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Mini Review

Anxiety and Panic Disorder in the Perinatal Period

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Abstract

Mood and anxiety disorders are highly prevalent among women and frequently co-occur, with the perinatal period representing a time of heightened vulnerability. Anxiety during pregnancy and the postpartum period is associated with adverse maternal, obstetric, and infant outcomes; however, panic disorder (PD) has received relatively limited focused attention. Evidence suggests that perinatal PD is associated with pregnancy complications, altered foetal neurodevelopment, and negative infant and child outcomes, potentially mediated by maternal neuroendocrine dysregulation. Symptom trajectories across pregnancy and the postpartum period are variable, with some women experiencing exacerbation following childbirth or at weaning. Despite these risks, findings remain inconsistent and largely derived from small or retrospective studies. This highlights the need for a comprehensive synthesis to inform early identification and effective intervention for perinatal PD.

Keywords: Perinatal mental health; Panic disorder; Perinatal anxiety; Pregnancy; Postpartum period

Introduction

Mood and anxiety disorders are among the most prevalent mental health conditions, affecting a substantial portion of the population across the lifespan [1]. These disorders frequently co-occur, with many individuals experiencing both depressive and anxiety symptoms, and women are disproportionately affected [2,3]. The perinatal period is particularly critical, as maternal mood and anxiety difficulties are linked to negative outcomes for both mothers and their children, including adverse pregnancy outcomes and long-term developmental risks [4]. Notably, anxiety during pregnancy is a strong predictor of postpartum depression and is associated with increased risks such as preterm birth, low birth weight, and later neurodevelopmental challenges in offspring [5].

The World Health Organisation (WHO) defines the perinatal period as commencing "at 22 completed weeks (154 days) of gestation (the time when birthweight is normally 500 grams) and ends seven completed days after birth". Pregnancy can be an exciting time for women; however, the medical demands of labour and delivery, as well as adjusting to new maternal demands and expectations, can also be stressful [6,7]. Studies have shown that the postpartum period poses risks for triggering the first onset of anxiety or mood disorders or exacerbating symptoms for women with a history of mental health issues [6,7].

Evidence shows that one in four pregnant women is affected by a mental disorder, while one-twelfth of pregnant women experience the first onset of a disorder [8]. It is estimated that 4- 39% of pregnant women are diagnosed with anxiety disorders [9], and this rate is higher if comorbid disorders are also present [10]. Research has demonstrated that amongst those who suffer from panic disorder, approximately 50% also suffer from comorbid major depression. In women, the peak age at onset of anxiety disorders ranges from mid to late twenties [11]. The prevalence of Panic Disorder (PD) during the perinatal period ranges from 1.3% to 2.0% [12,-16].

Symptoms of panic experienced during the perinatal period are normal occurrences that are often interpreted in the context of the perinatal state [17]. Postpartum women with PD have reported being unable to leave their homes, causing them to worry about the long-term effects and impact of their disorder on their children and the resulting isolation of their children due to their PD [18]. Perinatal anxiety and depression in women lead to feelings of reduced coping capabilities, parental inefficacy, decreased sensitivity and maternal reactivity [7,19].

Beyond its clinical presentation, understanding the maternal and infant outcomes associated with PD during pregnancy and the postpartum period is essential. While perinatal anxiety disorders are linked to adverse obstetric and infant outcomes, PD has received relatively limited focused attention, despite evidence suggesting associations with pregnancy complications and negative infant outcomes [20]. Findings on birth outcomes such as preterm birth and low birth weight remain inconsistent, and research on early infant anxiety and mother-infant dyadic outcomes is limited [3]. According to a recent systematic review, gestational complications such as low birth weight and preterm birth have been associated with maternal PD in most studies [3]. Overall, knowledge of the course and consequences of peripartum PD remains fragmented, highlighting the need for a comprehensive review to support improved early detection and intervention [21].

Healthy interactions between mothers and infants are important aspects that influence a child's physical, cognitive, and psychological development [22]. While symptoms of anxiety are common during pregnancy and the postpartum period, recent findings show that maternal stress and anxiety lead to over activity of the maternal endocrine system. Exposure of the foetus to elevated levels of stress hormones (particularly cortisol) has been linked to negative health consequences in foetuses, which include adverse foetal and developmental consequences, premature labour and delivery [23, 24]

An interesting study by Leader and Correira [25] showed that foetal heart rate increased when pregnant women watched an emotionally charged film, compared to watching neutral films. In another study by Groome et al. [26], compared to healthy mothers, foetuses of anxious mothers demonstrated fewer movements in active sleep and spent more time in quiet sleep [27]. Another study by Van den Bergh [28] found that women with high levels of anxiety had foetuses that were hyperactive, and by 7 months of age, these children were found to be irritable, to be difficult and crying excessively, and by 9 years of age, boys especially showed signs of hyperactivity, attention deficit and likelihood of engaging in aggressive and externalizing behaviours [27,28].

Field et al. [29] in their study demonstrated that babies of mothers with depression tended to have increased levels of cortisol and norepinephrine and decreased levels of serotonin and dopamine, similar to their mothers. Electroencephalographic data show evidence of impaired brain activity in these infants. These children also exhibited poor motor ability, tended to be less active, more lethargic, and withdrawn compared to their peers. This study highlights the importance of treating maternal mental illness and the negative impact of untreated maternal mental disorder can have on the unborn foetus, new-born infant, and the development of the child [27]. Research demonstrates that 3 months of treatment with antidepressant medication for maternal depression greatly reduced children's depressive, anxiety and disruptive behaviours, while untreated depression in mothers was linked to increased rates of these disorders in children [27,30].

It has also been found that the release of catecholamine as a result of maternal stress and anxiety may result in maternal vasoconstriction, which limits oxygen and vital nutrient supply to the foetus [31]. High levels of adrenal hormones due to maternal stress may interfere with foetal central nervous system development [23,32]. Ferraro and colleagues [33] found that physical and sexual violence and anxiety disorders have a negative effect on birth variables (i.e., birth weight, birth length, and being born small for gestational age). It has been reported that after giving birth, a total of 17% of mothers report suffering from anxiety, while 6% report suffering from postpartum depression [7]. Maternal anxiety and stress during the perinatal and postpartum period have received little attention over the years [7,19].

A retrospective study conducted by Northcott and Stein [34] found a relationship between lactation/weaning and panic symptoms. In 43 cases of breastfed babies, a total of 12 reported weaning had exacerbated maternal panic symptoms. In another study of 22 women conducted by Villeponteaux and colleagues [35], one participant reported the onset of panic at weaning. Moreover, Klein and colleagues [36] in their study found that out of 16 women who did not breastfeed, 9 reported having panic attacks during the postpartum period, while only 2 out of 17 women who did breastfeed reported experiencing panic attacks during the postpartum period. Onsets of panic attacks at weaning were reported by 6 of the women.

Research by Sholomskas et al. [37] revealed that during the first 12 weeks postpartum, significantly more women reported onset of panic attacks than would be expected by chance (10.9% vs 0.92%). The mean time of onset was found to be 7.3 weeks postpartum. Retrospective studies and case-reports have found improvement in panic symptoms during the pregnancy period, and during the postpartum period, worsening of symptoms has been reported, although findings from these studies are conflicting, this general pattern has been observed. Although these studies suggest a possible association between breastfeeding and reduced

postpartum panic symptoms, the evidence is based on small, retrospective samples and therefore cannot establish a protective effect. The apparent increase in panic symptoms at weaning may reflect hormonal or psychosocial changes, but alternative explanations and confounding factors limit the strength of these conclusions.

It has been commonly found that symptom severity does not experience any changes during the perinatal period. Wisner and colleagues [38] in their study revealed that of 22 women with PD and comorbid mood disorder, the most common effect of pregnancy on their panic symptoms was no change in symptom severity from baseline during pregnancy (31 pregnancies-69%). When changes did occur however, it was likely to be a decrease in symptom severity (12 pregnancies- 27%). Thirty-one per cent (14 pregnancies) of women reported exacerbation of symptoms in the postpartum period, while none of the women reported a decrease in symptoms during the postpartum period. This study suggests that for most women, symptom severity prior to their pregnancy may be the best predictor of the perinatal course of PD.

The lifetime impact and costs of perinatal anxiety and depression was found to be substantial, as findings show that offspring of women with the illness are at risk of suffering from negative long-lasting consequences including physical and mental health, quality of life, and career prospects; and there is evidence that show that these effects may even impact a third generation [39]. It is therefore important that this area receives greater attention as a major public health priority [39].

Treatment for Perinatal Anxiety

Treatment for perinatal anxiety and depression typically includes Cognitive Behaviour Therapy [40], anti-panic medications [41,42] antidepressant medications, increasing social support, or interpersonal psychotherapy [7,43]. Women are, however, apprehensive about the use of psychotropic medications during pregnancy and breastfeeding [7,43] therefore, alternative therapies such as music therapy, and light therapy may increase the chances of women seeking treatment, as well as providing women with an inexpensive and non-stigmatizing method of treatment. Other self-care strategies recommended include reduction of sleep deprivation, relaxation techniques and elimination of caffeine [44]. Most importantly, differential diagnosis is imperative prior to the initiation of treatment for an anxiety disorder during the perinatal period.

Medical issues such as thyroid dysfunction and anaemia consist of symptoms similar to those of panic or generalised anxiety disorder. Preeclampsia (pregnancy-induced hypertension) can also be associated to panic due to symptoms such as racing heart rate, breathing difficulty, and generalized anxiety [45]. A medical evaluation that assesses thyroid function, haemoglobin levels and blood pressure should be conducted especially for women reporting a new onset of anxiety during the perinatal period.

Psychotherapy

Cognitive Behavioural Therapy (CBT): A study by Robinson et al. [40] found CBT to be an effective treatment for panic disorder during pregnancy and lactation, reporting good control of anxiety symptoms as well as clinical remission of PD [10]. Marchesi et al. [10] state that given its evidence of efficacy and safety, CBT should be the first line of treatment for anxiety disorders in this population.

Interpersonal Therapy (IPT): IPT is another modality of treatment suitable for pregnant and postpartum women experiencing depression and anxiety as a result of the difficulties transitioning and adjusting to their roles. A pilot study conducted on 13 pregnant women revealed that IPT significantly reduced their depressive symptoms with no reports of postpartum relapse [27,46] Another study comparing 16 weekly sessions of parenting education to treat depression in pregnancy and IPT found that those receiving IPT demonstrated greater reduction of symptoms and greater improvement in mood [27,46], O'Hara et al. [47] found that IPT increased social adjustments and reduced depressive symptoms in postpartum women.

Biological Therapy

Light therapy: Studies investigating the use of light therapy in treating depression in pregnant women have demonstrated its efficacy in producing promising outcomes. A study found that out of 16 pregnant women with depression who were treated with 3 to 5 weeks of bright light therapy, 14 showed significant improvement in their symptoms [48]. Another study compared two groups of women receiving 5 weeks of bright-light therapy with one group receiving bright light therapy of 7000 lux and the other group receiving 500 lux, it was found that 10 weeks after treatment, the treatment group showed a significant difference [49].

Music therapy: Music therapy has been described as "a systematic process where the therapist helps the patient promote health using music experiences and the relationships that develop through them" [7,50]. Music therapy is a cost-effective, feasible and non-stigmatizing option. Natural therapies such as these provide women with the opportunities to bond with their baby in a comfortable setting, provide them with the confidence and sense of control over their stress, anxiety and depression, and offer them alternative strategies and coping skills in managing their illness [7].

Pharmacological Treatments

The use of selective serotonin reuptake inhibitors (SSRIs) during

pregnancy has had contradictory findings, and over the past two decades, studies have produced positive and negative outcomes of its use during pregnancy [10]. A few case reports have supported the use of citalopram [51] and escitalopram [52] during pregnancy [10]. Evidence shows that women treated with citalopram and escitalopram achieved good control of their anxiety symptoms and produced healthy outcomes for their child. Adding mirtazapine to the SSRIs treatment has been found to assist in dramatically reducing nausea, appetite loss and insomnia with no neonatal complications to the baby reported [51].

The use of tricyclic anti-depressants (TCAs), such as nortriptyline for PD patients [53] and imipramine [42,54] have been found to be effective pharmacotherapy with patients reporting remission from symptoms of panic. In another study, 75% of women reported responding to low doses of imipramine (10-40mg/day), leading to a reduction in the number of panic attacks experienced from 12.9 times per week before treatment to 2.7 times per week after treatment [54]. SSRIs have been found to improve symptoms of PD in pregnancy and postpartum period with no significant side effects for the babies [10].

During pregnancy, many women refuse the use of medication due to fear of the possible risk of teratogenicity, potential negative infant development, and adverse neonatal effects at birth [27]. Therefore, in cases where medical treatment is necessary, it is critical to weigh the risks versus the benefits of medicating mothers with mental illness and exposing the foetus to psychotropic medications in the perinatal period. This is because, as mentioned previously, untreated maternal mood and anxiety disorders during pregnancy have been shown to have detrimental effects both short and long term on foetuses and children [27].

A study by Ride and Lancsar [55] investigating women's preference for treatment of perinatal depression and anxiety found that combined counselling and medication was the most acceptable form of treatment to non-breastfeeding postnatal women; however many faced barriers due to cost. It was found that women also preferred individual counselling to group-based counselling and seeking peer support due to stigma [55,56]. Women expressed the importance of the quality of the therapeutic relationship, emphasizing qualities such as being non-judgemental, empathetic and trustworthy as important qualities of the therapist [55]. Research has found that uptake for treatment was lower among women with less social support and lower levels of education [55,57]. Lower levels of education were also found to be associated to lower preferences for cornerstone treatments, counselling and medication [55].

Untreated PD could lead to negative effects on foetal development, altering the neurobehavioral development of the foetus [18, 32, 44]. Several studies have revealed shorter length of gestation and lower birth weights in infants of non-treated depressed women. A study by Uguz and colleagues [51] found that PD more negatively affected birth weight and gestational age of infants as compared to major depression and generalized anxiety disorder. Therefore, careful assessments and risk-assessment is required prior to making treatment decisions or initiation of treatment [58-60].

Anxiety disorders and particularly PD, if left untreated, could have negative effects of foetal development. Appropriate differential diagnosis is important before initiating treatment for an anxiety disorder during the perinatal period, although this issue has not been addressed in the research literature. Anxiety disorders in the perinatal period are an under-researched area. Future studies should focus on the presentation and predictors of perinatal PD as well as the course of pre-existing PD in pregnant women. Future research should also focus on determining whether the postpartum period increases the risk for new onset of PD.

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