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Stress, depression and anxiety during pregnancy: How does it impact on children and how can we intervene early?

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Abstract

There is now a strong body of evidence confirming that antenatal mental health issues are a major cause of maternal morbidity, with a number of potentially adverse consequences for pregnant women, as well as for their children and family. However poorer outcomes for children are not inevitable, and can be addressed at least in part by prevention and early intervention strategies which integrate perinatal mental health, child health and public health.

Keywords

anxiety, stress, we, can, depression, during, children, pregnancy:, does, early?, intervene, impact

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Stress, depression and anxiety during pregnancy: How does it impact on children and how can we intervene early?

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There is now a strong body of evidence confirming that antenatal mental health issues are a major cause of maternal morbidity, with a number of potentially adverse consequences for pregnant women, as well as for their children and family. However poorer outcomes for children are not inevitable, and can be addressed at least in part by prevention and early intervention strategies which integrate perinatal mental health, child health and public health.
Keywords: pregnancy, depression, anxiety, child outcomes, early intervention

Although pregnancy is often considered a time of happiness and elation, for many women it can represent a time of deep despondency and despair. Around one in five women will experience some form of mental health morbidity during pregnancy, with rates of antenatal depressive disorders (12.7%) (Gaynes et al., 2005) and anxiety disorders (15.2%) (Dennis et al., 2017) reported to be higher than physical pregnancy complications such as gestational diabetes and hypertension (Centre for Epidemiology & Evidence, 2016). Yet many women who experience significant psychological ill health at this critical time are not identified nor treated (Reay et al., 2011), greatly increasing their risk for poorer health outcomes for themselves and their children (Kingston et al., 2012). Further, it has been reported that perinatal depression, anxiety and psychosis carry a total lifetime cost for UK society of about £8.1 billion for each one-year cohort of births, with nearly three-quarters of this cost relating to adverse impacts of perinatal mental health morbidity on the child rather than the mother (Bauer et al., 2014).

While the spectrum of perinatal mental health morbidity spans both high prevalence (e.g., depression) and low prevalence (e.g., bipolar) disorders, this short paper will focus on the impact of antenatal stress, depression and anxiety on foetal, neonatal and child outcomes. Opportunities for prevention and early intervention will also be discussed.

IMPACT OF ANTENATAL STRESS, DEPRESSION AND ANXIETY ON FOETAL AND NEONATAL OUTCOMES

A vastly growing literature has been fundamental in increasing our understanding of how poor maternal mental health can adversely impact on foetal and neonatal outcomes. Application of the foetal programming hypothesis (Barker, 1995) in perinatal mental health research over the past 10-15 years has demonstrated that high levels of distress experienced during pregnancy activate the maternal hypothalamic-pituitary-adrenal HPA-axis which can, in turn, adversely impact on the development of the foetal nervous system and alter the functioning of the foetal HPA-axis (Dunkel Schetter & Tanner, 2012).

> Maternal distress in pregnancy impacts the development of the foetal nervous system

Recent reviews have shown that significant maternal stress due to major life events (e.g., bereavement), community-wide disasters (e.g., earthquakes, ice storms) and chronic stressors (e.g., household financial strain) are associated with an increased risk for preterm birth and low birth weight, even after controlling for other maternal factors including smoking, education and parity (Dunkel Schetter & Tanner, 2012).

Antenatal depression has also been associated with an increased risk for premature delivery, with the most significant findings in studies where depressive symptoms have met a diagnostic threshold, and in studies involving women living in low- and middle-income countries (Stein et al., 2014). An association between prenatal maternal mood symptoms and down-regulation of placental 11βHSD2 has also been reported (O'Donnell et al., 2012). Evidence relating to the impact of antenatal anxiety on neonatal outcomes is less consistent; however, a small number of studies have shown that women with high levels

of 'pregnancy-specific anxiety' – a contextually-based state anxiety tied specifically to concerns about the current pregnancy – are at greater risk of preterm birth, after controlling for socio-demographic and obstetric factors (e.g., Kramer et al., 2009). Maternal anxiety during pregnancy has also been linked to an increased fear of childbirth (Hall et al., 2009) and a preference for caesarean delivery (Rubertsson et al., 2014).

IMPACT OF ANTENATAL STRESS, DEPRESSION AND ANXIETY ON CHILD DEVELOPMENTAL TRAJECTORIES

Extension of foetal programming studies into early childhood has shown that antenatal stress or anxiety is associated with impairments in the stress-induced hypothalamic-pituitary-adrenal HPA-axis responses of children up to six years of age (Grant et al., 2009; Gutteling et al., 2005; Gutteling et al., 2004). In addition, infants of women who suffer from depression or anxiety during pregnancy can be at increased risk for emotional and behavioural problems (including greater negative affect, externalising difficulties and antisocial behaviours) during the first years of life and into adolescence, although a number of studies have shown that these associations are reduced when the severity and chronicity of postnatal maternal mental health problems are accounted for (e.g., Van Batenburg-Eddes et al., 2013; Pawlby et al., 2009).

Associations exist between antenatal depression and verbal IQ scores in childhood

Significant associations between antenatal depression or anxiety and verbal IQ scores in childhood and exam performance in the school years have also been reported (Pearson et al., 2016; Barker et al., 2011). It is important to note, however, that the effect sizes in these child cognitive outcome studies are generally small, and not all findings are unequivocal (Stein et al., 2014).

IMPACT OF ANTENATAL STRESS, DEPRESSION AND ANXIETY ON MATERNAL ATTACHMENT AND BONDING

Empirical data has long suggested that postnatal depression can be pernicious for infant attachment, and is associated with difficult infant temperament and mother-infant interactional deficits (Martins & Gaffan, 2000). More recently, however, it has been shown that women who experience depressive symptoms during pregnancy can also have lower levels of maternal-fetal attachment (McFarland et al., 2011) and bonding (Misri & Kendrick, 2008), and that infants of mothers diagnosed with antenatal depression may be more likely to have a disorganised (insecure) attachment style at 12 months of age (Hayes et al., 2013). While the quality of early mother-infant relationship and sensitive maternal interactions can reduce the strength of this association, even sub-clinical levels of maternal depression or anxiety that continue into the postpartum can make it harder for mothers to be responsive and sensitive to their child, and to manage difficult parent-child interactions in a positive way.

OPPORTUNITIES FOR PREVENTION AND EARLY INTERVENTION

While there has been an increase in awareness of the importance of perinatal mental health and a decline in stigmatising or unhelpful attitudes towards women with perinatal depression in recent years (e.g. Beyondblue, 2013), individual, social and health system-level barriers remain significant obstacles to women seeking help at this time. While these barriers may be overcome in part by health promotion and psychoeducation strategies that target women, health professionals and the community (Kingston et al., 2014; Reay et al., 2011; Sword et al., 2008; Dennis & Chung-Lee, 2006; Thompson et al., 2004; Murray et al., 2003), such campaigns must be complemented by health care approaches that are well resourced, and which enhance timely access to appropriate treatment.

Many countries now have integrated perinatal mental health programmes

To this end, a growing number of countries have advocated for, developed and implemented integrated perinatal mental health programs which centre on the detection of current symptoms of depression or anxiety (using relevant 'screening' measures, such as the Edinburgh Depression Scale) and the identification of a range of risk and protective factors known to affect perinatal mental health for both mother and infant, including her current and past psychological health and social circumstances (using measures such as the Antenatal Risk Questionnaire, Austin et al., 2013). While specific recommendations differ between locations, the objective of these prevention and early intervention programs is uniform: to identify possible or probable illness, or risk of illness, early and to monitor or intervene as appropriate, with a view to improving maternal and child health outcomes at this critical time.

Although implementation of these programs has not been without controversy, evidence to support the overall clinical benefit of screening for depression during the perinatal period is growing (O'Connor et al., 2016): not only does routine screening have the potential to improve detection of depression (Kim et al.,

2009), but it may also lead to earlier therapy initiation (Yawn et al., 2012), reduced episode duration and, in turn, a better treatment response (Ghio et al., 2015). Moreover, depression screening and broader psychosocial assessment is overwhelmingly acceptable to women, particularly when provided with a clear explanation as to why the questions are being asked; when sensitive and helpful feedback from their health care provider in relation to responses is given, and when sufficient time for this discussion and feedback to take place is allocated (Reilly et al., 2015; Austin et al., 2013; Brealey et al., 2010). Adequate training and resources, structured referral pathways for women, and supportive systems for staff are critical not only for the successful implementation of these programs, but also for the subsequent access to and delivery of effective treatment and supportive interventions.

Adverse outcomes for children of women who experience pregnancy distress are not inevitable

As noted by Stein and colleagues (2014), adverse outcomes for children of women who experience stress, depression or anxiety during pregnancy are not inevitable. The importance of prevention and early intervention strategies which aim to circumvent these negative consequences, and which integrate perinatal mental health, child health and public health, cannot be understated.

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THREE WAYS FOR HEALTH PROFESSIONALS TO HELP STRENGTHEN SOCIAL SUPPORT FOR PREGNANT WOMEN

A small Swedish study based on interviews with 15 pregnant women and 14 partners (fathers and co-mothers) has recommended that health professionals engage directly with partners of women, providing information and teaching on how to support their pregnant partner.

The women in the study emphasised in particular the value of support from partners. They described the importance of jointly preparing for the birth and parenthood.

It's been really important. Mainly for the feeling that we're in this together….that you are not alone, we are two in it….It's like a feeling of security.

The women said that receiving professional support as a couple helped their togetherness and shared sense of responsibility.

The partners in the study emphasised their desire for practical information on how to help their partner during pregnancy and childbirth, about care of the baby and issues such as parental leave and baby products. The information itself was not the only important thing for partners. The fact of receiving information specifically about their role had the effect of recognising and confirming their part in the pregnancy and parenthood.

The study also advised that health professionals can support connection between women expecting a baby through parent education classes. The women's partners also emphasised the need for opportunities to meet other couples in antenatal classes. They described the frustration of being excluded from classes, either because they were not invited at all or because classes took place during working hours.

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