

Making a difference: mental health care in pregnancy

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Making a difference: mental health care in pregnancy

- Postnatal mental health problems have been focus of attention
 - Postnatal depression (PND)-up to 15% of women, public education, screening, effective treatments, support groups
 - Puerperal psychosis-long recognised, uncommon, severe
 - Suicide the leading indirect cause of maternal death in late pregnancy or following delivery (infanticide)
- Mental health problems *during* pregnancy relatively neglected

Making a difference: mental health care in pregnancy

- Why is mental health care in pregnancy important?
 - Frequency of mental health problems in pregnancy
 - Effects of mental health problems in pregnancy



Prevalence of psychiatric disorders

- National Survey of Mental Health and Wellbeing 2007 (12 month prevalence)-women
 - Any mental disorder 22.3%
 - Anxiety disorder 17.9%
 - Mood disorder 7.1%
 - Substance abuse disorder 5.1%
- Low prevalence disorders
 - Psychosis 0.5%
 - Bipolar disorder 1-2%

Depression during pregnancy

- Depressive symptoms are common during pregnancy, peak during T3 and fall following delivery
 - 25% have high rates of depressive symptoms,
 - 10% have depressive disorder during pregnancy
 - Recurrent major depression
 - Bipolar disorder
 - New onset antenatal depression

Impact of untreated depression in pregnancy

- Mother
 - Morbidity associated with depression
 - Lack of enjoyment, loss of interest and motivation
 - Fatigue, sleep disturbance, weight loss
 - Poor self-care and poor compliance with antenatal care
 - More likely to smoke and to use alcohol or illicit drugs
 - Social, occupational and financial effects
 - Effect on interaction with partner and other children
 - Risk of self-harm and/or suicide
 - Increased risk gestational hypertension
 - 2.5 fold increase risk for preeclampsia
 - Increased rate of spontaneous abortion

Impact of untreated depression in pregnancy

- Foetus of depressed mother
 - Ultrasound
 - Spends more time in sleep and exhibits less body movement than foetus of non-depressed mother
 - Reduced foetal heart rate response to vibroacoustic stimulation
 - Increased frequency of intrauterine growth retardation (<2500g)
 - Increased rates of spontaneous preterm birth (< 37 weeks gestation)-risk increases with increasing severity of depression
 - Smaller head circumference, lower APGAR scores, admission to NICU, and small for gestational age(<10th percentile)

Impact of untreated depression in pregnancy

- Neonate
 - Cry excessively, and difficult to soothe
 - Poor motor ability, less active, more lethargic and more withdrawn than is typical for their age
 - Poorer performance during examination
 - Less expressive
 - Less motor tone, lower activity levels, more irritability, less robustness and less endurance during the examination
 - Physiologically less developed
 - Greater relative right frontal EEG asymmetry (due to reduced left hemisphere activation)
 - Lower vagal tone
 - Have elevated baseline cortisol levels

Impact of untreated depression in pregnancy

- Children

- Poor maternal infant bonding in utero with later effects on attachment and bonding between mother and infant
- Poorer long term developmental outcomes for the child
 - Developmental delay measured at 18 months
 - Impaired language development
 - Lowered IQ in adolescence
- Psychopathology in children
 - Increased risk of behavioural and emotional problems
 - Significant association with criminality

Anxiety during pregnancy

- Peak age of onset of anxiety disorders in women occurs in mid- to late-20s
 - Panic disorder and GAD prevalence unchanged in pregnancy
 - Onset of OCD commonly pptd by pregnancy
 - PTSD may follow invasive medical procedures, O&G procedures

Impact of untreated anxiety in pregnancy

- Mother
 - Morbidity associated with anxiety
 - Worry, restlessness, irritability fatigue
 - More likely to smoke and to use alcohol or illicit drugs
 - Commonly associated depression
 - Social, occupational and financial effects
 - Effect on interaction with partner and other children
 - Risk of self-harm and/or suicide
 - Increased risk of pre-eclampsia

Impact of untreated anxiety in pregnancy

- Foetus of anxious mother
 - Ultrasound
 - Evidence of increased arousal of foetus- alterations of foetal heart rate variability (a marker for foetal distress), foetal movement patterns and foetal sleep-wake cycles
 - Increased frequency of intrauterine growth retardation (<2500g)
 - Increased rates of spontaneous preterm birth (< 37 weeks gestation)

Impact of untreated anxiety in pregnancy

- Neonate

- Found to be highly reactive, irritable and difficult
- Have poorer interaction with mother
- Poorer performance on Bayley Scales of Infant Development
- Physiological differences
 - Greater relative frontal EEG activation
 - Lower vagal tone
 - Spend more time in deep sleep and less time in quiet and active alert states
- Poorer performance during examination
 - Lower motor organisation and autonomic stability

Impact of untreated anxiety in pregnancy

- Children

- Regulation problems at the cognitive, behavioural and emotional levels
 - *At 24 months* infants have more sleeping, activity and feeding problems
 - *At age 4yo and 7yo-* increased rate of emotional and behavioural problems
 - *At age 8-9yo-* increased rate of ADHD, externalising problems and anxiety
 - *Up to 14-15yo* increased behavioural disorders
 - *Adolescents-* impulsive behaviour when performing computerised cognitive tasks; lower scores on intelligence subtests

In summary

- Maternal stress, anxiety or depression are associated with several different types of adverse outcomes in the child

What is going on?

- Foetal programming hypothesis.....the environment in utero can alter the development of the foetus during particular sensitive periods, with a permanent effect on the phenotype (Barker 1995)
- Predictive adaptive response.....foetal development is altered in a way that adapts the future child to the world in which it will find itself.....if mother is detecting signs of danger (stress) this leads to changes which would be adaptive in stressful situations in the world

Mechanisms by which antenatal stress may affect the foetus

- Cortisol thought to play a key role
 - Maternal stress hormones, esp cortisol are transmitted across the placenta
 - May be down regulation of 11β -HSD2 activity in the placenta, so more cortisol crosses from maternal to foetal blood
- Alteration of uterine blood flow
 - Acute- due to increase in noradrenaline
 - Chronic-due to failure in placental trophoblastic invasion in early pregnancy
- Other?

Critical window

- Developmental plasticity is characterised by critical windows when particular organs or systems are being developed
- Prenatal and early postnatal exposure to stress can lead to lasting changes in neurogenesis
 - Brain increases 17 fold in 2nd half of pregnancy and 4 fold in 1st 4-5 years of life
- Cortisol can have profound effects on the developing brain and spinal cord-can modulate cell proliferation and differentiation and synaptic development in various brain regions

How much does it matter?

- Prenatal stress doubles the risk of emotional and/or behavioural symptoms
- The attributable load of behavioural/emotional problems in the whole population due to antenatal anxiety/stress is 10-15%
 - In Australia 300,000 children have neurodevelopmental problems
 - Early intervention has the potential to reduce the number affected in Australia by 35-50,000

What can we do about it?

- If mother is stressed in pregnancy, the outcome for the child is influenced by
 - Timing of the stress – different regions of the brain develop at different times
 - Nature of the stress
 - Genetic vulnerability of mother and child
 - What happens in the post-natal period

Interventions need to start in pregnancy

- Early interventions have greater potential for gain—especially in utero/early infancy when neuroplasticity is greatest
 - Screen for emotional problems
 - Tailored interventions
- Reducing anxiety/stress in pregnancy may *prevent* effects in children



The early postnatal period is also important

- Quality of mothering can attenuate or exacerbate the effects of prenatal stress
- A secure attachment attenuates the association between in utero cortisol exposure and infant cognitive development



How can services be provided

- Consultation-Liaison model
 - General practice, obstetrics, maternity ward, MCHN
 - Primary and/or secondary consultation
 - Diagnostic assessment
 - Risk/benefit of treatment v no treatment
 - Which medication? Special precautions in pregnancy and with breastfeeding?
 - Management plan-pregnancy, delivery, postnatal
 - Shared care during pregnancy
 - Mother-infant interaction-maternal competence; attachment and bonding
 - Ongoing care in postnatal period (incl MBU)

**Making a
difference?**



Nurturing the vulnerable brain

- The Melbourne high risk birth cohort study
- A unique approach to establishing the early life risk factors of child, youth and adult mental health problems
 - Follow a group of infants (mothers recruited during pregnancy) with risk factors impacting on healthy neurobiological and psychosocial development e.g. teenage mother, maternal mental illness, ID, substance use, violent relationship

Nurturing the vulnerable brain

- The study will provide a comprehensive overview of developmental risk factors including
 - Prenatal and obstetric factors such as alcohol exposure, birth complications
 - Maternal mental health issues such as stress and depression in pregnancy and the postnatal period
 - The impact of maternal mental disorder on parenting, attachment and child development
 - Child abuse and neglect and impact on neurodevelopment and mental health

Nurturing the vulnerable brain

- This approach will entail establishing
 - How their impact can be ameliorated such that the individual can experience their optimum mental health
 - So, a key longer term aim is the development of effective interventions.....true early intervention for prevention of later mental health problems

1,000



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