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Infant-Related Intrusive Thoughts of Harm in the Postpartum Period: A Critical Review

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ABSTRACT

Background: Besides the expected warm and joyful thoughts, a new mother can be disturbed by sudden frightening thoughts or images of harm done to her baby: harming intrusions, an obsessive phenomenon. Its high prevalence and possible consequences in functioning and in mother-child bonding makes it desirable that clinicians are well informed regarding the current state of knowledge about harming intrusions.

Objective: To provide a comprehensive review of all studies that have investigated harming intrusions in postpartum women.

Data Sources: A systematic search was performed for primary (MEDLINE, PsycINFO) and secondary (Cochrane Library, National Guideline Clearinghouse, American Psychiatric Association) literature, with data range from inception to April 2015. To provide a complete overview, the approach of the topic by Medical Subject Headings (MeSH) terms and keywords was broad.

Study Selection: Studies in Dutch or English with a clear description of method, covering 1 of our main domains of interest—prevalence, assessment, differential diagnosis, etiology, consequences, and treatment—were selected.

Data Extraction: Two authors extracted quantitative and qualitative data fitting in the domains of interest.

Results and Conclusions: Fifty articles were included. The prevalence of harming intrusions is up to 100% in both women with and without psychiatric disorders. Stress and cognitive misinterpretation are important keys in its appearance and severity. Literature consistently states that isolated harming intrusions contain no increased risk of violence; instead, compulsive behavior is very common. Psychoeducation is found to release a lot of distress; so might cognitive-behavioral therapy and psychotropic medications.

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A large majority of postpartum women experience intrusive thoughts of some sort of harm that affects their newborn child.[1–3] Intrusive thoughts refers to unwanted, uncontrollable thoughts or images that suddenly occur in the mind.[4] They are experienced by most people from time to time[2,5] and are often evoked by external or internal emotional cues. They occur at higher rates during times of stress[6] and are therefore also quite common in the postpartum period.[7] Their content is often related to one's current concerns, which explains why intrusive thoughts in new mothers particularly involve infant harm.[1,7,8] We refer to this category of thoughts in new mothers as infant-related harming intrusions, further called harming intrusions. "Is my baby still breathing?" or "Could I accidentally drop my baby?" are common examples of passive harming intrusions, in which the infant is harmed without active interference of the mother or merely by accident.[9] A woman might also be disturbed by thoughts or images in which she actively harms her infant. An example of such an active harming intrusion is "What if I smothered my baby with a pillow?"

Passive as well as active harming intrusions arise in both healthy mothers and mothers suffering from psychiatric disorders. Active harming intrusions seem to contrast with the natural protective task of a parent[10,11]; active intrusive thoughts typically conflict with someone's moral values and frequently involve aggressive or sexual impulses.[3,6] Active intrusive thoughts are called ego-dystonic because one is aware of the conflict between this thought and one's self- and world-concept, which elicits distress or anxiety.[12] Ego-syntonic thoughts, on the other hand, are in tune with one's current sense of reality and mood and so cause no such inner conflict. This term *ego-syntonic* is mainly used for psychotic thoughts, but may also refer to suicidal ideation and excessive worrying.

Intrusive thoughts are on a continuum with clinical obsessions that occur in obsessive-compulsive disorder (OCD),[5,10] differing mainly in severity of symptoms. Severity depends on the frequency and time consumed by intrusions and the amount of distress and functional impairment that the intrusions cause.[4,13] Active intrusive thoughts tend to shift toward clinical obsessions when one misinterprets these thoughts as threatening and meaningful.[5] These catastrophic interpretations cause anxiety and predispose the mother to behavioral or cognitive rituals called compulsions to reduce the anxiety, such as checking if the baby is still breathing or avoiding being alone with the baby, which might disturb mother-child bonding.[14,15] Despite the significant distress, detrimental behavioral consequences, and high prevalence, many mothers and even medical professionals are unfamiliar with the phenomenon of postpartum harming intrusions, which contributes to the mother's feelings of shame, guilt, and inadequate support.

Several studies have investigated harming intrusions in postpartum women, representing a wide variety in study design, population,

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Clinical Points

- Owing to the high prevalence of postpartum harming intrusions and their possible consequences for both mother and child, professionals should be familiar with this obsessive phenomenon in order to provide sufficient support and reduce consequences.
- Treatment according to the general guideline for obsessive-compulsive disorder (OCD) tends to be successful in patients with postpartum OCD and may extend to postpartum harming intrusions.

sample size, and context in which harming intrusions have been studied. The aim of this review article is to provide a coherent and critical review of the currently available literature on postpartum harming intrusions, to identify relevant information for clinicians, and to address deficits in the literature. We therefore performed a systematic search for studies that investigated postpartum harming intrusions.

METHODS

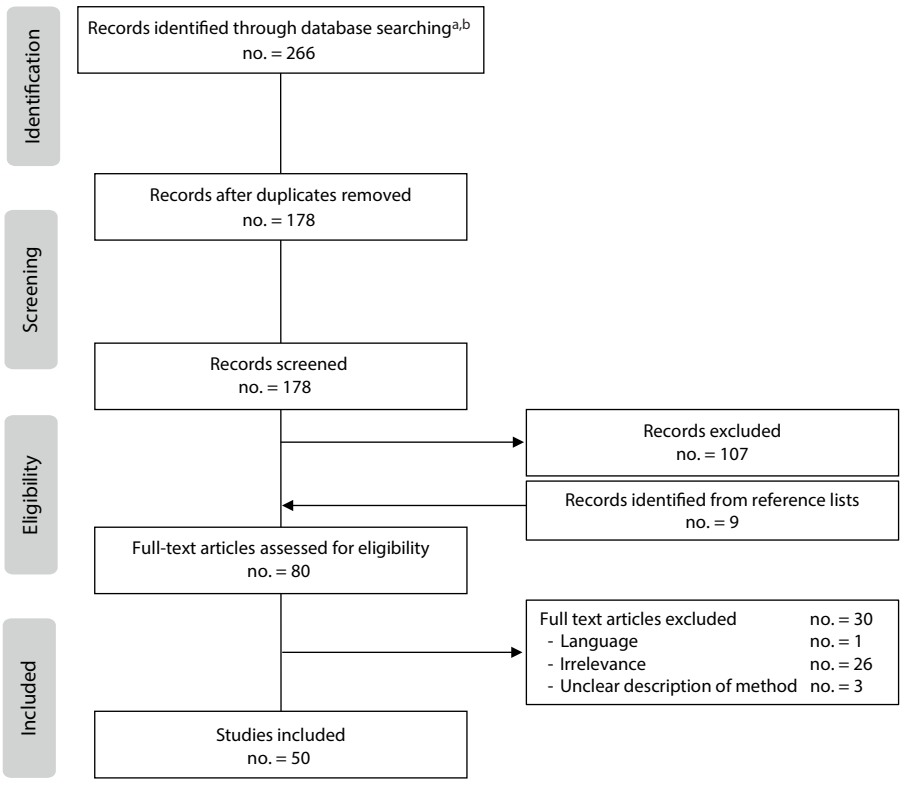
Data Sources

A systematic search was performed for primary (MEDLINE, PsycINFO) and secondary (Cochrane Library, National Guideline Clearinghouse, American Psychiatric Association [APA]) literature published up to April 2015. Because sparsity was assumed and different terms are used for the phenomenon of harming intrusions, the approach to the topic was broad, using the National Library of Medicine's Medical Subject Headings (MeSH) terms (*obsessive-compulsive disorder*) AND (*postpartum/peripartum period* OR *pregnancy*) AND (*child* OR *infant*, *newborn*) OR the following keywords and synonyms: *postpartum* AND *infant* AND *harm* AND *intrusion*. Additional articles were identified from the bibliography of articles found. Figure 1 shows the search flow diagram.

Study Selection

One hundred seventy-eight articles were identified by this search method, of which 71 remained after screening of title and abstract. The full text of these 71 articles, along with 9 articles identified from the reference lists, was critically appraised using the Cochrane Collaboration's tool for assessing the risk of bias.[16] The final inclusion criteria were (1) publication in English or Dutch; (2) a clear description of method; and (3) investigation of 1 of our main domains of interest: prevalence, assessment, differential diagnosis, etiology, consequences, and treatment. Finally 50 studies (listed in Table 1) were included, among which 45 original studies were used as primary sources and 5 review

Figure 1. Search Flow Diagram



[a]Medical Subject Headings (MeSH): *infant, newborn, and child, obsessive-compulsive disorder, peripartum period, postpartum period, pregnancy*.
[b]Keywords: *accident, aggression, baby, harm, infanticide, intrusion, neonaticide, obsession, preoccupation, rumination, violence, worry*.

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Table 1. Study Data

Study, First Author, Year, Ref	Study Design	N (Control Group)	Objective
Assessment			
1. Chandra, 2002[17]	Prospective cohort study	49	To examine infanticidal ideas and behavior in postpartum women
2. Lord, 2011[18]	Cross-sectional study	162	Piloting the perinatal obsessive-compulsive scale
3. Friedman, 2008[19]	Cross-sectional study	220	To study the likelihood of psychiatrists to ask for filicidal thoughts
4. Booth, 2014[20]	Cross-sectional study	43	To investigate psychiatrists' knowledge on harming intrusions
Prevalence			
5. Fairbrother, 2008[3]	Prospective cohort study	98	To assess phenomenology and prevalence of harming intrusions
6. Abramowitz, 2003[1]	Prospective cohort study	77 women, 40 men	To assess the prevalence and phenomenology of harming intrusions
7. Leckman, 1999[10]	Prospective cohort study	42 women, 42 men	To focus on early parental preoccupations and behaviors
8. Abramowitz, 2010[15]	Cross-sectional study	60	Delineating the relationship between postpartum anxiety and mood
Differential diagnosis			
9. Jennings, 1999[14]	Cross-sectional study	100 (46)	Examining prevalence of harming intrusions in depressed mothers
10. Humenik, 2007[21]	Cross-sectional study	49	Exploring the relationship between mood and harming intrusions
11. Uguz, 2007[22]	Prospective cohort study	302 (33)	To compare characteristics of OCD with and without postpartum onset
12. Abramowitz, 2003[7]	Review article	NM	To review the available research on postpartum OCD
13. Brandes, 2004[23]	Review article	No. studies: NM	Describing phenomenology and diagnosis of postpartum OCD
14. Ross, 2006[24]	Review article	No. studies: NM	To review literature related to postpartum anxiety disorders
15. Speisman, 2011[25]	Review article	No. studies: NM	To synthesize the extant literature on postpartum OCD
16. Hall, 2008[26]	Cross-sectional study	182	Exploring the link between sociodemographics and harming intrusions
17. Hall, 2006[27]	Cross-sectional study	158	To investigate prevalence of negative thoughts in nondepressed mothers
18. Wisner, 1999[8]	Cross-sectional study	37 (28)	To compare OCD in depression with/without postpartum onset
19. Barr, 2008[28]	Case series	15	Exploring thoughts of infanticide in postpartum depressed women
20. Chaudron, 2010[29]	Prospective cohort study	44	To describe the phenomenology of postpartum OCD
21. Russell, 2013[30]	Meta-analysis	No. studies: 19	To provide an estimate of OCD prevalence in pregnancy and puerperium
22. Uguz, 2007[31]	Cross-sectional study	434 (58)	To examine OCD during the third trimester of pregnancy
23. Zambaldi, 2009[32]	Cross-sectional study	400	To examine characteristics of postpartum OCD
24. Uguz, 2008[33]	Case series	11	To report about the long-term course of postpartum OCD
25. Tuzer, 2010[34]	Case report	1	To describe the case of a mother who picks her child's skin
26. Chandra, 2006[35]	Cross-sectional study	105	To study delusions toward the infant
Etiology			
27. Abramowitz, 2006[2]	Prospective cohort study	43 (42)	To evaluate the role of cognitive factors in the pathogenesis of OCD
28. Gutiérrez-Zotes, 2013[36]	Prospective cohort study	137	To assess whether personality characteristics predict harming intrusions
29. Fairbrother, 2007[12]	Review article	No. included studies: NM	Describing the nature of postpartum OCD
30. Larsen, 2006[37]	Cross-sectional study	77 (40)	To examine strategies parents use to manage harming intrusions
31. Fairbrother, 2015[6]	Randomized controlled trial	49 (49)	To assess infant crying as a trigger for harming intrusions
32. Levitzky, 2000[38]	Cross-sectional study	23	Examining the impact of infant colic on the emotional state of mothers
33. Labad, 2011[39]	Prospective cohort study	117	To study whether HPA-axis hormones are related to harming intrusions
34. Lord, 2011[40]	Nonrandomized controlled trial	8 (10)	Comparing the stress response in postpartum women with/without OCD
35. Flaisher-Grinberg, 2009[41]	Animal trial	NM	To test the role for ovarian hormones in OCD in rats
36. Labad, 2005[42]	Case control study	46	To assess the relationship between reproductive cycle events and OCD
Consequences			
37. Murray, 2012[43]	Case series	6	Exploring active harming intrusions in postpartum women
38. Santos, 2014[44]	Case series	15	Exploring experiences of mothering in postpartum depressed women
Treatment			
39. Arnold, 1999[45]	Case series	7	To explore the effect of fluvoxamine in postpartum OCD
40. Hudak, 2012[46]	Case report	1	Presenting a case of harming intrusions
41. Einarson, 2006[47]	Case series	3	Describing 3 cases of excessively worrying during pregnancy
42. Sichel, 1993[48]	Case series	15	To bring under attention OCD during pregnancy and puerperium
43. Abramowitz, 2001[49]	Case series	4	To focus on OCD in new fathers
44. Chapman, 1996[50]	Case series	16	To report cases with both infanticidal obsessions and imminent psychosis
45. Hertzberg, 1997[51]	Case report	1	To report a case of recurrent anxiety during pregnancy and puerperium
46. Misri, 2004[52]	Nonrandomized controlled trial	17	To evaluate the response to quetiapine augmentation in postpartum OCD
47. Christian, 2009[53]	Case series	1	To describe the application of CBT in postpartum OCD
48. Timpano, 2011[54]	Randomized controlled trial	38 (33)	Examining a CBT prevention program for postpartum OCD
49. Challacombe, 2011[55]	Case series	6	To describe the application of intensive CBT in women with postpartum OCD
50. Chelmow, 1997[56]	Case report	1	To report OCD in pregnancy

Abbreviations: CBT = cognitive-behavioral therapy, HPA = hypothalamic-pituitary-adrenal, NM = not mentioned, OCD = obsessive-compulsive disorder, Ref = reference.

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Table 2. Harming Intrusions in Healthy Postpartum Women

First Author, Year, Ref	N	Measure Instrument	Weeks Postpartum	Prevalence of Passive HI (%)	Prevalence of Active HI (%)	Main Content of HI
Fairbrother, 2008[3]	100	PII[3]	4 12	100 (100) 95 (95)	50 (50) 19 (19)	*(Active harming)* Screaming Shaking Giving the baby away Hitting Dropping/throwing Touching baby's genitals
Abramowitz, 2006[2]	43	PTBC[2]	12	39 (91)	14 (33)	Accidents Suffocation/SIDS Contamination/illness Losing the baby Active harm Sexual content
Abramowitz, 2003[1]	77	Survey on thoughts[1]	16	53 (69)	19 (21)	Suffocation/SIDS Accidents Active harm Losing the baby Illness/contamination Sexual content

Abbreviations: HI = harming intrusions, PII = Postpartum Intrusions Interview, PTBC = Postpartum Thoughts and Behaviors Checklist, Ref = reference, SIDS = sudden infant death syndrome.

articles were used to provide background information. Both the search and the critical appraisal of articles were independently conducted by 2 authors (E.C.B. and P.F.E.).

Data Extraction

Two authors (E.C.B. and P.F.E.) reviewed eligible articles and extracted quantitative (population, assessment method, risk of bias) and qualitative data from the previously mentioned main domains of interest.

RESULTS

Fifty articles were identified through our search strategy. We report the results of these studies, sorted in subheadings according to our defined areas of interest.

Assessment

The prevalence of harming intrusions and especially active intrusions is probably underestimated because women are unlikely to report them spontaneously, due to feelings of shame, guilt, or even fear of being reported to child welfare (Table 1, studies 1 and 9).[14,17] Therefore, professionals should actively screen for harming intrusions with explicit questions and examples. The severity of the harming intrusions should also be assessed by estimating frequency, duration, behavioral consequences, and the amount of distress caused by the intrusions. Instruments might be helpful in this active screening.

We found several instruments used for the assessment of postpartum harming intrusions. Most studies use general instruments such as the semistructured interview of the Yale-Brown Obsessive Compulsive Scale (Y-BOCS)[57] or self-report questionnaires such as the Obsessive-Compulsive Inventory (OCI)[58] and the Florida Obsessive-Compulsive Inventory (FOCI).[59] These instruments have not been validated for assessment in the postpartum period, though, and are not specific for harming intrusions. Therefore, 4 studies created customized instruments such as the Perinatal Obsessive-Compulsive Scale (POCS) (Table 1, study 2),[18] the Postpartum Thoughts and Behaviors Checklist (PTBC) (Table 1, study 27),[2] the Child Thoughts Inventory (CTI) (Table 1, study 10),[21] and the Postpartum Intrusions Interview (PII) (Table 1, study 5),[3] based on the Y-BOCS and the FOCI.

The POCS, a self-report scale of perinatal obsessions and compulsions, is the only validated instrument. The POCS includes 19 thoughts and 14 behaviors and contains both a severity and an interference scale.

The CTI is a 24-question self-report inventory with the first part assessing negative and unwanted thoughts of mothers about their children and themselves in the past month and the second part addressing how often and how stressful these intrusions were, rated on a 4-point severity scale. The PTBC is a semistructured interview that investigates the content of postpartum intrusions and neutralizing strategies with a checklist of 10 common intrusions and 14 neutralizing strategies. The PII is also a semistructured interview modeled after the Y-BOCS that distinguishes passive and active harming intrusions, along with the mothers' affective and behavioral responses to these intrusions. These 3 instruments measure both the presence and severity of harming intrusions, but none of them has been validated. We will now discuss the prevalence numbers that were found by the mentioned instruments.

Prevalence

The prevalence of harming intrusions has mainly been studied among healthy and depressed postpartum women.

Harming intrusions in healthy new mothers. Three studies[1–3] (Table 1, studies 5, 6, and 27) investigated the

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prevalence of harming intrusions in relatively large samples of healthy postpartum women, of which 2 studies[1,2] also investigated prevalence among fathers. Fairbrother and Woody[3] (Table 1, study 5) investigated 100 healthy postpartum women using the PII. At 4 weeks postpartum, all women reported having at least 1 passive harming intrusion, while 50% reported active harming intrusions (43% thoughts of physical harm, 7% thoughts of screaming at the infant). At 12 weeks, 19% of the women still reported active harming intrusions.

Abramowitz and colleagues[1] (Table 1, study 6) interviewed 117 healthy parents (77 mothers, 40 fathers) at 16 weeks postpartum and found that 69% of mothers and 58% of fathers experienced harming intrusions; 21% of the mothers and 23% of fathers reported active harming intrusions. Based on examples from these parents, the PTBC was constructed and used in a follow-up study. Another study[2] (Table 1, study 27) investigated 85 healthy parents (43 mothers, 42 fathers) 12 weeks postpartum, of whom 91% of mothers and 88% of fathers had experienced harming intrusions since the baby's birth; 33% of mothers and 31% of fathers reported active harming intrusions.

It can be concluded that prevalence rates of both passive and active harming intrusions are high, with rates that may differ somewhat according to the assessment method. Table 2 gives an overview of the prevalence rates and common examples of harming intrusions in healthy postpartum women. The prevalence of harming intrusions is highest in the first weeks postpartum, after which it slowly decreases (Table 1, studies 5, 9, and 28).[3,14,36] This peak (time of onset of harming intrusions) is in accordance with the peak time of onset of postpartum OCD (Table 1, studies 11, 39, and 40).[22,45,46] Harming intrusions are also known to occur during pregnancy, when mothers focus on concerns about the unborn child (Table 1, studies 7 and 41).[10,47]

Harming intrusions in depressed postpartum women. Depression and obsessions frequently co-occur postpartum (Table 1, studies 10, 12, and 29),[7,12,21] and 2 studies[14,15] (Table 1, studies 8 and 9) explored whether depression is associated with an increased prevalence of harming intrusions among postpartum women. Abramowitz and colleagues[15] (Table 1, study 8) investigated 60 postpartum depressed women, of whom 87% reported having harming intrusions as assessed with the PTBC, which is comparable to the prevalence among healthy mothers assessed with the PTBC. Although depression severity measured by the Edinburgh Postnatal Depression Scale[60] was not related to the prevalence of harming intrusions, it was related to the frequency and severity of harming intrusions. Jennings and colleagues[14] (Table 1, study 9) directly compared 100 mothers with major depression with 46 healthy mothers who were asked in a single self-report item on a questionnaire whether they experienced active harming intrusions. Of the depressed women, 41% had active harming intrusions at 9 months postpartum versus 7% of the healthy women. This finding suggests that depression may predispose to the experience of active harming intrusions, possibly by means of a protracted course of these intrusions, as the prevalence in the depressive group had not receded months after the general peak time of harming intrusions.

Differential Diagnosis

Four review articles[7,23–25] (Table 1, studies 12–15) on harming intrusions give suggestions on how to distinguish harming intrusions from other thoughts concerning infant harm, such as ego-syntonic depressive ruminations and psychotic thoughts. However, these review articles along with review articles on the conditions discussed next[7,12,46,61,62] also mention that obsession and these other thoughts frequently co-occur.

Postpartum depression. Harming intrusions are different from depressive thoughts in that the latter are pessimistic cognitions or ruminations and, unlike harming intrusions, tend to shift somewhat in content and have an ego-syntonic character (Table 1, studies 12 and 15).[7,25] Like intrusive thoughts, depressive thoughts in postpartum women often concern the infant or motherhood: "I am a bad mother" and "Being with my baby is boring" (Table 1, study 16).[26] These thoughts are also seen in both depressed and healthy postpartum women (Table 1, study 17).[27] As previously stated, harming intrusions in postpartum depression tend to be more severe (Table 1, studies 8 and 10).[15,21] Also, in comparison with nonpostpartum depression, intrusions are more likely to be aggressive (Table 1, study 18).[8]

Another important aspect related to infant harm is suicidal ideation. A case series[28] (Table 1, study 19) found that postpartum suicidal women may hold ego-syntonic beliefs that they cannot leave their baby behind and have the responsibility to take the baby with them into death. In this context, the results of a cross-sectional study[19] (Table 1, study 3) are worrying as only 58% of 220 questioned psychiatrists and psychiatric residents asked at least sometimes explicitly about filicidal thoughts in suicidal mothers.

Postpartum obsessive-compulsive disorder. As mentioned before, harming intrusions are hypothesized to be on a continuum with clinical obsessions, and clinical obsessions along with compulsions are the hallmark of OCD.[63] We retrieved 9 studies[7,22–25,29–32] (Table 1, studies 11–15 and 20–23) reporting prevalence rates as well as clinical features of postpartum OCD. The prevalence of OCD is consistently found to be higher in pregnant and postpartum women compared to women in the general population (Table 1, studies 11, 15, 20, and 23).[22,25,29,32] In a recent meta-analysis[30] (Table 1, study 21), the prevalence of OCD was estimated at 1.1% in the general population, while it increased to 2.1% in pregnant women and even 2.4% in postpartum women. Content of OCD symptoms in the postpartum period, compared to other periods, tends to be more aggressive[22,25] (Table 1, studies 11 and 15) and predominantly involves infant harm (Table 1, studies 12, 14, 15, and 21).[7,24,25,30] OCD in the postpartum period may present the new onset of the disorder, but it may also involve a preexistent disorder or the exacerbation of a preexistent disorder in which the content of OCD symptoms shifts

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toward the infant's health (Table 1, studies 15 and 42).[25,48] Poor insight subtypes of OCD can complicate diagnosis and risk assessment.

As mentioned in the Prevalence section, studies show that postpartum-onset OCD shares its peak time of onset with harming intrusions, during the first month, but unlike isolated harming intrusions, its course is not found to be self-limiting as illustrated in the next study[33] (Table 1, study 24). Of 9 women with postpartum onset OCD who did not receive any treatment, 8 (89%) still met the Structured Clinical Interview for DSM-IV Axis I Disorders, Clinician Version,[63] criteria for OCD 12 months postpartum, and Y-BOCS scores[57] even increased in 5 of them (63%). Although it is only 1 small study, the results support the likelihood that postpartum OCD follows the same non–self-limiting course as OCD in other periods.[64]

Impaired impulse control. There were no studies found on postpartum harming intrusions in the context of impulse-control disorders (ICDs), characterized by impaired inhibition and repetitive impulsive behavior.[65] Impulsive and compulsive behavior frequently co-occur,[62,66] which has led to introduction of the term *impulsive OCD*.[66] This is relevant with regard to risk assessment of active harming intrusions, since patients known to have poor impulse regulation might express grounded concerns about controlling their aggressive impulses toward their child. Impaired impulse regulation (ICD, cluster B personality disorder) should therefore be considered as a differential or comorbid condition. Although (as with impulsive OCD) postpartum harming obsessions are found to be more aggressive, we found no association to more aggressive behavior.[66]

The frequent co-occurrence of impulsive and compulsive behavior is also reflected in the move of some former ICDs not elsewhere classified (for example, skin picking and trichotillomania) to the chapter "Obsessive-Compulsive and Related Disorders" in *DSM-5*,[67] since, unlike typical ICDs, this group is not considered ego-syntonic.[65,68] One case report[34] (Table 1, study 25) describes a mother suffering from skin picking since childhood who continued with picking the skins of her 2 children. The distinction between the impulsive behavior in this case and compulsive behavior in obsessive phenomena like harming intrusions is the underlying drive.[65] Compulsions are performed to release fear in order to avoid risk, while impulsive behavior satisfies a progressive arousal and commonly causes harm to oneself or others.[65,66] After a short moment of satisfaction, typically regret follows.[65,68] Conceivably, a mother tormented by active harming intrusions might confuse her highly intrusive thoughts with an urge or wish to act.

Postpartum psychosis. Like obsessive and depressive thoughts, delusions in the postpartum period often involve the infant. Of 44 women with a postpartum psychotic episode arising from a range of different psychiatric disorders, 79% reported delusions concerning their infant (Table 1, study 26).[35] Incidents of child abuse were more common in this group, especially in the case of delusions of the baby being the devil, ill-fated, or someone else's. This finding contributes to the general notion that psychotic thoughts concerning infants pose a significant risk factor for infant harm or even death. Harming intrusions should be distinguished from delusional thoughts by their ego-dystonic character and the presence of other psychotic features like disturbed reality testing, hallucinations, or disoriented behavior (Table 1, studies 13 and 19),[23,28] with the important caveat that obsessive phenomena also occur in psychotic disorders.[61] Ego-syntonic delusional thoughts are typically not experienced as repugnant or concerning and therefore lack moral distress and compulsive behavior.

Etiology

Several studies on harming intrusions have explored their etiology, although etiology was the main point of interest in only a few of them; the effect of stress was the main focus. Like other intrusions, harming intrusions are often triggered by external or internal emotional cues. Cues from the infant are found to be a major trigger, suggesting that looking at the infant might act as a strong reminder of the baby's vulnerability and the concomitant responsibility of the parent (Table 1, study 30).[37] Active harming intrusions were found to be especially triggered by stressful cues from the infant, as is nicely illustrated in several studies (Table 1, studies 19, 31, and 32).[6,28,38] In depth interviews with 15 depressed postpartum women revealed that these women were mostly afraid of their aggressive thoughts arising during times when the baby was restless (Table 1, study 19).[28] In an experimental setup, 98 healthy postpartum women were made to listen to infant sounds, either crying or cooing. Significantly more women listening to infant crying than cooing reported active harming intrusions (Table 1, study 31).[6] In another study,[38] among 23 healthy mothers of infants with colic syndrome (over 3 hours crying spells of unknown cause), 70% reported aggressive thoughts toward the infant during crying spells (Table 1, study 32), which is considerably higher than the expected prevalence of active harming intrusions in healthy mothers as described earlier. The important relationship between stress and active harming intrusions is also illustrated by a study of 100 healthy postpartum women[3] who were found to have more active harming intrusions when they experienced motherhood as more stressful (Table 1, study 5). The hypothesis that different levels of stress may lead to differences in prevalence in primiparous and multiparous mothers was not confirmed in a few small studies[6,14,21] (Table 1, studies 9, 10, and 31). Importantly, as these studies have not proven a causal relationship between stress and harming obsessions, it may also be the case that harming intrusions lead to the experience of stress.

Biological factors. Elaborating on the stress hypothesis, Labad and colleagues[39] (Table 1, study 33) have tried to investigate the relationship between endocrinologic measures of stress and harming intrusions. The hypothalamic-pituitary-adrenal axis (HPA-axis) hormones adrenocorticotropic hormone (ACTH), corticotropin-releasing hormone (CRH), and cortisol were measured in

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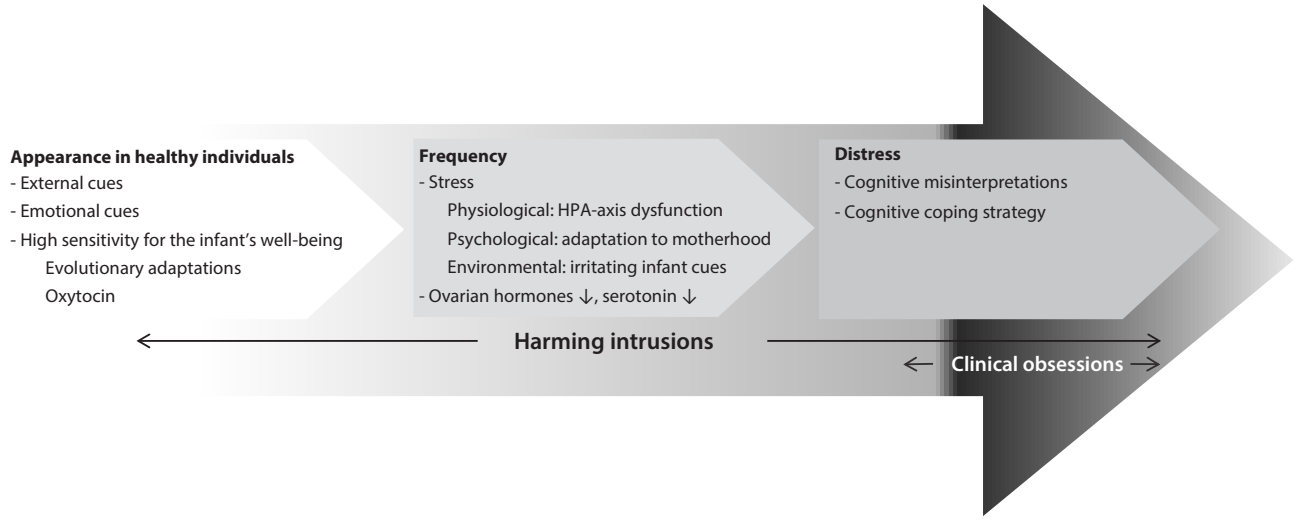
Figure 2. Etiology of Harming Intrusions[a]



[a]The continuum of harming intrusions. The x-axis represents the severity of symptoms and the etiologic factors contributing to a right shift.
Abbreviation: HPA = hypothalamic-pituitary-adrenal.
Symbol: ↓ = decreased.

132 women within 48 hours after delivery; 8 weeks later, these women were asked whether they had experienced harming intrusions in the past period. Postpartum plasma ACTH levels were higher for women who later reported having experienced harming intrusions, independent from symptoms of anxiety and depression. This suggests that harming intrusions are linked to dysregulation of the HPA-axis, which is also implicated in the etiology of postpartum depression and postpartum OCD (Table 1, studies 14, 33, and 34).[24,39,40]

The role of other hormones is far less explored, but some studies have implicated a role for oxytocin and ovarian hormones. The role of oxytocin is not fully understood, but it is generally acknowledged to be an important hormone in affiliation and parent-child bonding.[11] Oxytocin is released in both mothers and fathers during exposure to their offspring and in mothers during delivery and breastfeeding.[69] Oxytocin stimulates opiate release, as an intrinsic reward for interacting with the infant,[70] thereby facilitating parent-child bonding, which results in increased motivation to protect the infant[69] and heightened sensitivity for infant harm. Harming intrusions should be considered in the context of this heightened sensitivity, which also explains the distress that having such a thought or image of the harmed infant causes. As for ovarian hormones, their fall postpartum is associated with a fall in serotonin, which may partly explain the rise of OCD and depression (Table 1, studies 35 and 36).[41,42] Ovarian steroids have been found to bind neuronal receptors and alter synthesis, uptake, and release of neurotransmitters in nonhuman species.[71,72] Especially serotonin neurons are sensitive as they contain high levels of estrogen and progesterone receptors.[72] It is possible that this pathway of decreased serotonin synthesis after delivery may contribute to the rise of the obsessive phenomenon harming intrusions. Since harming intrusions are also frequently present in fathers (Table 1, studies 6, 27, and 43),[1,2,49] it is obvious that the decrease of ovarian hormones can only be a contributing factor.

Psychological factors. For decades, experts on OCD have pointed out that cognitive misinterpretations are the key factor for intrusive thoughts to shift toward clinical obsessions.[4,13] Thought-action fusion is a well-known example of a cognitive misinterpretation, comprising the believe that having a "bad" thought implies that you are a bad person or increases the likelihood of catastrophic events.[7,73] Several cognitive models have been formulated in which intrusions shift to clinical obsessions by these misinterpretations, including a specific model for infant-related harming intrusions (Table 1, study 29).[12] This model describes how every parent is vulnerable to misinterpret harming intrusions as threatening, due to their heightened sensitivity and sense of responsibility for the infant's well-being.[12]

Several studies[6,21,22,36,37] (Table 1, studies 10, 11, 28, 30, and 31) have investigated psychological factors that make parents more vulnerable. Seventy-five healthy new parents were asked what cognitive strategy they used when harming intrusions surfaced (Table 1, study 30).[37] Unlike seeking distraction and sharing thoughts with someone else, the strategies of worrying, self-punishment, and reappraisal (challenging the thought's validity) were positively related to severity of intrusions (measured by Y-BOCS). Reappraisal was somewhat unexpected, as it is a strategy regularly used in cognitive-behavioral therapy (CBT). Possibly the reappraised version of the intrusion is not always a less stressful one or it could mean that reappraisal is too active an approach, instead of leaving the thought meaningless. Cognitive strategy is strongly influenced by personality,

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and Uguz and colleagues[22] (Table 1, study 11) investigated the relationship between personality traits and obsessive phenomena among 302 postpartum women. Avoidant and obsessive-compulsive personality traits were significantly associated with OCD symptoms. Several other studies found a relation between severity of harming intrusions and personality traits, such as trait anger and empathy (Table 1, study 31),[6] negative self-image and prepartum anxiety (Table 1, study 10),[21] and impulsiveness (Table 1, study 28).[36] These findings concern small studies, however, and are not yet replicated by other studies. It can be concluded that one's cognitive style and coping at least partly define one's vulnerability for harming intrusions, although results are still too diverse and unspecific to identify a risk profile. Moreover, these relationships are based on cross-sectional studies, and, as for the relationship between stress and harming intrusion, it may also be the case that harming intrusions themselves affect cognitive style and coping, demanding prospective studies to clarify the direction of these effects (Figure 2).

Consequences

Risk of harm in active harming intrusions. Both mothers and clinicians who are unfamiliar with active harming intrusions may fear that a mother may act upon them (Table 1, studies 4 and 5).[3,20] Literature however consistently states that isolated harming intrusions contain no increased risk of violence since they are ego-dystonic and do not reflect one's actual wishes or intentions (Table 1, studies 12, 14, 15, 28, and 29).[7,12,24,25,36] Indeed, in the overwhelming amount of included case studies[43,45,46,49,52] (Table 1, studies 37, 39, 40, 43, and 46), there is no sign of aggressive acts. One study[3] (Table 1, study 5) directly examined the relationship between active harming intrusions and infant harm among 100 healthy women and found that at 4 weeks postpartum there was no difference in incidents of harsh parenting between women with and without active harming intrusions. In a small group of mothers who still reported active harming intrusions at 12 weeks, the incidence of harsh parenting was larger than for women without harming intrusions, although this difference was not significant. As stated above, evidence indicates that comorbid disorders such as psychosis or severe depression may increase the risk of infant harm (Table 1, study 41).[47] Although not investigated, this risk should also be considered in new parents with impulsive behavior disorder.

Effect on mothering. Harming intrusions and concomitant compulsive behavior can be time consuming and exhausting, leaving mothers less time and energy to attend to the needs of the baby. Compulsive behavior is common when experiencing harming intrusions. Of 100 healthy women, 99% reported that they modified their mothering behavior in response to passive and 71% to active harming intrusions. Compulsive behavior mostly consisted of checking or avoiding the infant or seeking distraction (Table 1, study 5),[3] which is also the pattern that is described in several case reports[28,46,49,53] (Table 1, studies 19, 40, 43, and 47). Avoidance is most likely when the mother considers herself to be the source of harm, whereas checking is primarily invoked by fear for harm from another source, ie, checking if the baby is still breathing or not letting anyone else take care of the baby. Both avoidance and overprotection may come at the expense of mother-infant bonding and infant development (Table 1, studies 8 and 9),[14,15] although frequency of avoiding and overprotective behavior differ widely across studies (Table 1, studies 8, 9, 30, and 38).[14,15,37,44] The chance of a more negative outcome most likely increases when harming intrusions become clinical obsessions, or with the presence of comorbid depression or psychosis.

Current State of Knowledge on Treatment Options

Even though isolated harming intrusions are found to decrease after the first weeks postpartum (Table 1, studies 5, 7, and 28),[3,10,36] they may cause enough distress to justify support. Out of the earlier mentioned evidence that especially depression and psychosis might change the course and outcome of harming intrusions (Table 1, studies 8, 10, 26, and 38),[15,21,35,44] the absence of comorbid disorders should be assessed as a first step. As a second step, literature consistently points out the relevance of psychoeducation in both pathological and nonpathological harming intrusions (Table 1, studies 6, 15, and 43).[1,25,49] Explaining to a mother that harming intrusions are common and unlikely to be acted upon can already reduce a large amount of her distress (Table 1, studies 9 and 40).[14,46] Psychoeducation is also found to be useful as a preventive strategy in a randomized controlled trial (Table 1, study 48).[54] Further treatment might follow when symptoms do not decrease after psychoeducation or in more severe cases, especially if symptom severity comes close to OCD, since OCD tends to follow a chronic course.[33,64]

As there are no specific treatment studies for isolated harming intrusions, we will discuss the few studies for treatment of postpartum OCD[45,47–50,52,55,56] (Table 1, studies 39, 41–44, 46, 49, and 50) as harming intrusions can best be regarded as a subsyndromal type of postpartum OCD. According to the APA guideline for OCD,[74] CBT and/or serotonergic antidepressants (SSRI, clomipramine) are first-line treatments for OCD. Although postpartum women have not been widely studied, there is no evidence that they will respond differently to these regular treatment options (Table 1, studies 12 and 13).[7,23] One case report[46] and 2 case series[53,55] reported having achieved remission of OCD in postpartum women by combining an SSRI and a CBT (Table 1, studies 40, 47, and 49). As for CBT without psychotropic medication, 1 case series[50] (Table 1, study 44) and 1 case report[49] (Table 1, study 43) reported positive results for CBT, with both studies highlighting the importance of exposure techniques. Concerning psychotropic medications without CBT, 3 studies[48,51,56] (Table 1, studies 42, 45, and 50) report full remission, whereas 1 study[45] (Table 1, study 39) reports partial effect. One study[52] investigated quetiapine augmentation in 14 postpartum OCD cases who failed to

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Table 3. Phased Plan of Treatment of Harming Intrusions

Assessment	• Ask for the presence of harming intrusions →*It is common for new mothers to have sudden, unwanted thoughts or images of harm done to her baby; this might be both by accident or actively caused by the mother herself. Have you ever experienced these so called harming intrusions? Can you give examples?* If negative, give examples and ask again next visit • Ask for compulsive behavior →*Did any behavioral changes, both avoidance and active behavior, come out of harming intrusions?* If negative, give examples, and ask again next visit • Ask for severity of both harming intrusions and compulsive behavior →*How often do they come in a week or a day? How much time do they consume? Do they interfere with life? Do they cause distress? Are they possible to resist?* • Distinguish ego-dystonic from ego-syntonic thoughts →*How do you feel about having these thoughts? Do they scare you? Do they arouse you? Do they feel like they are coming out of nowhere? Do you think they are likely to come true? Do these thoughts fit you?* • Exclude depression, psychosis, and impulse-control disorder
Step 1[a]	CBT-based psychoeducation • Prevalence • Improbability of acting on intrusions • Cognitive misinterpretations • Challenging unrealistic beliefs • Exposure techniques
Step 2[a]	CBT (cognitive misinterpretations, exposure techniques) or Pharmacotherapy (SSRI, clomipramine)
Step 3[a]	Combine CBT and pharmacotherapy
Step 4[a]	Consider augmentation of a second-generation antipsychotic (for example, quetiapine)

[a]Step 1 is based on references 1, 25, and 49; steps 2 and 3 are based on references 45–51, 55, and 56; step 4 is based on references 52 and 74.
Abbreviations: CBT = cognitive-behavioral therapy, SSRI = selective serotonin reuptake inhibitor.

respond to 8 weeks of SSRI/SNRI monotherapy and found partial reduction of symptoms (Table 1, study 46).

The above studies provide some evidence that CBT and/or psychotropic medications according to the general guideline[74] tend to be successful in postpartum patients with OCD, which may extend to postpartum harming intrusions. We found no trials directly comparing these treatments. Of course, lactation status should be taken into account in the choice for treatment. Relapse after discontinuation of medication or CBT is widely reported, with some patients relapsing directly after discontinuation (Table 1, studies 40, 42, and 47)[46,48,53] and others in their next pregnancy (Table 1, studies 45 and 50).[51,56] These case reports[51,56] describe the success of CBT booster sessions or resumption of psychotropic medication. The potential treatment options for harming intrusions are summarized in Table 3.

DISCUSSION

We provided a comprehensive review of the current knowledge about harming intrusions in postpartum women, a common obsessive phenomenon unfortunately unknown to many women and medical professionals.

The dominant limitation of this review is the mostly low level of evidence of the 50 studies on which it is based. Also, most studies differ in study population, study context, and method, making it difficult to compare or summarize the results.

Studies converge in a number of findings, however. As for prevalence of harming intrusions, we found high numbers in both healthy mothers and mothers with psychiatric disorders. Also, studies point out repeatedly that stress figures as a key factor in initiating harming intrusions, whereas in their maintenance and their shift to clinical obsessions, cognitive misinterpretations are found to be important. More than a concern for etiology, mothers and clinicians might be interested in whether harming intrusions contain actual risk. Literature consistently states that there is no evidence that mothers will act upon active harming intrusions. We would recommend, however, that clinicians carefully assess every unique case of harming intrusions, especially with respect to comorbid disorders such as psychosis or severe depression that may increase the risk of infant harm. Compulsive behavior, which might cause significant distress and come at the expense of the mother-child bond, should also be considered.

This review also identified a number of gaps in the current knowledge. More research on harming intrusions is needed, preferably in larger longitudinal studies, to better understand the natural course in healthy and disease states. For etiology, research into contributing factors such as personality characteristics and demographics is still inconclusive. Moreover, we found no study investigating the possible etiologic role of childhood trauma in mothers. Also, the link between harming intrusions and depression remains unclear. Depression may predispose to the experience of active harming intrusions, possibly by means of a protracted course of these intrusions, but more research is certainly needed to confirm this hypothesis.

From a clinical perspective, more knowledge about treatment and the consequences of harming intrusions for the infant is needed. Treatment is based on an insufficient amount of evidence and patient and clinician preference. By analogy to the relationship between postpartum blues and postpartum depression, in our opinion, postpartum harming intrusions can best be regarded as a subsyndromal counterpart of postpartum OCD, and there are some treatment studies in postpartum OCD. Although these are mostly case reports, with a high risk of report bias, they provide some evidence that treatment according to the general guideline for OCD tends to be successful in postpartum patients with OCD, which may extend to postpartum harming intrusions.

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REFERENCES

1. Abramowitz J, Schwartz S, Moore K. Obsessional thoughts in postpartum females and their partners: content, severity, and relationship with depression. *J Clin Psychol Med Settings*. 2003;10(3):157–164.
2. Abramowitz JS, Khandker M, Nelson CA, et al. The role of cognitive factors in the pathogenesis of obsessive-compulsive symptoms: a prospective study. *Behav Res Ther*. 2006;44(9):1361–1374.
3. Fairbrother N, Woody SR. New mothers' thoughts of harm related to the newborn. *Arch Women Ment Health*. 2008;11(3):221–229.
4. Clark DA, Purdon CL. The assessment of unwanted intrusive thoughts: a review and critique of the literature. *Behav Res Ther*. 1995;33(8):967–976.
5. Belloch A, Morillo C, Lucero M, et al. Intrusive thoughts in non-clinical subjects: the role of frequency and unpleasantness on appraisal ratings and control strategies. *Clin Psychol Psychother*. 2004;11(2):100–110.
6. Fairbrother N, Barr RG, Pauwels J, et al. Maternal thoughts of harm in response to infant crying: an experimental analysis. *Arch Women Ment Health*. 2015;18(3):447–455.
7. Abramowitz JS, Schwartz SA, Moore KM, et al. Obsessive-compulsive symptoms in pregnancy and the puerperium: a review of the literature. *J Anxiety Disord*. 2003;17(4):461–478.
8. Wisner KL, Peindl KS, Gigliotti T, et al. Obsessions and compulsions in women with postpartum depression. *J Clin Psychiatry*. 1999;60(3):176–180.
9. Kleiman K, Wenzel A. *Dropping the Baby—And Other Scary Thoughts*. New York, NY: Taylor and Francis Group; 2011.
10. Leckman JF, Mayes LC, Feldman R, et al. Early parental preoccupations and behaviors and their possible relationship to the symptoms of obsessive-compulsive disorder. *Acta Psychiatr Scand suppl*. 1999;396(S396):1–26.
11. Hahn-Holbrook J, Holbrook C, Haselton MG. Parental precaution: neurobiological means and adaptive ends. *Neurosci Biobehav Rev*. 2011;35(4):1052–1066.
12. Fairbrother N, Abramowitz JS. New parenthood as a risk factor for the development of obsessional problems. *Behav Res Ther*. 2007;45(9):2155–2163.
13. Clark DA. Depressive, anxious and intrusive thoughts in psychiatric inpatients and outpatients. *Behav Res Ther*. 1992;30(2):93–102.
14. Jennings KD, Ross S, Popper S, et al. Thoughts of harming infants in depressed and nondepressed mothers. *J Affect Disord*. 1999;54(1–2):21–28.
15. Abramowitz JS, Meltzer-Brody S, Leserman J, et al. Obsessional thoughts and compulsive behaviors in a sample of women with postpartum mood symptoms. *Arch Women Ment Health*. 2010;13(6):523–530.
16. Higgins JPT, Green S, eds. *Cochrane Handbook for Systematic Reviews of Interventions, Version 5.1.0* [updated March 2011]. The Cochrane Collaboration; 2011. Available from http://handbook.cochrane.org/.
17. Chandra PS, Venkatasubramanian G, Thomas T. Infanticidal ideas and infanticidal behavior in Indian women with severe postpartum psychiatric disorders. *J Nerv Ment Dis*. 2002;190(7):457–461.
18. Lord C, Rieder A, Hall GBC, et al. Piloting the perinatal obsessive-compulsive scale (POCS): development and validation. *J Anxiety Disord*. 2011;25(8):1079–1084.
19. Friedman SH, Sorrentino RM, Stankowski JE, et al. Psychiatrists' knowledge about maternal filicidal thoughts. *Compr Psychiatry*. 2008;49(1):106–110.
20. Booth BD, Friedman SH, Curry S, et al. Obsessions of child murder: underrecognized manifestations of obsessive-compulsive disorder. *J Am Acad Psychiatry Law*. 2014;42(1):66–74.
21. Humenik ALF, Fingerhut R. A pilot study assessing the relationship between child harming thoughts and postpartum depression. *J Clin Psychol Med Settings*. 2007;14(4):360–366.
22. Uguz F, Akman C, Kaya N, et al. Postpartum-onset obsessive-compulsive disorder: incidence, clinical features, and related factors. *J Clin Psychiatry*. 2007;68(1):132–138.
23. Brandes M, Soares CN, Cohen LS. Postpartum onset obsessive-compulsive disorder: diagnosis and management. *Arch Women Ment Health*. 2004;7(2):99–110.
24. Ross LE, McLean LM. Anxiety disorders during pregnancy and the postpartum period: a systematic review. *J Clin Psychiatry*. 2006;67(8):1285–1298.
25. Speisman BB, Storch EA, Abramowitz JS. Postpartum obsessive-compulsive disorder. *J Obstet Gynecol Neonatal Nurs*. 2011;40(6):680–690.
26. Hall PL, Holden S. Association of psychosocial and demographic factors with postpartum negative thoughts and appraisals. *J Perinat Neonatal Nurs*. 2008;22(4):275–281.
27. Hall PL, Wittkowski A. An exploration of negative thoughts as a normal phenomenon after childbirth. *J Midwifery Womens Health*. 2006;51(5):321–330.
28. Barr JA, Beck CT. Infanticide secrets: qualitative study on postpartum depression. *Can Fam Physician*. 2008;54(12):1716–1717.e5.
29. Chaudron LH, Nirodi N. The obsessive-compulsive spectrum in the perinatal period: a prospective pilot study. *Arch Women Ment Health*. 2010;13(5):403–410.
30. 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):377–385.
31. Uguz F, Gezginc K, Zeytinci IE, et al. Obsessive-compulsive disorder in pregnant women during the third trimester of pregnancy. *Compr Psychiatry*. 2007;48(5):441–445.
32. Zambaldi CF, Cantilino A, Montenegro AC, et al. Postpartum obsessive-compulsive disorder: prevalence and clinical characteristics. *Compr Psychiatry*. 2009;50(6):503–509.
33. Uguz F, Kaya N, Sahingoz M, et al. One year follow-up of postpartum-onset obsessive-compulsive disorder: a case series. *Prog Neuropsychopharmacol Biol Psychiatry*. 2008;32(4):1091–1092.
34. Tuzer V, Akdag HA. Mother picks her child's skin: a case report. *Noropsikiyatri Arsivi*. 2010;47(3):263–266.
35. Chandra PS, Bhargavaraman RP, Raghunandan VN, et al. Delusions related to infant and their association with mother-infant interactions in postpartum psychotic disorders. *Arch Women Ment Health*. 2006;9(5):285–288.
36. Gutiérrez-Zotes JA, Farnós A, Vilella E, et al. Higher psychoticism as a predictor of thoughts of harming one's infant in postpartum women: a prospective study. *Compr Psychiatry*. 2013;54(7):1124–1129.
37. Larsen KE, Schwartz SA, Whiteside SP, et al. Thought control strategies used by parents reporting postpartum obsessions. *J Cogn Psychother*. 2006;20(4):435–446.
38. Levitzky S, Cooper R. Infant colic syndrome—maternal fantasies of aggression and infanticide. *Clin Pediatr (Phila)*. 2000;39(7):395–400.
39. Labad J, Vilella E, Reynolds RM, et al. Increased morning adrenocorticotrophin hormone (ACTH) levels in women with postpartum thoughts of harming the infant. *Psychoneuroendocrinology*. 2011;36(6):924–928.
40. Lord C, Hall G, Soares CN, et al. Physiological stress response in postpartum women with obsessive-compulsive disorder: a pilot study. *Psychoneuroendocrinology*. 2011;36(1):133–138.
41. Flaisher-Grinberg S, Albelda N, Gitter L, et al. Ovarian hormones modulate 'compulsive' lever-pressing in female rats. *Horm Behav*. 2009;55(2):356–365.
42. Labad J, Menchón JM, Alonso P, et al. Female reproductive cycle and obsessive-compulsive disorder. *J Clin Psychiatry*. 2005;66(4):428–435, quiz 546.
43. Murray L, Finn M. Good mothers, bad thoughts: new mothers' thoughts of intentionally harming their newborns. *Fem Psychol*. 2012;22(1):41–59.
44. Santos HPO Jr, Sandelowski M, Gualda DMR. Bad thoughts: Brazilian women's responses to mothering while experiencing postnatal depression. *Midwifery*. 2014;30(6):788–794.
45. Arnold LM. A case series of women with postpartum-onset obsessive-compulsive disorder. *Prim Care Companion J Clin Psychiatry*. 1999;1(4):103–108.
46. Hudak R, Wisner KL. Diagnosis and treatment of postpartum obsessions and compulsions that involve infant harm. *Am J Psychiatry*. 2012;169(4):360–363.
47. Einarson A, Burt VK, Patroi D, et al. Ruminative worrying during pregnancy: a case series. *J Obstet Gynaecol Can*. 2006;28(8):724–727.
48. Sichel DA, Cohen LS, Dimmock JA, et al. Postpartum obsessive compulsive disorder: a case series. *J Clin Psychiatry*. 1993;54(4):156–159.
49. Abramowitz J, Moore K, Carmin C, et al. Acute onset of obsessive-compulsive disorder in males following childbirth. *Psychosomatics*. 2001;42(5):429–431.
50. Chapman AH, Chapman-Santana M, Teixeira SA. Obsessions of infanticide and imminent psychosis. *Arq Neuropsiquiatr*. 1996;54(1):127–130.
51. Hertzberg T, Leo RJ, Kim KY. Recurrent obsessive-compulsive disorder associated with pregnancy and childbirth. *Psychosomatics*. 1997;38(4):386–388.
52. Misri S, Milis L. Obsessive-compulsive disorder in the postpartum: open-label trial of quetiapine augmentation. *J Clin Psychopharmacol*. 2004;24(6):624–627.
53. Christian L, Storch E. Cognitive behavioral treatment of postpartum onset obsessive compulsive disorder with aggressive obsessions. *Clin Case Stud*. 2009;8(1):72–83.
54. Timpano KR, Abramowitz JS, Mahaffey BL, et al. Efficacy of a prevention program for postpartum obsessive-compulsive symptoms. *J Psychiatr Res*. 2011;45(11):1511–1517.
55. 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):422–426.
56. Chelmow D, Halfin VP. Pregnancy complicated by obsessive-compulsive disorder. *J Matern Fetal Med*. 1997;6(1):31–34.

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57. Goodman WK, Price LH, Rasmussen SA, et al. The Yale-Brown Obsessive Compulsive Scale, I: development, use, and reliability. *Arch Gen Psychiatry*. 1989;46(11):1006–1011.
58. Foa E, Kozak MJ, Salkovskis PM, et al. The validation of a new obsessive-compulsive disorder scale: the Obsessive-Compulsive Inventory. *Psychol Assess*. 1998;10(3):206–214.
59. Storch EA, Kaufman DA, Bagner D, et al. Florida Obsessive-Compulsive Inventory: development, reliability, and validity. *J Clin Psychol*. 2007;63(9):851–859.
60. Cox JL, Holden JM, Sagovsky R. Detection of postnatal depression: development of the 10-item Edinburgh Postnatal Depression Scale. *Br J Psychiatry*. 1987;150:782–786.
61. Swets M, Dekker J, van Emmerik-van Oortmerssen K, et al. The obsessive compulsive spectrum in schizophrenia, a meta-analysis and meta-regression exploring prevalence rates. *Schizophr Res*. 2014;152(2–3):458–468.
62. Grant JE, Mancebo MC, Pinto A, et al. Impulse control disorders in adults with obsessive compulsive disorder. *J Psychiatr Res*. 2006;40(6):494–501.
63. First MB, Spitzer RL, Gibbon M, et al. *Structured Clinical Interview for DSM-IV Axis I Disorders, Clinician Version (SCID-CV)*. Washington, DC: American Psychiatric Press; 1996.
64. Ackerman DL, Greenland S. Multivariate meta-analysis of controlled drug studies for obsessive-compulsive disorder. *J Clin Psychopharmacol*. 2002;22(3):309–317.
65. Dell'Osso B, Altamura AC, Allen A, et al. Epidemiologic and clinical updates on impulse control disorders: a critical review. *Eur Arch Psychiatry Clin Neurosci*. 2006;256(8):464–475.
66. Kashyap H, Fontenelle LF, Miguel EC, et al. 'Impulsive compulsivity' in obsessive-compulsive disorder: a phenotypic marker of patients with poor clinical outcome. *J Psychiatr Res*. 2012;46(9):1146–1152.
67. American Psychiatric Association. *Diagnostic and Statistical Manual for Mental Disorders*. Fifth Edition. Washington, DC: American Psychiatric Association; 2013.
68. Potenza MN, Koran LM, Pallanti S. The relationship between impulse-control disorders and obsessive-compulsive disorder: a current understanding and future research directions. *Psychiatry Res*. 2009;170(1):22–31.
69. Campbell A. Attachment, aggression and affiliation: the role of oxytocin in female social behavior. *Biol Psychol*. 2008;77(1):1–10.
70. Depue RA, Morrone-Strupinsky JV. A neurobehavioral model of affiliative bonding: implications for conceptualizing a human trait of affiliation. *Behav Brain Sci*. 2005;28(3):313–350, discussion 350–395.
71. Bethea CL, Lu NZ, Gundlah C, et al. Diverse actions of ovarian steroids in the serotonin neural system. *Front Neuroendocrinol*. 2002;23(1):41–100.
72. Wihlback AC. Ovarian hormones and effects in the brain [dissertation]. Umeá, Switzerland: Umeá University; 2004.
73. Berle D, Starcevic V. Thought-action fusion: review of the literature and future directions. *Clin Psychol Rev*. 2005;25(3):263–284.
74. Koran LM, Hanna GL, Hollander E, et al. *Practice Guideline for the Treatment of Patients with Obsessive-Compulsive Disorder*. Arlington, VA: American Psychiatric Association; 2007.

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