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# Perinatal Obsessive–Compulsive Disorder: Epidemiology, Phenomenology, Etiology, and Treatment

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## Abstract

**Purpose of Review—**We review recent evidence concerning the epidemiology, etiology, and treatment of obsessive–compulsive disorder (OCD) in the perinatal period. We examine studies reporting on rates of both new-onset OCD and exacerbation in both pregnancy and postpartum; explore both biological and psychosocial risk factors for the disorder; and review the latest evidence concerning treatment.

**Recent Findings—**Evidence is limited in all areas, with rates of both OCD and subthreshold obsessive–compulsive symptoms varying widely across studies. Prevalence is likely higher in the perinatal period than in the general population. Clinical features in the perinatal period are more likely than at other times to concern harm to the child, with contamination and aggressive obsessions and cleaning and checking compulsions especially common. Research into the biological etiology is too limited at this time to be definitive. Both observational and randomized controlled trials support cognitive behavioral therapy with exposure and response

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**Human and Animal Rights and Informed Consent** This article reviews many studies involving human and animal subjects for which ethical standards and informed consent would apply; however, no new original studies involving human or animal subjects were performed by the authors specifically for this article.

prevention (CBT with ERP) as a first-line treatment, with limited evidence also supporting the use of selective serotonin reuptake inhibitors (SSRIs). Treatment considerations in the perinatal period must weigh the risks of treatment vs. the risks of untreated illness.

**Summary—**Perinatal OCD is common and can be impairing. Clinical features differ somewhat compared to non-perinatal periods. Treatment does not differ from that used in the general population, though evidence pertaining specifically to the perinatal period is sparse.

### Keywords

Obsessive–compulsive disorder; Pregnancy; Postpartum; Perinatal

## Introduction

Obsessive–compulsive disorder (OCD) is a common, sometimes debilitating, and under-recognized psychiatric illness, affecting approximately 1–2% of the population (and a larger group with sub-threshold symptoms) [1–3]. Clinical features include unbidden intrusive thoughts or images (obsessions), often accompanied by mental or physical rituals designed to lessen the distress of the obsessions. OCD shares with anxiety disorders a higher prevalence among women compared to men (about 1.6 times) [3, 4], and considerable research points to increased incidence and prevalence at times of reproductive transition [5–7]. The perinatal period is a time of especially increased vulnerability, not only for the disorder, but also for sub-threshold symptoms [8–11]. In one study, fully 65% of new parents reported experiencing intrusive thoughts, though for many these were fleeting and did not affect function [5, 12]. In addition, obsessions are a common feature of other mood and anxiety disorders arising in the perinatal period [13].

An understanding of perinatal OCD is a critical skill for clinicians who treat pregnant and postpartum women. Perinatal OCD has adverse effects for both mother and child. Pregnancies affected by OCD have a higher risk for adverse obstetrical and neonatal outcomes (including gestational hypertension, preeclampsia, poor fetal growth, preterm birth, and elevated inflammatory markers in the neonate) [14–17]. Women with perinatal OCD report poorer quality of life, greater distress, and lower maternal responsiveness [18, 19].

While the disorder resembles OCD at other points in the lifetime, there are some unique clinical features, and evaluation that does not account for these nuances will often miss OCD and attribute symptoms instead to mood or anxiety disorders, with which there are crucial differences in treatment. In addition, the intrusive thoughts of OCD can be mistaken for the delusions of postpartum psychosis, leading either to a failure to recognize the latter (a psychiatric emergency) or, more usually, to a misinterpretation and overreaction to OCD, which can lead to inappropriate actions that may include a higher level of care than is warranted and/or involvement of child services.

This article offers a brief overview of the current understanding of perinatal OCD, focusing on epidemiology and phenomenology, etiology, and treatment.

## Epidemiology and Phenomenology

While exact numbers differ across studies, there is considerable evidence that the perinatal period is a time of risk for both new-onset OCD and exacerbation of existing OCD. Rates for new-onset OCD in pregnancy range from 2 to 22%, [2, 11, 20–25], with evidence indicating somewhat higher risk in the postpartum (from 2 to 24%) [8–10, 26]. In addition, studies have shown that 8–70% of women with existing OCD will experience perinatal exacerbations [7, 25, 27–30]. A recent article that carefully characterized women using strict diagnostic criteria found a period prevalence of 7.8% in pregnancy and 16.9% in the postpartum [31].

The clinical features of perinatal OCD have both similarities to and differences from OCD in the general population. As with general OCD, the disorder is characterized by obsessions (intrusive thoughts, ideas, images or impulses), compulsions (repetitive or ritualistic behaviors), or both. To meet criteria for the disorder (as opposed to subthreshold symptoms), the symptoms must affect functioning by being very time-consuming or causing clinically significant distress, and cannot be explained by a different condition [32]. Unique to the perinatal period, obsessions often center on infant harm; aggressive intrusive thoughts of infant harm are especially common in the postpartum [5, 7, 33]. Some literature shows that obsessions that begin in pregnancy are likely to focus on contamination and can be accompanied by cleaning and washing compulsions, while postpartum onset obsessions are more likely to focus on infant harm and be accompanied by checking and avoiding compulsions [33–35].

Thoughts of infant harm in particular can be graphic (including violent or sexual images) and extremely distressing. They cause acute suffering in the mother, and many women are reluctant to disclose such thoughts to a healthcare provider. It is therefore critically important for clinicians to ask specifically and non-judgmentally about intrusive thoughts. It is also of critical importance that clinicians understand how to distinguish between these ego-dystonic intrusive thoughts (which are horrifying to the mother) and the ego-syntonic thoughts of infant harm that can be a feature of postpartum psychosis [36].

Compulsions in the perinatal period are mostly likely to take two forms, in keeping with the most common types of obsessions: contamination-related rituals (such as cleaning and sterilizing baby equipment) and checking or ordering rituals (such as repeated checking on a sleeping infant), with checking the most common perinatal compulsion [33]. If obsessions are extreme, they can also lead to avoidance—for example, the woman who fears dropping her child out the window may avoid all windows, and the woman who has images of her child being stabbed may refuse to use knives or enter the kitchen. Most compulsions and avoidances do not directly harm the child, but in extreme cases, they can— for example, the woman who cleans her child too vigorously or using inappropriate household cleaning products, or the woman who so avoids her child that neglect is the result. Even when symptoms are not extreme, however, they can have deleterious effects on both mother and child by impairing mother–child bonding and attachment [18]. Impairments in attachment can, of course, affect child temperament and fussiness in the short term and can also lead to a lifelong vulnerability to psychiatric disorders.

Perinatal OCD is often comorbid with other psychiatric disorders, and it is important for clinicians to understand how to distinguish a mood or anxiety disorder (possibly with sub-threshold obsessions) from OCD, as treatment differs. The most common mis-diagnoses are generalized anxiety disorder (GAD) and perinatal depression. While both disorders can present with worry and rumination, which can be confused with obsessions, the content of such thoughts in GAD and depression is generally tied to reallife circumstances; in other words, exaggerated levels of distress surrounding things that are actually happening or will happen. Such worries and ruminations generally shift over time. In perinatal OCD, by contrast, intrusive thoughts center on senseless and irrational events and do not shift over time [37].

While it is important to distinguish perinatal OCD from mood and anxiety disorders because of differences in treatment, it is even more important to distinguish it from the psychiatric emergency postpartum psychosis, which can also present with thoughts of infant harm. Women with OCD have preserved insight, are extremely distressed by their thoughts, and will protect or even avoid their infants to prevent harm. Women with postpartum psychosis, by contrast, have delusional beliefs without insight [18, 38, 39]. This crucial distinction means that women with postpartum psychosis are at elevated risk of infant harm, while those with OCD are not [40]. Women with postpartum psychosis nearly always require inpatient hospitalization and alternate care for their infants, and the involvement of social services to ensure the protection of the child is often necessary. Women with OCD, on the other hand, are more appropriately treated in outpatient or partial hospital settings that do not require separation from their babies, and it is rarely necessary to involve social services for the protection of the child (see Table 1).

## Etiology

The etiology of perinatal OCD at this time is poorly understood, but it is clear that there are both psychosocial and biological contributors. Some studies report that obstetric complications and mode of delivery may affect risk [2, 14, 41–43], but this is not a consistent finding. A personal or family history of mood disorders increases risk [27, 44], as does the presence of dysfunctional obsessive beliefs or an avoidant or obsessive–compulsive personality [5, 23, 45]. Primiparity is a known risk factor and may be due in part to biological influences and in part to the new responsibilities associated with the role transition of new motherhood [45].

Research into the biological etiology of perinatal OCD is very much in its infancy. A large-scale multi-site trial currently underway (NIMH R01MH11824) may, in a few years, increase our understanding of the biology. In the meantime, we must look to the overlap between research on general OCD and that on perinatal mood and anxiety disorders to come up with some plausible hypotheses about the biological origins of perinatal OCD. Genetic contributions have been examined in both general OCD and perinatal depression in the genes for MAO-A, BDNF, and the estrogen and oxytocin receptors, but with no clear consistent findings [46]. Polymorphisms in two genes (5-HTTLPR and COMT) have more consistently been implicated in both general OCD and perinatal depression and so may have more applicability to perinatal OCD [46–48]. Epigenetic biomarkers have been

established that predict the exacerbation of OCD symptoms during pregnancy, and this remains a promising future area of research [49, 50].

The immune system is one plausible area of research for the biological etiology of perinatal OCD. There are substantial immune changes in even healthy pregnancy, to prevent the rejection by the mother of the fetus, and immune dysregulation has been implicated in various perinatal morbidities (including mood and anxiety disorders) as well as in general OCD [51–54]. Due to inconsistencies in measurement tools (both of psychiatric diagnoses and of immune markers), however, it is too early to say definitively whether immune dysregulation will prove a strong component.

The same inconclusive conclusion must be applied at this stage to other biological systems. Dysregulation of several neurotransmitter systems, including serotonin, glutamate, and GABA, has also been suggested for both general OCD and perinatal mood and anxiety disorders, making these systems possible targets for future research in perinatal OCD [55–60]. The stress response system may also be involved, with some research showing that women with postpartum OCD have higher levels of basal salivary cortisol than do healthy postpartum controls [61]. Finally, reproductive and other hormones (including estrogen, progesterone, thyroid hormone, and oxytocin) are also ripe areas for future research in perinatal OCD, as all have been examined in perinatal mood and anxiety disorders.

Sleep deprivation may also prove to be a promising future avenue of research. General OCD has been associated with disturbed sleep [62, 63]. All postpartum women experience significant sleep disruption, and those vulnerable to OCD may be more sensitive to such disruption [10, 64–66]. Postpartum obsessions involving fear of harm coming to the baby may make it difficult for women to sleep even when they have the chance, while postpartum compulsions such as checking and cleaning may use up time that could otherwise be spent sleeping [64, 67].

## Treatment

As OCD symptoms can be debilitating and can impair the functioning of the entire family, it is vital to recognize and treat them. Unfortunately, there is little research on treatment of OCD specific to the perinatal period, and there are no specific treatment guidelines. There is no reason to expect that perinatal OCD will respond differently to treatment than general OCD, but without more research specific to this population, we cannot be certain.

In the perinatal period, treatment requires a careful consideration of the risks of treatment compared to the risks of no treatment. The risks attaching to psychotropic drugs have been studied extensively at this point, and while there are no randomized controlled trials to guide our treatment choices there is a large and largely reassuring body of observational literature. Studies that use appropriate control groups show few (though not absent) risks associated with the medications most commonly used for OCD. It is imperative for clinicians to view this information in the light of known information about the risks to mother, child, and family of NOT treating the illness. Although there is little research specific to the risks of untreated perinatal OCD, we know that perinatal mood and anxiety disorders, as well as

other types of stress and distress in pregnancy, are associated with substantial risk, including relapse of psychiatric illness for the mother; preterm birth; and deficits in cognitive and emotional development of the child [68–72]. It is therefore prudent to use for the perinatal OCD patient a treatment approach that best minimizes risk—by using the lowest effective dose of as few medications as possible. In other words, if it is possible to get the mother well without medication, do that—but if not, treat her and do not be stingy with dosage. Treating her with lower doses than are effective just exposes the baby to both the illness and the medications, while treating to remission creates FEWER exposures for the baby (see Fig. 1).

## Nonpharmacological Approaches

Cognitive behavioral therapy (CBT) is the only therapy with evidence to support its effectiveness in OCD [73]. CBT with exposure and response prevention (ERP) has the most evidence [74–76] and should be considered the first-line treatment. While numerous randomized-controlled trials support the use of CBT with ERP in the general population, evidence for the perinatal period specifically is largely limited to observational trials, all of which report improvement in a limited number of patients without a comparator group [77–81]. One recent trial randomized patients with postpartum OCD to intensive CBT vs. treatment as usual and found a significant reduction in OCD symptoms in the intervention group [82]. Treatment guidelines from the general population can be applied in perinatal OCD, with 13–20 weekly sessions followed by a 3–6-month period of booster sessions.

While CBT with ERP is the only evidence-based psychotherapeutic approach, other forms of therapy can be useful for some of the symptoms of perinatal OCD. Family therapy, supportive therapy, motivational interviewing, and dialectical behavioral therapy can be helpful at alleviating distress caused by symptoms, especially for patients who are unable to engage in CBT with ERP due to the severe distress caused by their symptoms [73]. These are, however, stop-gap measures—and the patient who does not benefit from or cannot engage in CBT with ERP will likely require psychopharmacological treatment.

## Pharmacological Treatment

The FDA has approved the selective serotonin reuptake inhibitors (SSRIs) fluoxetine, fluvoxamine, paroxetine, and sertraline as well as the tricyclic antidepressant (TCA) clomipramine for OCD, and all are considered first-line agents [32] that are compatible with pregnancy and lactation. Escitalopram and citalopram are also efficacious and can be used despite the lack of FDA indication [83–85]. Monotherapy with one of these agents should be attempted first, and as always in the perinatal period, it is important to maximize one drug before adding a second, to reduce the number of exposures for the fetus or breastfeeding infant. As OCD generally requires higher doses than mood and anxiety disorders—and as pharmacokinetic changes in pregnancy result in plasma concentration drops of 40–50% by the end of pregnancy—doses may need to be much higher than most clinicians are accustomed to in order to be efficacious. Modest evidence also supports second-line approaches, including augmentation with antipsychotics and venlafaxine and mirtazapine monotherapy [86–92].

FDA approval and evidence for the treatments listed above is based on non-perinatal patients, and only open-label trials exist during the perinatal period; efficaciousness in these few trials is largely consistent with that from the general population [44, 79, 93–95]. As with the general population, treatment should be continued for 1–2 years before considering a gradual taper [73]. There is no reason to alter this in the perinatal period, as the relatively benign risks and side effect profiles of the approved drugs make them compatible with pregnancy and breastfeeding.

### Other Somatic Interventions

Transcranial magnetic stimulation, deep-brain stimulation and other neurosurgical approaches, and electroconvulsive therapy have all been investigated for general OCD. The significant morbidity associated with these, as well as the small amount of evidence supporting their efficacy (including none in the perinatal period), makes them inadvisable for pregnant and postpartum women in all but the most egregiously treatment-refractory cases.

## Conclusions

OCD in the perinatal period is common and often misdiagnosed. Incidence and prevalence rates differ widely across studies, but most literature indicates at the least a modest increase in risk during pregnancy and especially postpartum. While clinical features can resemble those of OCD in the general population, symptoms are often centered around thoughts of infant harm (either direct or indirect), and at their most severe can induce significant distress in mothers and at times lead to avoidance or even neglect of the child. Etiology is poorly understood, though prior history of mood or anxiety disorders and certain personality types enhance risk. There may be both genetic and epigenetic risk factors, and growing but still quite limited evidence points to dysregulation in the stress response system, the immune system, and the neuroendocrine system. Women with OCD rarely act on intrusive thoughts of child harm (unlike those with postpartum psychosis), and most can be appropriately treated on an outpatient basis. CBT with ERP and SSRIs are both first-line treatments, but few data exist on unique features of treatment in the perinatal period. Research into all aspects of this common and debilitating disorder has lagged behind those of other perinatal mood and anxiety disorders.

## Conflict of Interest

The authors have no competing interests to declare that are relevant to the content of this article. While no funding was received directly for the work on this article. Dr. Osborne’s scholarly work is supported by NIH-NIMH K23 MH110607.

## References

1. Chaudron LH, Nirodi N. The obsessive-compulsive spectrum in the perinatal period: a prospective pilot study. Arch Womens Ment Health. 2010;13(5):403–10. [PubMed: 20221779]
2. McGuinness M, Blissett J, Jones C. OCD in the perinatal period: is postpartum OCD (ppOCD) a distinct subtype? A review of the literature. Behav Cogn Psychother. 2011;39(3):285–310. [PubMed: 21208486]

3. Fawcett EJ, Power H, Fawcett JM. Women are at greater risk of OCD than men: a meta-analytic review of OCD prevalence worldwide. J Clin Psychiatry. 2020;81(4).
4. Fontenelle LF, Mendlowicz MV, Versiani M. The descriptive epidemiology of obsessive-compulsive disorder. Prog Neuropsychopharmacol Biol Psychiatry. 2006;30(3):327–37. [PubMed: 16412548]
5. Abramowitz JS, Schwartz SA, Moore KM, Luenzmann KR. Obsessive-compulsive symptoms in pregnancy and the puerperium: a review of the literature. J Anxiety Disord. 2003;17(4):461–78. [PubMed: 12826092]
6. Labad J, Alonso P, Segalas C, Real E, Menchon JM. Reproductive hormone sensitivity and obsessive-compulsive disorder: are there differences in the genetic predisposition between symptom dimensions? J Clin Psychiatry. 2011;72(3):417–8. [PubMed: 21450163]
7. Speisman BB, Storch EA, Abramowitz JS. Postpartum obsessive-compulsive disorder. J Obstet Gynecol Neonatal Nurs. 2011; 40(6):680–90.
8. Miller ES, Chu C, Gollan J, Gossett DR. Obsessive-compulsive symptoms during the postpartum period. A prospective cohort J Reprod Med. 2013;58(3–4):115–22. [PubMed: 23539879]
9. Miller ES, Hoxha D, Wisner KL, Gossett DR. The impact of perinatal depression on the evolution of anxiety and obsessive-compulsive symptoms. Arch Womens Ment Health. 2015;18(3):457–61. [PubMed: 25355541]
10. Osnes RS, Eberhard-Gran M, Follestad T, Kallestad H, Morken G, Roaldset JO. Mid-pregnancy insomnia is associated with concurrent and postpartum maternal anxiety and obsessivecompulsive symptoms: a prospective cohort study. J Affect Disord. 2020;266:319–26. [PubMed: 32056894]
11. Zambaldi CF, Cantilino A, Montenegro AC, Paes JA, de Albuquerque TL, Sougey EB. Postpartum obsessive-compulsive disorder: prevalence and clinical characteristics. Compr Psychiatry. 2009;50(6):503–9. [PubMed: 19840587]
12. Fairbrother N, Woody SR. New mothers' thoughts of harm related to the newborn. Arch Womens Ment Health. 2008;11(3):221–9. [PubMed: 18463941]
13. Miller ES, Hoxha D, Wisner KL, Gossett DR. Obsessions and Compulsions in Postpartum Women Without Obsessive Compulsive Disorder. J Womens Health (Larchmt). 2015;24(10):825–30. [PubMed: 26121364]
14. Nasiri K, Czuzoj-Shulman N, Abenhaim HA. Association between obsessive-compulsive disorder and obstetrical and neonatal outcomes in the USA: a population-based cohort study. Arch Womens Ment Health. 2021.
15. Aarnoudse-Moens CS, Weisglas-Kuperus N, van Goudoever JB, Oosterlaan J. Meta-analysis of neurobehavioral outcomes in very preterm and/or very low birth weight children. Pediatrics. 2009;124(2):717–28. [PubMed: 19651588]
16. Uguz F, Onder Sonmez E, Sahingoz M, Gokmen Z, Basaran M, Gezginc K, et al. Neuroinflammation in the fetus exposed to maternal obsessive-compulsive disorder during pregnancy: a comparative study on cord blood tumor necrosis factor-alpha levels. Compr Psychiatry. 2014;55(4):861–5. [PubMed: 24480417]
17. Uguz F, Yuksel G, Karsidag C, Guncu H, Konak M. Birth weight and gestational age in newborns exposed to maternal obsessive-compulsive disorder. Psychiatry Res. 2015;226(1):396–8. [PubMed: 25660733]
18. Challacombe FL, Salkovskis PM, Woolgar M, Wilkinson EL, Read J, Acheson R. Parenting and mother-infant interactions in the context of maternal postpartum obsessive-compulsive disorder: Effects of obsessional symptoms and mood. Infant Behav Dev. 2016;44:11–20. [PubMed: 27259042]
19. Miller ML, O'Hara MW. Obsessive-compulsive symptoms, intrusive thoughts and depressive symptoms: a longitudinal study examining relation to maternal responsiveness. J Reprod Infant Psychol. 2020;38(3):226–42. [PubMed: 31431052]
20. Andersson L, Sundstrom-Poromaa I, Bixo M, Wulff M, Bondestam K, aStrom M. Point prevalence of psychiatric disorders during the second trimester of pregnancy: a population-based study. Am J Obstet Gynecol. 2003;189(1):148–54. [PubMed: 12861154]
21. Sutter-Dallay AL, Giaconne-Marcesche V, Glatigny-Dallay E, Verdoux H. Women with anxiety disorders during pregnancy are at increased risk of intense postnatal depressive symptoms:

a prospective survey of the MATQUID cohort. Eur Psychiatry. 2004;19(8):459–63. [PubMed: 15589703]

22. Uguz F, Akman C, Kaya N, Cilli AS. Postpartum-onset obsessive-compulsive disorder: incidence, clinical features, and related factors. J Clin Psychiatry. 2007;68(1):132–8. [PubMed: 17284141]
23. Uguz F, Gezginc K, Zeytinci IE, Karatayli S, Askin R, Guler O, et al. Course of obsessive-compulsive disorder during early postpartum period: a prospective analysis of 16 cases. Compr Psychiatry. 2007;48(6):558–61. [PubMed: 17954142]
24. Vulink NC, Denys D, Bus L, Westenberg HG. Female hormones affect symptom severity in obsessive-compulsive disorder. Int Clin Psychopharmacol. 2006;21(3):171–5. [PubMed: 16528139]
25. Fairbrother N, Collardeau F, Albert AYK, Challacombe FL, Thordarson DS, Woody SR, et al. High prevalence and incidence of obsessive-compulsive disorder among women across pregnancy and the postpartum. J Clin Psychiatry. 2021;82(2).
26. Russell EJ, Fawcett JM, Mazmanian D. Risk of obsessive-compulsive disorder in pregnant and postpartum women: a meta-analysis. J Clin Psychiatry. 2013;74(4):377–85. [PubMed: 23656845]
27. Labad J, Menchon JM, Alonso P, Segalas C, Jimenez S, Vallejo J. Female reproductive cycle and obsessive-compulsive disorder. J Clin Psychiatry. 2005;66(4):428–35; quiz 546. [PubMed: 15816784]
28. Chatterjee A, Zumpf K, Sprague J, Ciolino J, Wisner KL, Clark C, et al. Impact of the peripartum period on the longitudinal course of obsessive-compulsive disorder. Arch Womens Ment Health. 2021:1–7.
29. Burton HAL. How women with established obsessive compulsive disorder experience pregnancy and postpartum: an interpretative phenomenological analysis. J Reprod Infant Psychol. 2021;39(3):313–25. [PubMed: 32000519]
30. Guglielmi V, Vulink NC, Denys D, Wang Y, Samuels JF, Nestadt G. Obsessive-compulsive disorder and female reproductive cycle events: results from the OCD and reproduction collaborative study. Depress Anxiety. 2014;31(12):979–87. [PubMed: 24421066]
31. Fairbrother N, Collardeau F, Albert AY, Challacombe FL, Thordarson DS, Woody SR, Janssen PA. High prevalence and incidence of obsessive-compulsive disorder among women across pregnancy and the postpartum. J Clin Psychiatry. 2021;82(2). 10.4088/JCP.20m13398.
32. Diagnostic and statistical manual of mental disorders. American Psychiatric Association. 2013;17:133–7.
33. Hudak R, Wisner KL. Diagnosis and treatment of postpartum obsessions and compulsions that involve infant harm. Am J Psychiatry. 2012;169(4):360–3. [PubMed: 22476676]
34. Forray A, Focseneanu M, Pittman B, McDougle CJ, Epperson CN. Onset and exacerbation of obsessive-compulsive disorder in pregnancy and the postpartum period. J Clin Psychiatry. 2010;71(8):1061–8. [PubMed: 20492843]
35. Starcevic V, Eslick GD, Viswasam K, Berle D. Symptoms of obsessive-compulsive disorder during pregnancy and the postpartum period: a systematic review and meta-analysis. Psychiatr Q. 2020;91(4):965–81. [PubMed: 32445002]
36. Hutner LCL, Nagle-Yang S, WIlliams K, Osborne LM, eds. The APA Textbook of Women's Reproductive Mental Health. Washington, DC: APA Publishing; 2021 (forthcoming).
37. Abramowitz JS, Meltzer-Brody S, Leserman J, Killenberg S, Rinaldi K, Mahaffey BL, et al. Obsessional thoughts and compulsive behaviors in a sample of women with postpartum mood symptoms. Arch Womens Ment Health. 2010;13(6):523–30. [PubMed: 20607572]
38. Howard M, Battle C, Pearlstein T, Rosene-Montella K. A psychiatric mother-baby day hospital for pregnant and postpartum women. Arch Womens Ment Health. 2006;9(4):213–8. [PubMed: 16718517]
39. Collardeau F, Corbyn B, Abramowitz J, Janssen PA, Woody S, Fairbrother N. Maternal unwanted and intrusive thoughts of infant-related harm, obsessive-compulsive disorder and depression in the perinatal period: study protocol. BMC Psychiatry. 2019;19(1):94. [PubMed: 30898103]
40. Fairbrother N, Collardeau F, Woody SR, Wolfe DA, Fawcett JM. Postpartum thoughts of infant-related harm and obsessive-compulsive disorder. J Clin Psychiatry. 2022;83(2). 10.4088/JCP.21m14006.

41. Maina G, Albert U, Bogetto F, Vaschetto P, Ravizza L. Recent life events and obsessive-compulsive disorder (OCD): the role of pregnancy/delivery. Psychiatry Res. 1999;89(1):49–58. [PubMed: 10643877]
42. Brander G, Rydell M, Kuja-Halkola R, Fernandez de la Cruz L, Lichtenstein P, Serlachius E, et al. Association of perinatal risk factors with obsessive-compulsive disorder: a population-based birth cohort, sibling control study. JAMA Psychiatry. 2016;73(11):1135–44. [PubMed: 27706475]
43. Vasconcelos MS, Sampaio AS, Hounie AG, Akkerman F, Curi M, Lopes AC, et al. Prenatal, perinatal, and postnatal risk factors in obsessive-compulsive disorder. Biol Psychiatry. 2007;61(3):301–7. [PubMed: 17123475]
44. Sharma V, Sommerdyk C. Obsessive-compulsive disorder in the postpartum period: diagnosis, differential diagnosis and management. Womens Health (Lond). 2015;11(4):543–52. [PubMed: 26246310]
45. Fairbrother N, Abramowitz JS. New parenthood as a risk factor for the development of obsessional problems. Behav Res Ther. 2007;45(9):2155–63. [PubMed: 17084810]
46. McEvoy K, Osborne LM, Nanavati J, Payne JL. Reproductive affective disorders: a review of the genetic evidence for premenstrual dysphoric disorder and postpartum depression. Curr Psychiatry Rep. 2017;19(12):94. [PubMed: 29082433]
47. Pooley EC, Fineberg N, Harrison PJ. The met(158) allele of catechol-O-methyltransferase (COMT) is associated with obsessive-compulsive disorder in men: case-control study and meta-analysis. Mol Psychiatry. 2007;12(6):556–61. [PubMed: 17264842]
48. Taylor S Molecular genetics of obsessive-compulsive disorder: a comprehensive meta-analysis of genetic association studies. Mol Psychiatry. 2013;18(7):799–805. [PubMed: 22665263]
49. Kaminsky ZA, Osborne LM, Guglielmi V, Jones I, Grenier W, Clark K, et al. Postpartum depression biomarkers predict exacerbation of OCD symptoms during pregnancy. Psychiatry Res. 2020;293:113332. [PubMed: 32781363]
50. Payne JL, Osborne LM, Cox O, Kelly J, Meilman S, Jones I, et al. DNA methylation biomarkers prospectively predict both antenatal and postpartum depression. Psychiatry Res. 2020;285:112711. [PubMed: 31843207]
51. Fluitman S, Denys D, Vulink N, Schutters S, Heijnen C, Westenberg H. Lipopolysaccharide-induced cytokine production in obsessive-compulsive disorder and generalized social anxiety disorder. Psychiatry Res. 2010;178(2):313–6. [PubMed: 20452055]
52. Gray SM, Bloch MH. Systematic review of proinflammatory cytokines in obsessive-compulsive disorder. Curr Psychiatry Rep. 2012;14(3):220–8. [PubMed: 22477442]
53. Osborne LM, Yenokyan G, Fei K, Kraus T, Moran T, Monk C, et al. Innate immune activation and depressive and anxious symptoms across the peripartum: an exploratory study. Psychoneuroendocrinology. 2018;99:80–6. [PubMed: 30195110]
54. Osborne LM, Monk C. Perinatal depression–the fourth inflammatory morbidity of pregnancy?: Theory and literature review. Psychoneuroendocrinology. 2013;38(10):1929–52. [PubMed: 23608136]
55. Mavorgiorgou P, Gohle D, Winter C, Rujescu D, Pogarell O, Mulert C, et al. Low serotonergic function and its normalization by treatment with sertraline in obsessive-compulsive disorder–an auditory evoked potential study. J Clin Psychopharmacol. 2010;30(3):341–3. [PubMed: 20473079]
56. Pittenger C, Bloch MH, Williams K. Glutamate abnormalities in obsessive compulsive disorder: neurobiology, pathophysiology, and treatment. Pharmacol Ther. 2011;132(3):314–32. [PubMed: 21963369]
57. Pogarell O, Hamann C, Popperl G, Juckel G, Chouker M, Zaudig M, et al. Elevated brain serotonin transporter availability in patients with obsessive-compulsive disorder. Biol Psychiatry. 2003;54(12):1406–13. [PubMed: 14675805]
58. Sepede G, Sarchione F, Matarazzo I, Di Giannantonio M, Salerno RM. Premenstrual dysphoric disorder without comorbid psychiatric conditions: a systematic review of therapeutic options. Clin Neuropharmacol. 2016;39(5):241–61. [PubMed: 27454391]
59. Wang HR, Woo YS, Bahk WM. Potential role of anticonvulsants in the treatment of obsessive-compulsive and related disorders. Psychiatry Clin Neurosci. 2014;68(10):723–32. [PubMed: 24735021]

60. Winter C, Greene DM, Mavrogiorgou P, Schaper H, Sohr R, Bult-Ito A, et al. Altered serotonergic and GABAergic neurotransmission in a mice model of obsessive-compulsive disorder. Behav Brain Res. 2018;337:240–5. [PubMed: 28916503]
61. Lord C, Hall G, Soares CN, Steiner M. Physiological stress response in postpartum women with obsessive-compulsive disorder: a pilot study. Psychoneuroendocrinology. 2011;36(1):133–8. [PubMed: 20537805]
62. Nordahl H, Havnen A, Hansen B, Ost LG, Kvale G. Sleep disturbances in treatment-seeking OCD-patients: Changes after concentrated exposure treatment. Scand J Psychol. 2018;59(2):186–91. [PubMed: 29244201]
63. Paterson JL, Reynolds AC, Ferguson SA, Dawson D. Sleep and obsessive-compulsive disorder (OCD). Sleep Med Rev. 2013;17(6):465–74. [PubMed: 23499210]
64. Sharma V Role of sleep deprivation in the causation of postpartum obsessive-compulsive disorder. Med Hypotheses. 2019;122:58–61. [PubMed: 30593425]
65. Obeysekare JL, Cohen ZL, Coles ME, Pearlstein TB, Monzon C, Flynn EE, et al. Delayed sleep timing and circadian rhythms in pregnancy and transdiagnostic symptoms associated with postpartum depression. Transl Psychiatry. 2020;10(1):14. [PubMed: 32066689]
66. Tounkara F, Sapkota RP, Brunet A. Methodological limitations of a transdiagnostic study on postpartum depression. Transl Psychiatry. 2021;11(1):289. [PubMed: 34001854]
67. Timpano KR, Carbonella JY, Bernert RA, Schmidt NB. Obsessive compulsive symptoms and sleep difficulties: exploring the unique relationship between insomnia and obsessions. J Psychiatr Res. 2014;57:101–7. [PubMed: 25038630]
68. Burger M, Hoosain M, Einspieler C, Unger M, Niehaus D. Maternal perinatal mental health and infant and toddler neurodevelopment - evidence from low and middle-income countries. A systematic review J Affect Disord. 2020;268:158–72. [PubMed: 32174474]
69. Hoffman C, Dunn DM, Njoroge WFM. Impact of Postpartum mental illness upon infant development. Curr Psychiatry Rep. 2017;19(12):100. [PubMed: 29105008]
70. Lautarescu A, Craig MC, Glover V. Prenatal stress: effects on fetal and child brain development. Int Rev Neurobiol. 2020;150:17–40. [PubMed: 32204831]
71. Power J, van IM, Lewis AJ, Chen W, Galbally M. Maternal perinatal depression and child executive function: A systematic review and meta-analysis. J Affect Disord. 2021;291:218–34. [PubMed: 34049191]
72. Smith A, Twynstra J, Seabrook JA. Antenatal depression and off-spring health outcomes. Obstet Med. 2020;13(2):55–61. [PubMed: 32714436]
73. Koran LM, Hanna GL, Hollander E, Nestadt G, Simpson HB, American PA. Practice guideline for the treatment of patients with obsessive-compulsive disorder. Am J Psychiatry. 2007;164(7 Suppl):5–53.
74. Fisher PL, Wells A. How effective are cognitive and behavioral treatments for obsessive-compulsive disorder? A clinical significance analysis. Behav Res Ther. 2005;43(12):1543–58. [PubMed: 16239151]
75. Nakatani E, Nakagawa A, Nakao T, Yoshizato C, Nabeyama M, Kudo A, et al. A randomized controlled trial of Japanese patients with obsessive-compulsive disorder–effectiveness of behavior therapy and fluvoxamine. Psychother Psychosom. 2005;74(5):269–76. [PubMed: 16088264]
76. Rothbaum BO, Shahar F. Behavioral treatment of obsessive-compulsive disorder in a naturalistic setting. Cogn Behav Pract. 2000;7(3):262–70.
77. Challacombe F, Salkovskis P. A preliminary investigation of the impact of maternal obsessive-compulsive disorder and panic disorder on parenting and children. J Anxiety Disord. 2009;23(7):848–57. [PubMed: 19464141]
78. Christian LM, Storch EA. Cognitive behavioral treatment of postpartum onset: obsessive compulsive disorder with aggressive obsessions. Clin Case Stud. 2009;8(1):72–83.
79. Misri S, Reebye P, Corral M, Milis L. The use of paroxetine and cognitive-behavioral therapy in postpartum depression and anxiety: a randomized controlled trial. J Clin Psychiatry. 2004;65(9):1236–41. [PubMed: 15367052]

80. Timpano KR, Abramowitz JS, Mahaffey BL, Mitchell MA, Schmidt NB. Efficacy of a prevention program for postpartum obsessive-compulsive symptoms. J Psychiatr Res. 2011;45(11):1511–7. [PubMed: 21764404]
81. Challacombe FL, Salkovskis PM. Intensive cognitive-behavioural treatment for women with postnatal obsessive-compulsive disorder: a consecutive case series. Behav Res Ther. 2011;49(6–7):422–6. [PubMed: 21489404]
82. Challacombe FL, Salkovskis PM, Woolgar M, Wilkinson EL, Read J, Acheson R. A pilot randomized controlled trial of timeintensive cognitive-behaviour therapy for postpartum obsessive-compulsive disorder: effects on maternal symptoms, mother-infant interactions and attachment. Psychol Med. 2017;47(8):1478–88. [PubMed: 28137316]
83. Dougherty DD, Jameson M, Deckersbach T, Loh R, Thompson-Hollands J, Jenike M, et al. Open-label study of high (30 mg) and moderate (20 mg) dose escitalopram for the treatment of obsessive-compulsive disorder. Int Clin Psychopharmacol. 2009;24(6):306–11. [PubMed: 19730388]
84. Pampaloni I, Sivakumaran T, Hawley CJ, Al Allaq A, Farrow J, Nelson S, et al. High-dose selective serotonin reuptake inhibitors in OCD: a systematic retrospective case notes survey. J Psychopharmacol. 2010;24(10):1439–45. [PubMed: 19351803]
85. Stein DJ, Andersen EW, Tonnoir B, Fineberg N. Escitalopram in obsessive-compulsive disorder: a randomized, placebo-controlled, paroxetine-referenced, fixed-dose, 24-week study. Curr Med Res Opin. 2007;23(4):701–11. [PubMed: 17407626]
86. Bystritsky A, Ackerman DL, Rosen RM, Vapnik T, Gorbis E, Maidment KM, et al. Augmentation of serotonin reuptake inhibitors in refractory obsessive-compulsive disorder using adjunctive olanzapine: a placebo-controlled trial. J Clin Psychiatry. 2004;65(4):565–8. [PubMed: 15119922]
87. Denys D, van der Wee N, van Megen HJ, Westenberg HG. A double blind comparison of venlafaxine and paroxetine in obsessive-compulsive disorder. J Clin Psychopharmacol. 2003;23(6):568–75. [PubMed: 14624187]
88. Denys D, van Megen HJ, van der Wee N, Westenberg HG. A double-blind switch study of paroxetine and venlafaxine in obsessive-compulsive disorder. J Clin Psychiatry. 2004;65(1):37–43.
89. Erzegovesi S, Guglielmo E, Siliprandi F, Bellodi L. Low-dose risperidone augmentation of fluvoxamine treatment in obsessive-compulsive disorder: a double-blind, placebo-controlled study. Eur Neuropsychopharmacol. 2005;15(1):69–74. [PubMed: 15572275]
90. McDougle CJ, Epperson CN, Pelton GH, Wasylink S, Price LH. A double-blind, placebo-controlled study of risperidone addition in serotonin reuptake inhibitor-refractory obsessive-compulsive disorder. Arch Gen Psychiatry. 2000;57(8):794–801. [PubMed: 10920469]
91. McDougle CJ, Goodman WK, Leckman JF, Lee NC, Heninger GR, Price LH. Haloperidol addition in fluvoxamine-refractory obsessive-compulsive disorder. A double-blind, placebo-controlled study in patients with and without tics. Arch Gen Psychiatry. 1994;51(4):302–8. [PubMed: 8161290]
92. Selvi Y, Atli A, Aydin A, Besiroglu L, Ozdemir P, Ozdemir O. The comparison of aripiprazole and risperidone augmentation in selective serotonin reuptake inhibitor-refractory obsessivecompulsive disorder: a single-blind, randomised study. Hum Psychopharmacol. 2011;26(1):51–7. [PubMed: 21308781]
93. Arnold LM. A case series of women with postpartum-onset obsessive-compulsive disorder. Prim Care Companion J Clin Psychiatry. 1999;1(4):103–8. [PubMed: 15014682]
94. Buttolph M, Holland A. Obsessive-compulsive disorders in pregnancy and childbirth. Obsessive-compulsive disorder: theory and management, 2nd ed Chicago: Yearbook Medical Publishers. 1990:89–95.
95. Sichel DA, Cohen LS, Dimmock JA, Rosenbaum JF. Postpartum obsessive compulsive disorder: a case series. J Clin Psychiatry. 1993;54(4):156–9. [PubMed: 8486594]

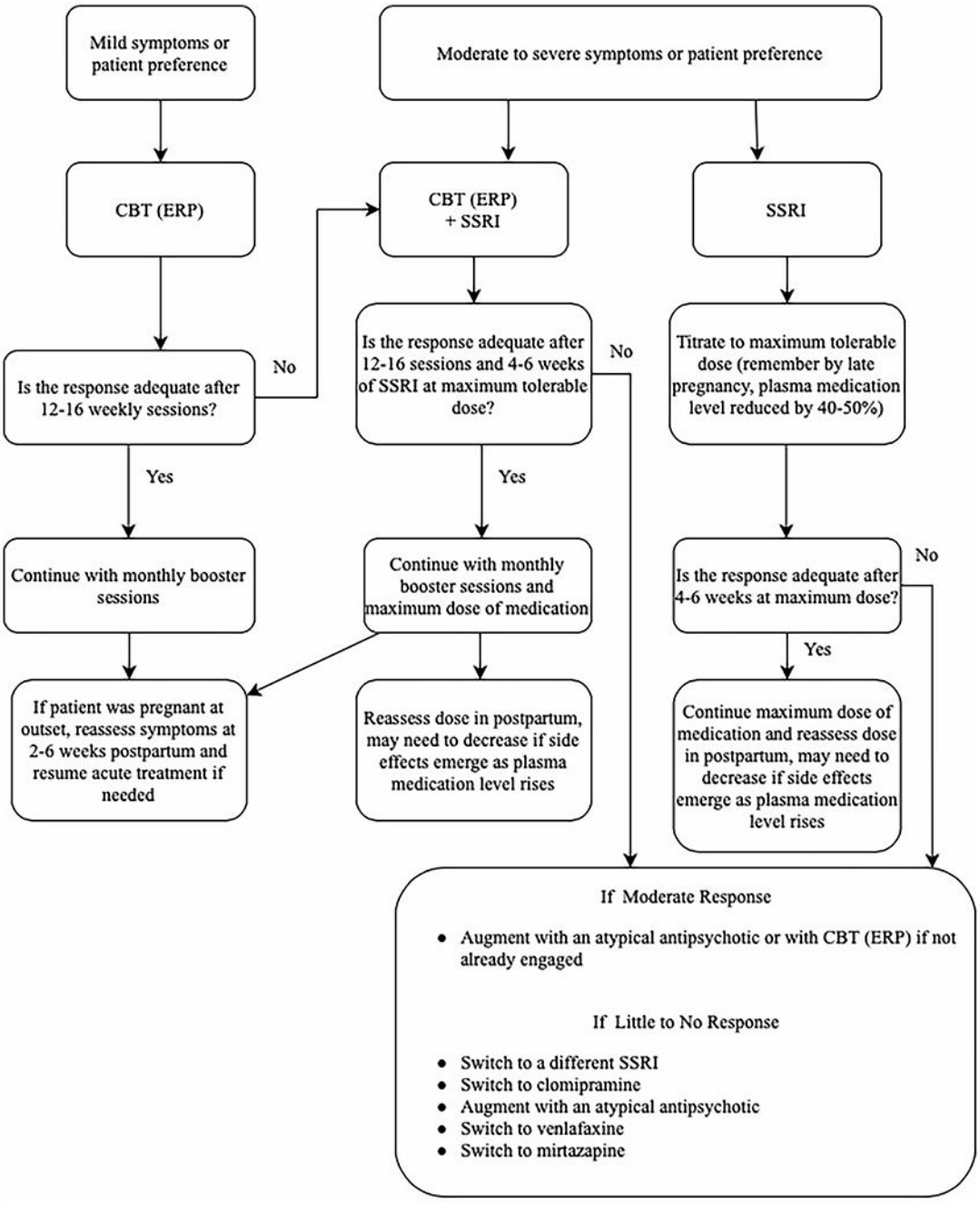


**Fig. 1.**

Treatment algorithm for perinatal OCD. From Hutner et al. eds., *The APA Textbook of Women's Reproductive Mental Health (Washington, DC: APA Publishing, 2021)*

**Table 1**

Thoughts of intrusive harm to the child: distinguishing between obsessions and delusions

| Obsessions | Delusions |
|---|---|
| Intrusive thoughts are unwanted and extremely distressing (ego-dystonic) | Intrusive thoughts may be unbidden but do not cause significant distress (ego-syntonic) |
| Can be sexual, religious, or violent | Can also be sexual, religious, or violent; content often bizarre or unusual |
| Patient has no desire to act on thoughts | Patient may want to or feel compelled to act on thoughts |
| Patient may engage in avoidance or in checking/reassuring compulsions to ease distress | No compulsions |
| Preserved insight | Poor insight, distortion of reality |
| Example: Mother has intrusive thoughts about throwing baby out the window. She locks all windows, closes blinds, repeatedly checks locks, and refuses to go to the side of the room where windows are. | Example: Mother believes child has sinned and that God has commanded mother to drop child out the window to punish this sin. |