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Postpartum Thoughts of Infant-Related Harm and Obsessive-Compulsive Disorder:

Relation to Maternal Physical Aggression Toward the Infant

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ABSTRACT

Objective: Unwanted intrusive thoughts (UITs) of intentional infant-related harm are ubiquitous among new mothers and frequently raise concerns about infant safety. The purpose of this research was to assess the relation of new mothers' UITs of intentional, infant-related harm and obsessive-compulsive disorder (OCD) with maternal aggression toward the infant and to document the prevalence of maternal aggression toward the infant.

Methods: From a prospective, province-wide, unselected sample of 763 English-speaking postpartum women, a total of 388 participants provided data for this portion of the research. Participants completed 2 questionnaires and interviews postpartum to assess UITs of infant-related harm, OCD (based on *DSM-5* criteria), and maternal aggression toward the infant. Data for this research were collected from February 9, 2014, to February 14, 2017.

Results: Overall, few participants (2.9%; 95% CI, 1.5% to 4.7%) reported behaving aggressively toward their infant. Participants who reported UITs of intentional, infant-related harm (44.4%; 95% CI, 39.2% to 49.7%) were not more likely to report aggression toward their newborn compared with women who did not report this ideation (2.6%; 95% CI, 0.9% to 5.8%; and 3.1%; 95% CI, 1.3% to 6.2%, respectively). The same was true for women with and without OCD (1.9%; 95% CI, 0.3% to 6.4%; and 3.5%; 95% CI, 1.8% to 6.0%), respectively.

Conclusions: This study found no evidence that the occurrence of either UITs of intentional, infant-related harm or OCD is associated with an increased risk of infant harm. The prevalence of child abuse of infants in this sample (2.9%) is lower than reported in others (4%–9%). Findings provide critical and reassuring information regarding the relation between new mothers' UITs of intentional harm and risk of physical violence toward the infant.

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The protection of infants from harm represents a core value across all human societies.[1] Although uncommon, instances of infant abuse and infanticide are shocking and tragic.[2] While substantiated instances of physical child abuse, defined as non-accidental use of force on the part of a parent or other caregiver, which causes or could cause physical injury or death, suggest that these events are uncommon, they very likely underestimate the actual prevalence of child abuse.[3] Researchers estimate that 1 in 4 US children may suffer some form of maltreatment, whereas referrals to child protective services suggest a maltreatment prevalence of 9 per 1,000 (ie, 25% versus 0.1%).[4]

Published reports of the prevalence of infant abuse are rare, and to our knowledge, none are based on a Canadian sample.[5] To be accurate, estimates of the prevalence of infant abuse should involve representative samples and anonymous reporting to maximize disclosure and honest responding. Among the handful of studies that use these methods, estimates of the prevalence of maternal physical abuse of infants range from 4% to 9%.[6–12] The operationalization of physical abuse varies across studies from broad descriptions to specific behaviors such as spanking, slapping, shaking, or smothering.[6–12] From the aforementioned data, a recent meta-analysis[13] estimated that 4.5% (95% CI, 2.8%–6.5%) of mothers in a typical sample engage in some form of physical abuse of infants under the age of 6 months.

Given the high importance placed on infant safety, it is no surprise that reports of thoughts of infant-related harm by parents are often responded to with alarm regarding infant safety by care providers and child protective services. However, there is reason to believe that only some thoughts of infant-related harm merit this response, whereas others represent either a normative postpartum experience or evidence of an anxiety-related condition not associated with any risk of child harming (for example obsessive-compulsive disorder [OCD]). Specifically, unwanted intrusive thoughts, images, and impulses of harm coming to one's infant are a common postpartum experience; the vast majority of new mothers report unwanted intrusive thoughts (UITs) of illness or accidental injury, and half report UITs of intentionally harming their child.[12,14,15] UITs of infant-related harm are also a core feature of postpartum OCD.[16] OCD is an anxiety-related condition

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Clinical Points

- The association of postpartum unwanted intrusive thoughts (UITs) of harming one's infant on purpose with infant safety is critical to correct clinical management of these thoughts and had previously been unclear.
- Postpartum UITs of harming one's infant on purpose, in the absence of any other risk factors for child abuse, appear to be a normative postpartum experience and do not imply any increased risk to infant safety.
- Postpartum obsessive-compulsive disorder is not associated with an increased risk of infant-harming behaviors, and this information should be incorporated into treatment for this condition.

for which the perinatal period represents increased risk for onset or exacerbation.[13,17–19]

When infant-related harm thoughts occur as a normative, albeit distressing, postpartum experience or in the context of postpartum OCD, the risk to infant safety is markedly different from the risk to the infant safety when these kinds of thoughts occur in the context of a suicidal or psychotic depression or postpartum psychosis. Although superficially, infant-related harm thoughts appear similar across each of the aforementioned situations, there are important distinctions that can aid in ascertaining the actual risk to infant safety. For example, the kinds of harm thoughts that occur in the context of postpartum OCD are ego-dystonic (ie, inconsistent with the person's beliefs and values), whereas those that occur in the context of a suicidal or psychotic depression or postpartum psychosis are typically ego-syntonic (ie, consistent with the person's beliefs and values at the time). The risk that the parents experiencing this ideation may actually harm their infant is heavily dependent on the degree to which the harm ideation is ego-syntonic. When dystonic, the risk to infant safety is low. When syntonic, the risk to infant safety is higher.[20]

However, many care providers are unaware of these distinctions and consequently fear for the safety of the infant, irrespective of the nature of the thoughts (ie, ego-dystonic/ego-syntonic). While protection of the infant is paramount, assuming a risk to infant safety (when this may not be the case) also poses a risk to the parent's mental health. Specifically, it is believed that OCD develops as a result of negative appraisals of normally occurring intrusive ideation (ie, "That fact that I am having these thoughts means that I am evil, dangerous, or crazy").[21] Responding to a parent who discloses unwanted and ego-dystonic postpartum ideation of infant-related harm as if they are a risk to their infant will increase the risk of OCD development. Distinctions between the various types of postpartum harm ideation experienced by parents of infants and their relation with infant harm is beautifully presented in a table by Bramante[20] (adapted here as Table 1).

The type of infant-related harm thoughts that form the topic of investigation in this study are those that are unwanted and intrusive (ie, ego-dystonic) and consequently much more similar to those that occur in the context of OCD than to those occurring in the context of psychosis. Although evidence to date does not support a relationship between UITs of intentional infant-related harm and aggression toward the infant, this conclusion is based on very small sample sizes.[12] Additional evidence pertaining to the risks, if any, associated with new mothers' UITs of infant-related harm is much needed. Further, although it is widely accepted that OCD is not associated with an increased risk of violence and that OCD sufferers are not at risk of acting on the content of their obsessions, this assertion has not been formally assessed.[19]

Rationale

Given the current gaps in knowledge with respect to UITs of infant-related harm and infant abuse, we undertook the first large-scale study to report on the relationship between new mothers' UITs of infant-related harm and maternal aggression toward the infant, and the first to empirically investigate the relation between postpartum-occurring OCD and maternal aggression toward the infant. We also provide rarely available estimates of the prevalence of abuse of infants and one of the first Canadian estimates of physical abuse by mothers of infants. On the basis of our pilot research,[12] we hypothesized that women who report UITs of intentional harm or symptoms meeting diagnostic criteria for OCD would be no more likely to report physical aggression toward the infant than those who do not.

METHODS

The full study methods[22] have been previously published; therefore, aside from the information contained in this paragraph, this article describes only the methods relevant to this portion of the research. In the full study, participants engaged in up to 3 assessments (1 in pregnancy and 2 postpartum) consisting of online questionnaires and an interview. Participants were administered diagnostic interviews assessing for major depression and OCD at each assessment point, and at the postpartum interviews participants were also asked about unwanted, intrusive thoughts of harm related to the infant. Through online questionnaires, participants provided information on their sleep, symptomatology, relationship style, parenting attitudes and behaviors, and social support. Study procedures were approved by the relevant research ethics review boards. Written informed consent was obtained from all participants and verified verbally.

Participants

Eligible participants were English-speaking pregnant women living in the British Columbia (BC) who were at least 19 years old. Participants were recruited proportionally across BC via all hospitals with 1,500 or more births per year (based on the 2008–2009 BC perinatal database[23]). Of the 1,114 women who initially expressed interest in the study, 763 (68%) provided data from February 9, 2014, to February 14, 2017. The present report is based on data from 388 women (51% of the full sample) who completed

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Table 1. Types of Postpartum Harm Ideation Experienced by Parents of Infants and Their Relation to Infant Harm[a]

	Disorder			
Type of Ideation	OCD	Depression	Psychosis	Bonding Disorder
Example of thought	*What if I become crazy and stab my baby? Or throw him out the window...*	*I am an incapable mother. My child could die because I drop her*	*There is a plot against me and my daughter. Someone will abduct us and rape her...I have to save her by killing her*	*I hope a car stops and takes my child while I across the street...at least I get rid of it*
Intent to harm	There is no intention of harming the baby	There is no intention of harming the baby	The mother has delusional beliefs about the baby (eg, the child is the devil)	There is no *intention* of harming the baby, but the hidden desire that he could be taken by someone or die
Nature of the thought	Obsessive, intrusive, unwanted thoughts. Ruminations	Depressive thought, centered on the mother's own inadequacy and inabilities as a mother	Mother thinks that her thoughts are reasonable and/or acts upon them	The mother is afflicted by the lack of positive feelings for her child
Emotional response to the thought	Anguish and fear	Depression and social withdrawn	Thoughts don't generate fear, but rather relief	Anger against baby's demands
Behavioral response to the thought	She puts in place solutions to protect the baby and to reduce anguish and anxiety	If the pathology is less severe, she seeks help to manage the baby or she doesn't know what to do and becomes emotionally distant from the baby	She may think that putting her thoughts into practice is the right way to protect her child	She has the desire that a relative or adoptive parent take care of her baby
Delusions/ hallucinations	No delusions and/or hallucinations	No delusions and/ or hallucinations or mood-congruent psychotic symptoms	Delusions and/or hallucinations	No delusions and/or hallucinations
Hypervigilance	Hypervigilance	No hypervigilance	No hypervigilance	No hypervigilance
Guilt/shame	Feelings of guilt and shame	Feelings of guilt and shame	No feelings of guilt and shame	Feelings of anger and hostility against the baby, no sense of guilt
Ego-dystonicity/ Ego-syntonicity	Ego-dystonic	Thought is not intentional	Ego-syntonic	Thought is not intentional
Separation of the infant from the mother	M-B separation not necessary	M-B separation not necessary	Never leave the mother alone with the baby	Never separate M-B
Level of risk of harm	**Low risk**	**Low risk but high risk with psychotic symptoms**	**High risk**	**High risk**

[a]Adapted with permission from Bramante.[20] (With permission of the author, the left-most column has been added to the original.) Boldface in the final row denotes the level of risk of harm as the key outcome in this table.
Abbreviations: M-B = mother-baby, OCD = obsessive-compulsive disorder.

questions pertaining to maternal physical aggression toward their infant.

Women who answered the questions about maternal aggression (and thus whose data are included in this article) differed from the full study sample in terms of age ($F_{1, 723}$ = 10.63, P = .001), education (χ^2_4 = 11.23, P = .02, n = 728), and income (χ^2_9 = 17.51, P = .04, n = 605), but not parity. Older, more educated, and higher income–earning women were more likely to respond to maternal physical aggression questions. Demographic information for the full sample is presented in Table 2.

Procedures

In the first 9 months postpartum, consenting participants completed 2 assessments consisting of online questionnaires and a telephone interview. Questionnaires were completed at 7 (mean [SD] = 7.3 [3.7]) weeks and 25 (24.7 [8.3]) weeks postpartum. Interviews were completed 9 (9.1 [1.9]) weeks and 21 (21.3 [3.8]) weeks postpartum. New mothers' reports of UITs of infant-related harm (accidental and intentional) and OCD diagnostic status were both assessed during the telephone interviews. All remaining data were collected via questionnaires. Questionnaire data were collected online unless participants requested paper format.

Questions about child harming behaviors described in the Parenting Behaviors Questionnaire (PBQ; see the Assessment Tools section) were administered anonymously in the final questionnaire package (see the study protocol[22] for details). To maximize disclosure and ensure the validity of responses to questions about child abuse without creating

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Table 2. Sample Demographics[a]

Variable	Total Sample (N = 763)	Current Study (N = 388)
Relationship Status		
Married	74.1 (544)	77.7 (297)
Living with a partner	20.2 (148)	17.8 (68)
Single	4.2 (31)	3.7 (14)
Divorced/separated	1.5 (11)	0.8 (3)
Education		
Did not complete high school	2.6 (19)	1.8 (7)
Completed high school	8.4 (61)	6.8 (26)
Enrolled in college or completed an undergraduate degree	52.3 (381)	49.7 (190)
Enrolled in graduate school or completed a graduate degree	36.6 (267)	41.7 (159)
Cultural heritage		
European	52.7 (384)	60.0 (228)
East Asian	11.5 (84)	12.6 (48)
South Asian	7.7 (56)	6.3 (24)
Southeast Asian	6.2 (45)	3.4 (13)
Indigenous	3.4 (25)	1.3 (5)
Multiethnicity	8.8 (64)	8.4 (32)
Other	9.6 (70)	8.0 (30)
Age, mean (SD), range, y	32.4 (4.9), 18.0 to 46.8	32.9 (4.6), 18.0 to 46.8

[a]Values are shown as % (n) for that column unless otherwise specified. Please note that there is some variability in the total numbers provided as participants were permitted to elect to skip questions they did not wish to answer.

the risk for participants that their responses could lead to a report to child protection authorities, participants were informed throughout the research that responses to questions about child abuse were anonymous.

Assessment Tools

The Postpartum Intrusions Interview (PPII)[12] is a semistructured interview that assesses the number and frequency of parents' UITs of accidental and intentional harm toward the infant as well as behavioral responses to these thoughts. UITs of accidental and intentional harm are assessed separately. Participants are provided with lists of examples of UITs of accidental and intentional harm and open-ended questions to elicit any additional thoughts followed by questions pertaining to thought frequency during the past week and since their infant's birth. Participants were informed that UITs could come in the form of worded thoughts, images, or urges. Examples of interview items include "thoughts that your baby will suffocate while sleeping" (accidental) and "thoughts of stabbing your baby" (intentional). The behavioral responses to UITs of *accidental* and *intentional* harm assessed by the PPII include reassurance seeking, avoidance, and repetitive behaviors (eg, "engage in any washing or cleaning to protect your baby").

The Structured Clinical Interview for *DSM-5* (SCID-5)[24] is a well-validated structured diagnostic interview designed for the assessment of a wide range of psychiatric problems. The SCID-5 was used to assess OCD, and adaptations were made to include perinatal-specific symptoms of OCD. Specifically, the initial OCD question focused on obsessions unrelated to the infant (ie, "Separate from the thoughts of accidental and intentional harm related to your baby, which we just spoke about, in the past 2 weeks…"). Immediately prior to SCID-5 administration, participants were asked in detail about their infant-related thoughts in the PPII interview. This information was then incorporated into the SCID-5 interview questions, with the interview first verifying that any infant-related intrusions were recurrent and persistent. Once that was confirmed, all remaining SCID-5 OCD questions about obsessions were phrased as, "Thinking about these thoughts and the ones you just told me about your baby…." The same process was repeated for compulsions. In this way, perinatal-specific content and non-perinatal content were woven together throughout the assessment. All interviewers were trained and supervised by the lead author (N.F.).

The Parenting Behaviors Questionnaire (PBQ; N.F.; S.W.; D.W.; unpublished scale, 2019) is a 10-item scale developed for this study to assess verbal and physical aggression and sexual behaviors by the participant toward their infant. The physical aggression items were shaking, hitting, spanking, slapping, burning or scalding, and choking. Items were embedded within other items on normal parenting behaviors (feeding the baby). For the purposes of this article, we focused only on physical aggression.

Data Analysis Plan

Data analysis was conducted using the *brms* package[25] within *R 4.0.2*,[26] and models were implemented using Bayesian logistic regression with mildly informative priors.* Descriptive information is presented in the form of means, standard deviations, proportions, percentages, and 95% confidence intervals (CIs).

RESULTS

The prevalence of maternal physical aggression toward the infant as measured by the PBQ was estimated to be 2.9% (95% CI, 1.5% to 4.7%) based on 11 of 388 participants. Frequencies of specific behaviors are shown in Table 3.

On the basis of the 340 women who completed the PBQ and provided data pertaining to UITs of intentional harm, we estimated the prevalence of experiencing some UITs of intentional harm toward the newborn during the first 9 months postpartum to be 44.4% (95% CI, 39.2% to 49.7%).

Among the 151 women who reported UITs of intentional harm, 4 reported behaving aggressively toward their infant, resulting in an estimated prevalence of 2.6% (95% CI, 0.9% to 5.8%). Among the 189 women who reported no occurrences of UITs of intentional harm, 6 reported

*For details pertaining to the implementation and evaluation of these and similar models, see Fawcett et al[27], Fawcett et al,[28] or Fawcett et al.[29] Priors for analyses pertaining to the prevalence of physical abuse were calibrated such that values anywhere between < 0.1% and ~50% were considered credible and priors for analyses pertaining to the prevalence of UITs were calibrated to be completely unform between 0% and 100%.

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Table 3. Participants' Self-Reported Harming Behaviors[a]

Participant	Hitting	Shaking	Spanking
1	…	6–10 times	…
2	3–5 times	…	…
3	…	…	Twice
4	…	…	Twice
5	…	Twice	…
6	…	…	Once
7	…	…	Once
8	…	Once	…
9	…	Once	…
10	…	Once	…
11	…	…	Once

[a]Items not endorsed by any participant (ie, slapping, burning, and choking) are excluded from the table.
Symbol: … = never.

behaving aggressively toward their infant, resulting in an estimated prevalence of 3.1% (95% CI, 1.3% to 6.2%). The difference between these groups was only 0.5% (95% CI, −3.2% to 4.0%). Importantly, a Bayes Factor (BF) calculated using the Savage-Dickey method[30] suggested that the data were 3.8 times more likely under the Null model (ie, that these groups do not differ) than under a model for which a difference exists. This finding reflects evidence favoring the claim that women experiencing UITs of intentional harm are not at increased risk of harming their infants.

Among the 345 women who completed both the PBQ and the semistructured diagnostic interviews, 64 received a diagnosis of OCD. Of those 64 women, 1 reported behaving aggressively toward her infant, resulting in a prevalence estimate of 1.9% (95% CI, 0.3% to 6.4%). Of the 281 women who did not receive a diagnosis of OCD, 10 women reported behaving aggressively toward their infant, resulting in an estimate of 3.5% (95% CI, 1.8% to 6.0%). This represents a difference of 1.6% (95% CI, −3.1% to 4.7%), not credibly different from zero.

Although the preceding model estimated women who denied OCD to be at 1.9 times (95% CI, 0.5 to 14.2) greater risk of acting aggressively toward their infant, the confidence intervals for the associated difference and risk ratio were broad, owing to the small sample of women having received a diagnosis of OCD. However, whereas a BF evaluating evidence for the Null in this case only weakly trended toward there being no difference between these groups (BF = 2.2), a directional BF (BF = 3.8) supported the claim that women who denied OCD were at equal or greater risk compared to those diagnosed with OCD.

DISCUSSION

Health care providers fear that UITs of intentional harm toward a new baby are harbingers of child abuse.[31] This study, however, suggests that such thoughts should be discussed with new mothers as a normal, albeit unpleasant and likely distressing, postpartum experience.

On the basis of this study, using a representative sample and procedures to ensure anonymity, we estimate 2.9% of mothers engage in at least one act of physical aggression toward their infant within the first year (95% CI, 1.5% to 4.7%). This finding that is also consistent with the 4.0% (95% CI, 1.3% to 10.5%) reported in our earlier pilot work (N = 100).[12]

Our estimates also indicate that 44.4% of new mothers report UITs of intentional infant-related harm (95% CI, 39.2% to 49.7%), replicating our earlier small study.[12] Critically, the 95% confidence intervals for prevalence of maternal aggression toward the infant among women who reported UITs of intentional harm (0.9% to 5.8%) overlapped almost completely with those of women who denied such thoughts (1.3% to 6.2%). Bayesian analysis supports the conclusion that reporting UITs of intentional harm toward one's infant is not associated with a higher prevalence of maternal aggression toward the infant, again replicating our earlier study.[12] Taken together, these studies indicate that the mere occurrence of UITs of intentional harm is not an indication of a woman's risk of physically harming her infant.

This study also provided an opportunity to examine risk of maternal aggression toward the infant in the context of OCD during the perinatal period. Results indicated no support for the idea that a diagnosis of OCD is associated with elevated risk for harming the infant, aligning with the clinical experience of OCD specialists, who widely suggest that OCD is not associated with an increased risk of violence despite the occurrence of obsessions with violent themes. Of note, the prevalence of OCD in this sample (16.9%) was much higher than that reported in prior research.[27] These findings are largely attributable to perinatal-sensitive diagnostic interviewing and changes in the diagnostic criteria for OCD from the *DSM-IV* to the *DSM-5*. A full reporting and discussion of our OCD prevalence and incidence findings has been published elsewhere.[32]

Clinical Implications

UITs of intentional harm related to the infant may influence parenting decisions and negatively impact new mothers' trust in their capacity to take care of their infant.[33] Providing new mothers with accurate information about this type of thought may be reassuring. The findings of the current study (replicating earlier preliminary work) offer evidence that these kinds of thoughts are a normative postpartum experience and, when they occur in the absence of other risk factors, do not imply an increased risk to infant safety. We recommend that education regarding postpartum harm thoughts be provided routinely to pregnant women to reduce distress associated with these kinds of thoughts. Providing this information in pregnancy, before the onset of the thoughts, is likely to be most helpful. Further, the finding that a diagnosis of OCD was not associated with an increased risk of infant-harming behaviors can be of benefit to patients undergoing psychosocial treatment for this condition.

Limitations

Despite the numerous steps we took to ensure frank disclosure of child-harming behaviors, underreporting of such behaviors seems likely. First, there is the obvious problem of accuracy of retrospective recall from the time

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of the infant's birth to the final postpartum assessment involving questions about abuse. Further, these are difficult behaviors to admit to oneself and would likely be very uncomfortable to disclose. Even with anonymity protections, some women may have been fearful of potential negative consequences of disclosure. Importantly, participants who answered questions about abuse were older and better educated and had higher incomes than those who chose not to answer these questions. It may be that younger, less well educated, and poorer participants felt less safe answering questions about child-harming behaviors. Consequently, study findings can reasonably be generalized to older, better-educated, and wealthier perinatal people from high-resource, English-speaking countries, but may not be fully reflective of poorer, younger, and less well educated perinatal people from other English-speaking countries, as well as those from non-Western nations. Additional research is necessary to fully understand the relationships investigated in this research. Further, although this study is the largest to date on this topic, the confidence intervals were somewhat wide due to the infrequency of infant-harming behaviors and diagnosis of OCD. A much larger sample would be required to precisely determine the magnitude and direction of risk factors. Future research would also benefit from the collection of data pertaining to women's history of mental health difficulties, especially depression, to examine the relations between these and infant-related harm thoughts, perinatal OCD, and infant-harming behaviors.

In conclusion, the findings from this study provide critical and reassuring information regarding the relation between new mothers' UITs of intentional harm and the risk of violence toward the infant. This study is the largest to date showing no evidence that women who experience UITs of intentional infant-related harm are at significantly greater risk of harming their child compared with the women who do not report these types of thoughts. Further, this study provides the first empirical evidence confirming what has been a longstanding belief of clinicians, namely that OCD sufferers are not at risk of violent behavior related to their ideation. In our opinion, these findings now provide the necessary information to educate pregnant and postpartum women, their partners and family members, and maternity care providers and policy makers with respect to maternal postpartum UITs of intentional, infant-related harm.

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