Postpartum Depression: Recognition and Intervention

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ABSTRACT

- **Objective:** To review the clinical presentation of, risk factors for, and treatment of postpartum depression (PPD).
- **Methods:** Case presentation and review of the literature.
- **Results:** The timing, presentation, severity, and risk factors for episodes of PPD can vary among individuals. However, known risk factors can be easily elicited and validated tools can be used to detect depressive symptoms. Evidence-based, efficacious treatments are available. Treatment decisions need to be based on a personalized risk-benefit analysis by the mother and provider.
- **Conclusion:** Primary care providers are in an excellent position to provide help and care in the identification, treatment, and management of PPD.

Childbirth represents a time of increased risk for the onset of depression in a subgroup of women [1], with reports dating back to the time of Hippocrates [2,3]. Epidemiologic studies demonstrate that women are more likely to be admitted to a psychiatric unit after giving birth than at any other time in their lives [4,5]. Affective disorders that occur in the postpartum are typically divided into 3 categories: blues, postpartum depression (PPD), and postpartum psychosis, each of which differs in its prevalence, risk factors, clinical presentation, and management.

PPD is the most common complication of childbearing, affecting approximately 537,680 women in the United States in 2009 alone [6] and is a major public health concern. The prevalence of PPD ranges from 4.5% to 28% [7]; the variability can be attributed to sampling, timing of assessment, different diagnostic criteria, and whether the study is retrospective (lower rates) or prospective (higher rates) [8]. Untreated PPD has been associated with a range of adverse outcomes: impairments in maternal-child attachment and child behavior, cognitive and neuroendocrine outcomes that persist into adolescence [9–13]. Following a PPD there is increased risk of subsequent depressive episodes [14]; the risk of a depressive episode unrelated to childbirth is 25% and for another PPD is 40% [14,5]. The most widely accepted prevalence rate is 13%, obtained from a well-designed meta-analysis of 59 studies of over 12,000 subjects [16]. The rates differ among different ethnic, racial, and socioeconomic groups. Ethnically diverse [17–19], low-income mothers [20–22] as well as those women with a history of trauma or abuse [23,24] are at increased risk of PPD, with rates of more than 23% reported [17–25]. However these women are seldom included in research studies [26].

Despite its prevalence, PPD remains underdiagnosed and undertreated. Women may be reluctant to disclose symptoms for fear of losing their child(ren), stigma, or embarrassment or they do not realize that the symptoms are pathological [8,27]. Health providers report that their focus during time-limited appointments is on the physical, and not mental, health of the mother and baby [28]. Because of the overlap of symptoms in normal postpartum adaptation and PPD, it is often difficult for mothers and providers to identify PPD.

CASE STUDY

Initial Presentation at 6-Week Postpartum Visit with Obstetrician

Mrs. A, a 25-year-old married mother of 3 children—an 8-week-old full-term daughter, an 18-month-old son, and a 4-year-old son—presents for her 6-week postpartum visit at 8 weeks’ postpartum. She has no physical complaints except fatigue. Her pregnancy and her delivery were uncomplicated. She rescheduled the visit 3 times due to conflicting appointments.

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When the obstetrician enters the exam room, she notices that Mrs. A. appears tired but is lovingly attending to her newborn. The obstetrician reviews Mrs. A’s medical history, review of systems, breastfeeding issues, and birth control options. Mrs. A admits that she is very fatigued but feels it is expected, having 3 young children. She admits to crying on and off over the past weeks but attributes this to sleep deprivation that is exacerbated by exclusively breastfeeding. The doctor asks Mrs. A if she is feeling sad or down most of the day every day but Mrs. A adamantly denies feeling depressed. The doctors asks her a few more questions about how she is feeling and gives her a postpartum depression screening tool to complete (the Edinburgh Postnatal Depression Scale). Mrs. A scores a 9 out of 30. She does not indicate any thoughts of self-harm but does indicate feeling overwhelmed, difficulty sleeping, and anxiety. She is a little tearful when talking about the results but says she is “just tired” from managing her children all day, every day, alone. She does not feel that she needs help at this time. The obstetrician is worried as she has seen this mother through all 3 pregnancies and has not seen her this distraught.

Social History
Mrs. A. has been married for 6 years to her high school boyfriend. She has an associates degree and was planning to obtain a 4-year degree and become a nurse but became pregnant and discontinued her education to stay home with her children. Mr. A works as an auto mechanic for a car dealership, providing for his family but having to work 6 days a week and long hours. Despite his salary, they cannot afford daycare. Mrs. A has all 3 children at home with her full-time. Her mother lives 90 minutes away and is not able to help care for the children. Mrs. A’s sister-in-law lives locally and is caring for the 2 older children during this visit, but Mrs. A and her sister-in-law have many conflicts. Mrs. A does not feel she has much support from her family.

Mental Status Examination
The obstetrician notes the mother to be well groomed and appropriately dressed. Her infant is well cared for and appropriately dressed. The mother shows attentive and appropriate behaviors with the infant, responding to her needs and making direct eye contact when appropriate. Mrs. A admits that her mood is “up and down.” Her affect is tearful, but she is able to compose herself quickly. Her thought process is logical and goal oriented. She is not exhibiting any odd behaviors or odd thoughts. She is not endorsing any thoughts of harm to herself or her child. When asked directly she says “Of course I wouldn’t hurt myself! I have 3 children to care for!”

Assessment and Plan
The physician decides to order a complete blood count and a thyroid screen to rule out anemia and thyroid dysfunction as the cause of the symptoms. She notes that the mother may be experiencing mild postpartum depression but wishes to rule out other etiologies for the fatigue. She asks the mother to return in 2 weeks after her lab results are completed.

How is postpartum depression defined?
Postpartum depression refers to nonpsychotic episodes of depression that occur temporally with childbirth. PPD episodes do not differ clinically from nonpuerperal depressive episodes [29,30], but symptom content may focus on motherhood and the infant. The majority of PPD cases are diagnosed as a major depressive episode with postpartum onset (Table 1) [27]. Diagnostic systems define postpartum onset within 4 weeks of delivery (DSM-IV) but research definitions vary widely, and can include cases with onset within a year of childbirth [27]. Data from epidemiological studies show that the majority of cases of PPD have an onset within 3 months of childbirth; it has been argued that the etiology of these cases is linked with the biological changes surrounding parturition compared to cases that occur later in the postpartum period that may be more influenced by psychosocial variables [31,32].

Episodes of PPD can occur with women who experience symptoms solely after childbirth; may represent the first episode of a psychiatric disorder; or may be an exacerbation of a preexisting psychiatric disorder [33]. There is increasing interest in perinatal depression because while new-onset cases of postpartum depression occur, many, up to 50% of postpartum depressive episodes occur in patients who had a preexisting depression during or before pregnancy that was either diagnosed or was exacerbated in the postpartum period [34]. Therefore, recognizing the symptoms of depres-
sion and intervening, whether during pregnancy or the postpartum period, is critical for primary care providers.

Although anxiety is not listed in the criteria for DSM-IV depression, it is often a prominent feature of a postpartum depression. The mother must experience anxiety in the context of PPD, with the core feature of either low mood or anhedonia present. Women may experience anxiety (constant or excessive worry, fear or apprehension) about the baby’s health (is the baby feeding properly, is (s)he breathing properly), her own ability as a mother or concern over how she will cope in general or with specific situations (bathing the baby, coping with grocery shopping). Sometimes the anxiety can rise to a level of repetitive or obsessional worries or thoughts. Mothers do not always offer this information and need direct, sensitive inquiry as to their presence. It is important to note that the timing, presentation, and severity of episodes of PPD vary between individuals.

**What other disorders occur in the postpartum?**

The postpartum or baby blues affect up to 75% of women [2,3]; symptom onset is usually on postpartum day 3 or 4. The blues are, by definition, transient, limited to a few days, mild and do not require treatment. At times this experience is referred to as postpartum mood reactivity [3,4] due to the ups (sometimes called “pinks”) and downs that women experience, as all feelings are not necessarily sadness.

Postpartum psychosis is the most severe and uncommon form of postpartum mood disorder. The prevalence is 1 to 2 in 1000 deliveries [5,35,36]. Symptom onset is sudden, usually occurring 48 hours to 2 weeks after giving birth [37]. The symptoms of postpartum psychosis include a wide variety of delusions and hallucinations, the content of which is often related to the baby. Mood disturbance is prominent, most commonly mania, although women can fluctuate rapidly between elation and depression. Episodes are often marked by an apparent confusion or perplexity and disorganized behavior. The clinical presentation progresses rapidly and there can be massive shifts in the intensity and presentation of symptoms. Cases of depression with psychotic features in the postpartum period should be considered carefully as there is a high likelihood that the mother is experiencing a postpartum psychosis. Due to the severity and potential implications of the psychotic symptoms and the potential for a “switch” to mania, considering postpartum psychosis in the differential is critical to treatment choices.

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**Table 1. DSM-IV Criteria for Major Depressive Episode**

A. Five (or more) of the following symptoms during the same 2-week period and represent a change from previous functioning; at least 1 of the symptoms is either (1) depressed mood or (2) loss of interest or pleasure

- Depressed mood
- Loss of interest or pleasure in activities
- Significant weight loss when not dieting, or weight gain or decrease or increase in appetite
- Insomnia or hypersomnia
- Psychomotor agitation or retardation
- Fatigue or loss of energy
- Feelings of worthlessness or excessive or inappropriate guilt
- Diminished ability to think or concentrate, or indecisiveness
- Recurrent thoughts of death, recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide

B. The symptoms do not meet criteria for a Mixed Episode (presence of manic symptoms)

C. The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning

D. The symptoms are not due to the direct physiological effects of a substance (eg, a drug of abuse, medication) or a general medical condition (eg, hypothyroidism)

E. The symptoms are not better accounted for by bereavement, the symptoms persist for longer than 2 months or are characterized by marked functional impairment, morbid preoccupation with worthlessness, suicidal ideation, psychotic symptoms or psychomotor retardation
Evidence shows that most cases of postpartum psychosis represent a variant of bipolar disorder, triggered by childbirth [38,39]. The greatest risk factor for postpartum psychosis is having a personal or family history of bipolar disorder or postpartum psychosis [40]; other established risk factors include primiparity and obstetric complications [41–43]. Postpartum psychosis represents a psychiatric emergency and requires emergent evaluation and treatment by a psychiatric team or provider; it often requires hospitalization [38,39].

• What causes PPD?

PPD, and mood disorders in general, are complex illnesses. It is clear that there is heterogeneity between episodes of PPD, and that risk factors differ between individuals. A biopsychosocial model, where biological, psychological and social factors contribute, is the most likely explanation. However, the contribution of each of these factors and how the relationship between biological and psychosocial factors is mediated will differ between individuals [30].

The massive biological changes that occur following parturition have spawned a number of etiological models, but to date they have produced equivocal results. Genetic studies examining susceptibility genes for depression in general, and a potential postpartum trigger, are currently being undertaken. Evidence for a genetic component is supported by familial aggregation in those families with recurrent major depression [44–46] and a genome-wide study found linkage at chromosomes 1 (1q21.3-q32.1) and 9 (9p24.3-p22.3) and modest evidence of association with single-nucleotide polymorphisms in the genes HMCN1 and METTL13 [46] and PPD.

Studies of thyroid markers and PPD have produced some positive results [47,48] while others have failed to find an association [49–51]. Similarly, studies of altered hypothalamic-pituitary-adrenal axis functioning in PPD report lower [52,53], increased [54] or no significant differences in reported levels [55,56]. No consistent differences have been found in absolute levels, or changes in levels, of progesterone between postpartum women with and without depression [53–57]. An important variation on the steroid hormone hypothesis proposed that a heightened sensitivity to changing levels of gonadal steroids differentiates women who develop PPD [58]. This hypothesis was supported in a study that simulated the hormonal events of pregnancy and parturition in 2 groups of euthymic women, those with and without a history of PPD. They found that, compared to controls, women with a previous history of PPD developed depressive symptoms in response to the abrupt withdrawal of progesterone, as occurs naturally in the early postpartum period [58].

Obviously, the postpartum period is a time of psychological and social adjustment. Adjusting to a new infant, motherhood, increased responsibility, changes in partner/family structure and relationships can also contribute to the development of a postpartum depressive episode.

• Who is at risk for PPD?

Analysis of over 24,000 women prospectively recruited in pregnancy found that several antenatal factors significantly predicted PPD. These include depression or anxiety during pregnancy, experiencing stressful life events, lack of social support, previous history of depression [59,60] and previous miscarriage or stillbirth [61]. Physicians should also be aware of potentially vulnerable groups, including women experiencing marital problems, those who have undergone stressful life events, those from lower socioeconomic groups, and those under financial strain. Goyal et al [25] found that women with socioeconomic status risk factors for depression were nearly 11 times more likely to develop PPD; these women are also less likely to have access to mental health services and to report symptoms of depression to providers. The experience of immigrant women should also be considered, as their interactions with and access to health care services and opportunities for social networks and support may differ significantly from other groups [27]. These potential risk factors for PPD can be ascertained during routine pregnancy care. It is important that antenatal health care providers and women themselves are educated about these risk factors.

Mrs. A has some risk factors: 3 young children closely spaced under the age of 4, little support, and financial challenges. But Mrs. A also has some protective factors: she is married, educated, and has a stable relationship with her provider. The risk factors that we do not know
about at this time include her mental health history, her family history of mental health issues, and any marital difficulties, including violence.

**Screening**

Routine screening with a validated depression screening tool (Table 2) can help providers detect postpartum depressive symptoms [62,63]. Screening tools can help providers identify women at risk (those with scores in the “gray zone”), women with active depression (those with high scores), and those at risk for self-harm (indicated on certain items). The tools also allow providers to track how mothers are doing over time. Sometimes the questionnaire can be just the right opening for mothers to talk about their feelings and begin a conversation about other family or personal issues [64–66].

The simple, 10-question EPDS [62] used in Mrs. A’s case is commonly employed in practice. It is easy to complete and score, has been validated in many languages and populations, and has an anxiety subscale that can be helpful as well [67]. However, it is important to note that the EPDS is not the only valid screening tool and that the American Academy of Pediatrics suggests a 2-question screen may also be used. This screen is considered positive if a woman answers yes to either of the 2 following questions [68]:

1. Over the past 2 weeks have you ever felt down, depressed, or hopeless?
2. Over the past 2 weeks have you felt little interest or pleasure in doing things?

As with any screening tool, follow-up questions to determine the clinical severity and diagnosis are necessary to formulate an assessment and recommendations.

- **What is the most likely diagnosis for this patient?**
- **What further evaluation should be undertaken?**

Mrs. A is clearly beyond the 2-week time frame associated with postpartum blues. She does have symptoms consistent with PPD but it is difficult to determine at this point if she is experiencing a full-blown depression. Furthermore, it is important to rule out medical conditions that can mimic depression such as anemia and thyroid dysfunction, including hypothyroidism.

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**Table 2. Validated Screening Tools for Perinatal Depressive Symptoms Commonly Used in Primary Care**

<table>
<thead>
<tr>
<th>Tool</th>
<th>Description</th>
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<tbody>
<tr>
<td>EPDS</td>
<td>Edinburgh Postnatal Depression Scale [71]</td>
</tr>
<tr>
<td>PDSS</td>
<td>Postpartum Depression Screening Scale [72,73]</td>
</tr>
<tr>
<td>PHQ-9</td>
<td>Patient Health Questionnaire 9 item [74–76]</td>
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<tr>
<td>PHQ-2</td>
<td>Patient Health Questionnaire 2-item [75–77]</td>
</tr>
<tr>
<td>BDI</td>
<td>Beck Depression Inventory [78–80]</td>
</tr>
<tr>
<td>CES-D</td>
<td>Center for Epidemiological Studies Depression Scale [81]</td>
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It is often difficult for providers and mothers to distinguish between normal postpartum adjustment and postpartum depression. This mother may very well be exhausted caring for 3 young children with little support. However, with a score of 9 on the EPDS she is also indicating that she has more symptoms, or more severe symptoms, than might be attributable to simply postpartum adaptation. A score of 10 or above is often found to coincide with major or minor depression but in some groups, such as those in minority groups and/or low socioeconomic status, lower scores (8–9 score range) may indicate depression [69,70]. Therefore, if a mother has a borderline score on any screening tool, further inquiry as to the mother’s feelings, situation, symptoms and concerns must be conducted to assess if she is depressed and requires intervention. Mothers often do not identify as depressed but resonate more with questions related to anxiety or specific symptoms.

**Further Evaluation**

The provider might gain more insight into the severity of the symptoms by asking specific questions. Examples include “Do you have difficulty falling asleep even if the children are asleep?” and “Are you feeling worried or having repetitious or frightening thoughts about the baby?” The provider should evaluate if there are any concerns for self-harm or harm to the infant or other children. Asking the questions in a nonjudgmental way is important and gives mothers the opportunity to talk about feelings that they might otherwise not initiate. If the mother answers yes to questions that indicate thoughts of harm to herself or others, the provider must ask more detailed questions such as the specific thoughts, how often they occur, and if the mother has access to the mode of harm, to ascertain if the mother can be sent home with a referral to a mental health provider or if she is at risk and must be immediately seen by
a mental health provider for evaluation. If the answers do not indicate any risk of harm to self or others, but the mother indicates additional concerns such as not sleeping, appetite changes, obsessional thoughts or worries, along with the score of 9, the physician should consider referral to a mental health provider for further evaluation. If the referral is declined or the mother is unable to attend in a timely manner, the physician could schedule a 2-week follow-up visit for reevaluation and offer to see the patient sooner or have her call if there are any changes or worsening symptoms. If the patient allows, the provider might also ask to contact the husband to get his input and to also engage him in helping to monitor how she is doing.

**Well Child Visit with Pediatrician**

The following week, Mrs. A takes her daughter to the 2-month well child visit with her pediatrician. Her daughter is gaining weight and doing well. The pediatrician has no worries about the infant but sees that Mrs. A looks tired, irritable, and overwhelmed. The pediatrician spends time asking Mrs. A how she is doing and Mrs. A begins crying. The full-time commitment to her children, including exclusively breastfeeding her daughter, is leaving her with few emotional resources. She relates that her 4-year-old had been attending daycare 3 days per week, but due to cuts in overtime pay her husband can no longer support any daycare. Mrs. A admits that her 4-year-old is a handful and that she is just managing to get through the day with the 3 children. She is very committed to breastfeeding but the baby is slow to feed and requires multiple long nursing sessions during the day and twice during the night. She denies any violence in the home but her husband often stays out late “drinking with the guys” and is not available to help until 9 PM. The pediatrician asks Mrs. A to complete the EPDS and she scores a 13. The pediatrician asks Mrs. A if she has ever felt like this before and she indicates 2 previous times. She had an episode of depression with a suicide attempt when she was 15 following her parents’ divorce and an episode of depression and anxiety but no self-harm when she became pregnant with her first son. That episode lasted until 6 months postpartum. She denies any thoughts of self-harm but does fear she will drop her baby and worries about this all the time. She has no intention of harming her baby or any of her children whom she loves dearly. She took antidepressants as a teenager but did not feel it helped. She found counseling helpful in both episodes.

**What is treatment for PPD?**

Evidence-based psychotherapy, such as cognitive behavioral therapy or interpersonal psychotherapy, is an effective treatment option for mild and moderate unipolar depression and anxiety [8]. Medication, either alone or in combination with therapy, is most likely needed for bipolar depression and severe unipolar depression as well as for some anxiety disorders. The most effective evidence-based treatments for PPD are antidepressant medication, cognitive behavioral therapy, interpersonal psychotherapy, psychodynamic therapy, non-directive counseling, and telephone-based peer support [8].

Nonpharmacological interventions should be considered for mild to moderate PPD. If an antidepressant is needed, it should be chosen based on multiple factors including previous response or adverse experiences, target symptoms, and medical history including comorbid medical conditions, medications, and allergies. As with treatment of depression at anytime with an antidepressant, the medication should be started at a low dose and titrated up with close monitoring to its effective dose. The lowest effective dose and monotherapy are always preferable.

**Taking Antidepressants While Breastfeeding**

Whether or not the mother is breastfeeding may affect the choice of agent and titration rate of an antidepressant. The age and health of the infant are also considered when choosing an antidepressant in a woman who is breastfeeding. While psychotropic medications pass into breast milk, most studies have not found high or increased rates of adverse events in infants exposed through breast milk to antidepressants, specifically tricyclics and SSRIs; however it is important to recognize that data regarding infant effects in response to exposure to antidepressants in breast milk are very limited and are often the result of individual cases or case series. Of note, it is suggested that fluoxetine and high doses of citalopram be used with caution; however, a personalized risk-benefit analysis may still support the
use of these or other antidepressants [82]. Involvement of the pediatrician is highly recommended, and routine clinical monitoring of the infant for adverse effects, such as sedation, changes in sleep or feeding, and irritability, should be instigated. It should be reiterated that the decision regarding antidepressant use and breastfeeding is a complex one and should be made following discussion of the multiple factors noted above. The choice of treatment should derive from a personalized risk-benefit analysis by the woman and provider that considers the risks of untreated depression. A detailed discussion of antidepressants and breastfeeding is beyond the scope of this article [82–86].

Treatment and Follow-up

After discussion with the pediatrician, Mrs. A agreed that counseling would be helpful. She was thankful for the referral list provided and agreed to follow up with her obstetrician and to call a counselor. She also agreed to supplement her breastfeeding with either expressed milk or formula so that her husband could take one of the middle of the night feedings. The pediatrician called Mrs. A 2 weeks later to see how she was doing. She reported that she had seen her obstetrician and all blood test results were within normal limits. Her husband was helping out with the nightly feedings, thus allowing her to get more rest thereby helping her to be a little less irritable during the day. She discussed her depression with her obstetrician including the possibility of starting an antidepressant and the risks and benefits of antidepressant use while breastfeeding, but remained hesitant to start medication as she did not believe her symptoms warranted this level of intervention. She decided to start seeing a counselor with the understanding that if she did not improve or felt worse, she would contact her obstetrician and initiate an antidepressant as discussed.

At a follow-up appointment with her obstetrician 3 weeks later, Mrs. A said she was feeling better and scored a 9 on the EPDS. Continued close follow-up by the obstetrician and counselor was arranged.

CONCLUSION

The role of the primary care provider in caring for new mothers with postpartum depression cannot be overstated. Mothers trust their pediatricians and obstetricians, and these relationships are critical in supporting mothers throughout this difficult period. Simply knowing the providers are available to them can be very reassuring. Providers are in a strong position to screen for and help to identify women with symptoms at an early stage, and to help mothers to acknowledge the symptoms and seek help. The routine use of screening tools can allow providers to monitor how mothers are doing over time and often provide an opening for mothers to talk about their feelings, or other family or personal issues [67–69]. Health care providers must assess the safety of the mother and the infant; if there is an imminent safety risk, these mothers should not be left alone and should be evaluated immediately by a psychiatrist or in an emergency setting. Providers can give mothers the reassurance that they are not alone, that this is a common phenomenon, and that help is available.

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