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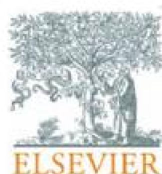

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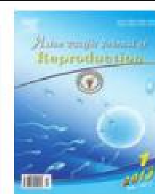

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# Postpartum anxiety disorders

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ABSTRACT

The prevalence and clinical presentation of anxiety disorders during the postpartum period has received little attention. Though research on postpartum anxiety is increasing, there are currently few controlled studies of clinical diagnoses of anxiety disorders. This article reviews the literature as it relates to the prevalence, clinical presentation, course, and treatment of anxiety disorders including generalized anxiety disorder, obsessive compulsive disorder, posttraumatic stress disorder, panic disorder, and social phobia during the postpartum period. Future research is necessary to better understand the etiology and course of postpartum anxiety disorders, as well and to understand the implications of such disorders upon those affected by them. Accordingly, identification of effective prevention and intervention strategies is also necessary.

## 1. Introduction

The birth of a child can be a time filled with a variety of emotions, and parents often experience well wishes and congratulations from others after the child's birth. Yet what is less often discussed is the significant anxiety that may occur postpartum[1]. When considering negative emotions that may be present during the postpartum period, previous work has generally focused on postpartum depression[2]. However, increasing research is acknowledging the prevalence of anxiety disorders in the postpartum[3], yet it appears that anxiety disorders are under-detected in the postpartum period[4]. One reason that anxiety in the postpartum may be missed is that parents may feel that they should be happy about the birth of their child, causing them to hide anxiety symptoms from others due to concerns that they might be judged negatively[5]. Parents might also be more susceptible to the development of an anxiety disorder after the birth of a child given that they are often overwhelmed by changing roles, numerous demands on their time, additional financial responsibilities, and lack of sleep[6]. Anxiety may also arise due to concerns that others are evaluating one's parenting skills, and women may also feel particularly self-conscious due to bodily changes given their pregnancy[7]. The goal of the current article is to review the literature as it relates to anxiety disorders during the postpartum period.

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## 2. Generalized anxiety disorder

Generalized Anxiety Disorder (GAD) is characterized by excessive anxiety and worry about a variety of events or activities. The anxiety and worry are also accompanied by bothersome physical symptoms (e.g., muscle tension, sleep disturbance). For a diagnosis of GAD, diagnostic criteria indicate that people must exhibit the anxiety symptoms for at least six months. Accordingly, many individuals who demonstrate postpartum anxiety may initially be diagnosed with another disorder (e.g., adjustment disorder with anxious mood, anxiety disorder not otherwise specified) if they do not meet the six month criterion, despite showing all the other symptoms of GAD[8]. Regardless, generalized anxiety in the postpartum period is commonplace. Compared to the rate of GAD in the general population, higher rates of GAD have been found in woman assessed

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approximately eight weeks after childbirth[9]. In a sample of 80 community women who were approximately ten weeks postpartum, 12.5% were diagnosed with GAD. Studies that have assessed women at six months postpartum have found the prevalence of GAD to range from 6.1%–7.7%[9]. Common fears associated with postpartum generalized anxiety include a pathological fear of cot death, fear of criticism or removal of the child, and fear that there will be too little social support[7]. Postpartum women with GAD, assessed approximately ten weeks postpartum, also report higher levels of body image self–consciousness, sexual fear, and avoidance compared to that of postpartum women without GAD[6]. At subclinical levels, thoughts regarding the safety of the newborn are often common aspects of parenthood, so parents should be informed of this to normalize their experience of such thoughts as well as create awareness of when such thoughts may be considered excessive and problematic. For instance, if the generalized anxiety symptoms cause significant distress and/or begin to interfere with functioning, consideration of a generalized anxiety disorder diagnosis may be warranted.

## 3. Obsessive–compulsive disorder

Obsessive–compulsive disorder (OCD) is characterized by intrusive anxiety–provoking thoughts, impulses, or images and/or the performance of ritualistic or compulsive behaviors in effort to reduce anxiety. In recent years, there has been an increase in attention given to OCD in the postpartum period[10]. A study of 129 women found that six women (4.65%) experienced an onset of obsessions and compulsions after childbirth[7]. In another study, 126 adult women who met DSM–IV criteria for OCD were interviewed retrospectively to assess OCD onset and symptom exacerbation, and many affected women reported a worsening of obsessive–compulsive symptoms during pregnancy and/or the postpartum period[11]. Other studies also indicate that women with preexisting OCD develop a worsening of symptoms in the postpartum[12]. Postpartum OCD has also been shown to be frequently associated with obstetric complications such as pre– and post–term labor and delivery by caesarean section[13]. One study comparing clinical characteristics of OCD with and without postpartum onset showed that the incidence of postpartum onset OCD was 4% at six weeks post natally, and results showed the patients with postpartum onset OCD had significantly more frequent aggressive obsessions (e.g., thoughts of harming their newborn) than the OCD patients without postpartum onset[14]. The presence of intrusive thoughts to harm their babies has been documented in other research with postpartum women with OCD[15], and men also experience intrusive thoughts about responsibility for harm[16]. Parents who have intrusive obsessional thoughts of harming their child may avoid their child as a result, which may negatively impact the parent–child relationship as well as infant care in general[11]. It is also important to differentiate the OCD–related obsessions pertaining to infant harm from actual infanticidal ideation. Individuals with OCD are typically aware of their symptoms, recognize them as unwanted, and they engage in safety–seeking behaviors to avoid acting on them. Other common postpartum OCD symptoms include contamination concerns (e.g., feeling as though you have to keep all germs away from the baby) and excessive checking (e.g., repetitively checking to make sure a sleeping baby is breathing). In one study of seven women with postpartum OCD, five women reported dysfunctional mother–child behavior such as avoidance of the infant, separation anxiety, and difficulty allowing their children to participate in usual childhood activities due to the fear of something bad happening[17].

## 4. Post–traumatic stress disorder

Post–traumatic stress disorder is characterized by exposure to a traumatic event that involves actual or threatened death or serious injury, or a threat to the physical integrity of oneself or others. The event is re–experienced in one of several ways such as having intrusive recollections of the event or feeling as if the event were recurring. The individual also engages in persistent avoidance of stimuli associated with the trauma and/or numbing of emotional responsiveness, and he or she also experiences symptoms of hyperarousal (e.g., difficulty sleeping, hypervigilance). Examples of symptoms endorsed by women who experienced PTSD after childbirth include frightening flashbacks of the birth and delivery experience, feelings of numbness and detachment, and isolation from motherhood[18]. In a sample of women in the United States, 1.9% received a diagnosis of PTSD attributable to childbirth when assessed at approximately four weeks postpartum[19]. The prevalence of PTSD after childbirth was assessed in Swedish women and results found that 1.7% met the criteria for PTSD related to their recent delivery[20]. In Australia, researchers reported a 5.6% incidence of acute PTSD attributable to their labor and birth experience based on a clinical interview conducted 4–6 weeks postpartum[21]. In this study, high levels of obstetric interventions during delivery along with the perception of inadequate intrapartum care during delivery were significantly associated with the development of acute trauma symptoms[21]. In a sample of women assessed six weeks postpartum in the United Kingdom, 2.8% met criteria for PTSD[22], and that decreased to 1.5% at 6 months postpartum. In the United Kingdom, Menage[23] reported a prevalence rate of 6% for PTSD after childbirth. Women endorsed having distressing symptoms during the birth such as feelings of powerlessness during procedures, distress associated with lack of information given to them during the labor, and the experience of physical pain. Another study demonstrated that history of sexual trauma, a more negative childbirth experience than anticipated, and less social support predicted PTSD at 1–month postpartum[24]. Recommendations based on a review of postpartum PTSD indicate that prevention efforts should include preparing information for women on the presence of obstetric interventions and detection of pregnant women who may be particularly vulnerable due to known vulnerability factors[25].

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## 5. Panic disorder

Panic disorder is characterized by recurrent panic attacks that occur unexpectedly, as well as persistent worry about having future attacks, worry about consequences of panic attacks (e.g., "having a heart attack"), and/or a significant change in behavior given the presence of panic attacks. There is very little research on panic disorder in the postpartum period. Instead, most studies focus on the presence of panic disorder during the course of pregnancy. However, a retrospective study of 64 childbearing women found that significantly more women reported an onset of panic disorder during the first 12 weeks postpartum than would be expected by chance[26]. In a sample of 40 women with preexisting panic disorder, 35% exhibited puerperal worsening of symptoms[27]. Another study showed that in a sample of women with preexisting panic disorder, 63% of women experienced an exacerbation of symptoms in the postpartum period[28]. Weaning during breastfeeding may also increase the risk of panic disorder during the postpartum period[28]. As indicated, panic disorder in the postpartum may also detrimentally affect quality of life. Accordingly, a qualitative study of six women with postpartum panic disorder reports on the negative impact panic disorder had upon the women and their families, such as the resultant changes that women made to their lifestyle (e.g., isolating themselves to their homes) given fears of recurrent panic attacks[29].

## 6. Social phobia

Social phobia is characterized by excessive fear of embarrassment or negative evaluation that is associated with significant distress, interference with functioning, and avoidance of social situations. A longitudinal study of postpartum women in the community indicated that 4.1% met diagnostic criteria for social phobia at eight weeks postpartum, with most women reporting that their disorder had a postpartum onset[9]. At six months postpartum, 2.3% met diagnostic criteria. Given that diagnostic rates declined over time with even fewer women meeting criteria at 12–months, this suggests that the majority of individuals who develop social phobia with a postpartum onset only have the disorder temporarily. Concerns identified by the women included avoidance of social situations, difficulty participating in conversations, and body image concerns. Given that social anxiety often involves fears of negative evaluation or judgment from others, parents may be particularly concerned about how others may judge their parenting skills. Socially anxious parents may also be particularly hesitant to seek support, such as by joining a parenting class, due to their fears of negative evaluation[8].

## 7. Etiology of postpartum anxiety disorders

Several theories have been suggested to explain the etiology of postpartum anxiety disorders, yet significantly more research must be completed to adequately understand the nature and course of anxiety during the postpartum period. Further, it is likely that etiology is multi–determined in that a variety of factors contribute to the development and maintenance of postpartum anxiety disorders. For example, cognitive–behavioral perspectives have been proposed to explain the etiology of anxiety disorders. Cognitive behavioral theories focus on examining the thought processes and behaviors associated with one's mood. Given the increase in responsibility associated with caring for a newborn, parents may overestimate the possibility of harm to their infant. Parents may also grant significance to common, intrusive thoughts (e.g., thinking that one is a bad parent because of having intrusive thoughts of harm), which in turn may increase anxiety. Additionally, parents who are fearful that they might act on their obsessive thoughts may then engage in safety seeking and avoidance behaviors in effort to control the intrusive thoughts[30]. Individuals may also seek reassurance from others to confirm that others are not negatively judging their parenting skills. Other etiological theories include dysregulation with neurotransmitters or hormones (e.g., progesterone) in the onset of postpartum anxiety. For example, psychophysiological studies show that women with postpartum OCD show increased cortisol levels when compared to healthy postpartum controls, and they also reported experiencing more subjective stress and anxiety[31]. However, biological theories cannot fully account for the development of postpartum anxiety given that new fathers may also develop symptoms[16]. Sociobiological and evolutionary perspectives suggest that anxious thoughts may be adaptive by causing the parent(s) to be cautious in protecting the child from harm[32].

## 8. Treatment of anxiety disorders in the postpartum period

Cognitive Behavioral Therapy: Cognitive–behavioral therapy (CBT) is efficacious for the treatment of anxiety disorders, yet little research has specifically examined the effectiveness of CBT in treating anxiety disorders with postpartum onset. Cognitive behavioral therapy is a psychosocial treatment option that involves psychoeducation about the nature and treatment of anxiety, identification of physical responses to anxiety, identification of maladaptive thought patterns and the use of cognitive restructuring, and, as its core component, graduated exposure to feared scenarios to enable habituation. Though it may be expected that CBT would be beneficial for anxiety regardless of time of onset, there is a scarcity of controlled studies that evaluate CBT specifically during the postpartum period. However, a few do exist. Christian and Storch[33] completed a case study and found that CBT with exposure and response prevention was successful in achieving clinical remission of OCD in a woman with postpartum OCD. Another study[34] found that an intensive CBT program, with sessions occurring several times weekly, followed by the option of up to 3 follow–up sessions, was effective in improving symptoms in six women with postpartum OCD. All mothers improved on self–report and clinician–rated measures and maintained gains at 3–5 month follow–up[34]. Timpano[35] examined a group cognitive–behavioral prevention program

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compared to a control group for women who were considered psychologically vulnerable to OCD. Results showed that at 1 month, 3 months, and 6 months postpartum, the prevention program was associated with significantly fewer levels of obsessions and compulsions compared to the control condition.

In regard to other anxiety disorders, a case series of two women with postnatal PTSD indicated that CBT was an effective treatment[36]. Ayers *et al.*[36] also emphasize the importance of tailoring CBT treatment techniques to the particular fears and issues that arise for each woman (e.g., obstetric complications), and that providing sensitive management of events and education during the birth can be helpful to minimize the likelihood of PTSD. Thirty pregnant women with blood– and injection–phobia participated in two sessions of group therapy, and they were compared to 46 pregnant women with untreated blood– and injection phobia and 70 healthy controls[37]. Women who participated in the CBT treatment group showed significantly less anxiety after treatment and at 3 months postpartum. Though research on CBT for postpartum anxiety disorders is increasing, it is notable that a lot of attention has been given to the use of CBT for postpartum depression[38–40]. Overall, much more research needs to be completed to better understand the effectiveness of CBT for individuals with postpartum anxiety disorders.

Pharmacotherapy: Psychopharmacological treatment options are also a consideration for treatment of postpartum anxiety. For instance, serotonin reuptake inhibitors (SRIs) including selective serotonin reuptake inhibitors (e.g., fluoxetine, fluvoxamine) are a first–line treatment option for anxiety disorders, yet few studies specifically examine their use during the postpartum period. However, those that have generally have found positive results, though the majority of studies focus on pharmacotherapy for postpartum OCD. Arnold[17] conducted a 12–week, open–label trial of fluvoxamine treatment with three women with postpartum–onset OCD, and results indicated that two of the three participants experienced a positive response (defined by a 30% decrease in the total score on the Yale–Brown Obsessive–Compulsive Scale). In another study, fluoxetine was effective in reducing symptoms in two women with new–onset OCD during the puerperium (i.e., 4–week period after child–birth[41]. Using a sample of individuals with postpartum OCD and depression, another study compared paroxetine monotherapy to combination therapy of paroxetine and CBT[42]. Fifty percent of adults on paroxetine monotherapy and 58% of adults receiving combination therapy exhibited a significant reduction in OCD symptoms, and no significant differences were found between treatment conditions[42]. Given that antipsychotics are sometimes used as adjunctive treatment for anxiety disorders, some research has specifically examined the use of atypical antipsychotic augmentation (e.g., quetiapine) of SSRI treatment in the treatment of postpartum OCD[43]. Specifically, quetiapine augmentation was shown to be effective in reducing symptoms among 11 of 14 women who were treatment non–responders to SRI's[43].

Despite potential benefits from pharmacotherapy, women may be concerned about the risk for potential adverse effects to the infant due to their use of medication if they are breastfeeding[44]. As indicated by the United States Food and Drug Administration (FDA), "there are no adequate and well–controlled studies of SSRIs in pregnant women"[45]. Food and Drug Administration (FDA) advisories also warn about the possibility of the development of persistent pulmonary hypertension in newborns of mothers who were on SSRI medications during pregnancy[46]. Payne and Meltzer–Brody[47] discuss current controversies associated with antidepressant use during pregnancy and emphasize taking into account the potential risks and benefits to both the infant and the mother when deciding whether to continue or discontinue a medication. When specifically considering breastfeeding during the postpartum period, a meta–analysis identified a significant amount of previous studies that reported on antidepressant levels in lactating mothers, breast milk, and nursing infants[48]. Levels above 10% of the maternal level were considered to be of clinical significance. Results indicated that breastfeeding infants exposed to sertraline, paroxetine, or nortriptyline seemed unlikely to develop elevated plasma levels of antidepressants, though infants exposed to fluoxetine appeared to be at higher risk of developing elevated levels. Some data also suggests that citalopram may be associated with elevated levels. However, many variables were noted to confound these studies (e.g., whether the infant was exposed to the drug in utero, other health behaviors of the breastfeeding mother), so it is difficult to get an accurate estimate of the drug concentration ingested by the infant. Weissman *et al*[48] emphasizes that whereas the use of antidepressants while breastfeeding does not seem to pose significant negative effects on infant development, continued research on this is necessary to determine whether antidepressant exposures produces no significant long–term risks to the infant. See Hallberg and Sjoblom[49] for a review on the use of SSRIs during breastfeeding. Atypical antipsychotics have not been established to be safe for breastfeeding mothers at this time[50]. Another consideration is that discontinuation of psychotropic medication may also lead to relapse[51], so it is important to consider the potential advantages and disadvantages of this when making medication decisions during the postpartum period. Of note, CBT is generally considered acceptable and safe whereas less is known about potential implications of psychopharmacology.

## 9. Conclusion

This paper reviews the extant literature on anxiety disorders in the postpartum period. The described research shows that anxiety disorders are prevalent during the postpartum period and are often associated with significant impairment and distress. However, the current literature is limited by the fact that few studies clearly differentiate between pregnancy and the postpartum. Another limitation of research to date is that the majority of studies have been retrospective. Thus, much more research is needed to

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better understand the etiology, phenomenology, and course of anxiety disorders during the postpartum period so that appropriate prevention efforts and effective interventions can be implemented. Some research also suggests that examination of anxiety disorder diagnoses at one month postpartum may be helpful in predicting comorbid disorders such as postpartum depression[52], so anxiety screenings may help with prevention efforts. Another study found that a German sample of women with a postpartum anxiety disorder diagnosis scored lower in ratings of maternal self–confidence compared to a control group[53], which might affect the development of secure parent–child relationships. The researchers recommended that interventions should therefore be implemented within the first few weeks postpartum in effort to prevent developmental disorders that might result from low feelings of maternal self–efficacy[53].

Current research suggests that cognitive behavioral therapy and/or use of psychopharmacology may be helpful in treating anxiety disorders during the postpartum period, but much more research is needed to better understand the effectiveness of such treatments, as well as the potential risks of using psychopharmacology. Such research is necessary to give pregnant and breastfeeding mothers the best guidance concerning the use of pharmacotherapy. When considering the pursuit of treatment options, it is also noteworthy to consider that untreated anxiety disorders could also negatively impact the infant, either through hormone excretions in breastmilk or through the effects of anxiety on parent–child behavior. Early identification of symptoms along with effective prevention and intervention efforts will hopefully improve adjustment during the postpartum period and minimize the potential for the development or exacerbation of anxiety disorders.

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