderate postpartum unipolar major depression This approach is consistent with multiple practice guidelines and is especially useful for lactating patients who do not want to expose their infants to antidepressants [8,36-38].

Psychotherapy is typically administered individually; cognitive-behavioural therapy or interpersonal psychotherapy are most commonly used based on their demonstrated efficacy in multiple randomized trials in the general population of patients with major depression and postpartum depression [38]. Group therapy includes several valuable elements, such as developing communication skills, normalizing one's problems by receiving support (e.g., advice, empathy, and validation) from other patients who are experiencing similar problems, reducing social isolation and feelings of loneliness, increasing one sense of belonging and companionship, and learning through the modelling of others [39,40].

### B. Pharmacotherapy:

Antidepressants (e.g., Selective Serotonin Reuptake Inhibitors [SSRIs], serotonin-norepinephrine reuptake inhibitors, bupropion, and mirtazapine) are a reasonable alternative if psychotherapy is not available, not successful, or is declined, or if the patient has previously responded to antidepressants. In addition, combination treatment with pharmacotherapy plus psychotherapy is helpful for some patients.

Pharmacologic recommendations for lactating women should include discussing the benefits of breastfeeding, the risks of antidepressant use during lactation, and the risks of untreated illness. For patients with mild to moderate unipolar major depression who are breastfeeding and choose treatment with an antidepressant, there is a consensus that the benefits of antidepressants outweigh the potential risks to the infant. The risks are regarded as low; for example, most SSRIs pass into breast milk at a dose less than 10 per cent of the maternal level and are generally considered compatible with breastfeeding of healthy, full-term infants [13,41,18].

**For breastfeeding patients with severe, postpartum** major depression, acute treatment depends upon the patient's clinical history and treatment preferences. The primary treatments include antidepressant medications such as selective serotonin reuptake inhibitors (SSRIs) and the more recently developed antidepressant brexanolone, as well as electroconvulsive therapy (ECT) [13,42,43].

#### ➤ **Selective Serotonin Reuptake Inhibitors (SSRIs)**

This group is more widely studied in breastfeeding patients than other antidepressant classes; because of their efficacy and tolerability for postpartum depression. For example, a retrospective study of women (n = 459) treated for postpartum depression with antidepressants found that SSRIs were used in 90 percent [43]. For patients with severe major depression



who are breastfeeding and have not been treated with antidepressants in the past, we suggest initial treatment with SSRIs because of their efficacy and tolerability for postpartum depression.

SSRIs have been used and more widely studied in breastfeeding patients than other antidepressant classes; as an example, a retrospective study of women (n = 459) who were treated for postpartum depression with antidepressants found that SSRIs were used in 90 percent [43]. Each specific SSRI can be used because the class's safety record appears benign. Nevertheless, reasonable SSRI alternatives include serotonin-norepinephrine reuptake inhibitors (SNRIs), mirtazapine, and nortriptyline [41,44,45].

➤ **Brexanolone**

The neuroactive steroid and synthetic preparation of the progesterone metabolite allopregnanolone [46]. In 2019, intravenous brexanolone was the first antidepressant approved by the US Food and Drug Administration (FDA) to treat postpartum depression [42]. Randomized trials, in which a minority of patients received concomitant antidepressants, demonstrate that infusion of brexanolone for 60 hours can provide a rapid, beneficial response for moderate to severe postpartum major depression. Separate pooled analyses of the same three trials compared brexanolone with a placebo in 209 patients [47].

➤ **Electroconvulsive therapy (ECT)**

It is beneficial when rapidly effective treatment is imperative; specific indications include psychotic depression, plans and intent to commit suicide or infanticide, and fluid and food refusal leading to dehydration and malnutrition [41,45].

➤ **Treatment-resistant patients**

- Patients with severe postpartum major depression often do not respond to initial treatment with an antidepressant [48]. Show minimal response (e.g., improvement <25 per cent), it is recommended to switch to another antidepressant rather than augmentation [41,46,49]. Options include switching to another SSRI, or an SNRI, or the atypical antidepressant mirtazapine, or the tricyclic nortriptyline [50]. For patients switching to another antidepressant, some drugs (e.g., bupropion and doxepin) are typically avoided due to concerns about their safety in breastfeeding infants [41,45].
- For lactating women with a partial response (e.g., reduction of baseline symptoms by 25 to 49 per cent) to initial treatment, we add a second drug compatible with breastfeeding rather than switch antidepressants [18,45].
- Antenatal major depression may be remitted with an antidepressant that is discontinued prior to delivery. For those patients who subsequently develop postpartum major depression and are breastfeeding, therefore, resuming the same antidepressant, even if there are better lactation safety data for other medications because using a

different antidepressant increases the number of drug exposures .In addition, exposure to antidepressants already occurring in utero is substantially greater than exposure through breast milk.

- Patients who present with severe, postpartum major depression may have a history of a depressive episode before the pregnancy and were successfully treated with pharmacotherapy. they will benefit from resuming the same regimen for these patients, provided it is compatible with breastfeeding . This includes medication regimens that consisted of an antidepressant plus add-on treatment with a second-generation antipsychotic, lithium, or triiodothyronine [1,41,45,50].

➤ **Psychotic depression**

Treatment of psychotic major depression in breastfeeding patients is similar to treatment of non-postpartum patients. Psychotic depression is treated with an antidepressant plus an antipsychotic; however, ECT is a reasonable first-line option given its relatively rapid onset of action [41,45,51].

➤ **Anxiety or insomnia**

For breastfeeding patients with major postpartum depression that includes significant anxiety or insomnia, monotherapy with antidepressant medication is preferred over the combination of an antidepressant and a benzodiazepine .In particular, the antidepressant brexanolone has demonstrated efficacy for anxiety and insomnia in randomized trials that compared brexanolone with placebo [47]. Nevertheless, for patients with severe anxiety or insomnia, we often prescribe an antidepressant plus a benzodiazepine at the initiation of treatment [41,45]. In addition, adjunctive benzodiazepines can help with intractable anxiety or insomnia. Caution in benzodiazepines is warranted in patients with a history of substance-related and addictive disorders.

➤ **Agitation**

Severe major depression may include episodes of agitation, defined as nonproductive, excess motor activity in conjunction with inner tension [8]. The initial assessment of agitation in patients with a known diagnosis of major depression should focus on determining whether the agitation is due to causes beyond depression, such as a general medical disorder, or intoxication or withdrawal from substances such as alcohol, cocaine, or methamphetamines [52]. Hospitalized postnatal patients with severe major depression who are acutely agitated often require oral, inhaled, or intramuscular medications to manage threatening or aggressive behaviour and may also require seclusion from other patients and physical restraints [53].

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