Perinatal maternal mental illness and its effect on the child

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Early Intervention Foundation 2014
Anxiety and depression
the scale of the problem

• The single biggest cause of misery in our community is mental illness
• 40% of all disability is due to mental illness

• % of population

• Anxiety and depression 8.8
• Generalised anxiety 4.4
• Depression 2.6

LSE report 2006 (Lord Layard)
• Women have as many symptoms of depression and anxiety during pregnancy as postnatally.

• 10-25% have major or minor depression during the perinatal period.

• Pregnancy can also be a time of domestic abuse and relationship strain.
Maternal Depression (EPDS) n=8398

13+

18 weeks AN

80.6%

11.8%

32 weeks AN

77.2%

3.4%

5.7%

1.9%

4.6%

1.1%

3.4%

2.7%

8 weeks PN

Heron et al 2004
The mother’s emotional state in pregnancy and postnatally can have a long lasting effect on her child.
From fetus

To child
Fetal programming

Environment in the womb, during different sensitive periods for specific outcomes, can alter the development of the fetus, with a permanent effect on the child.
Prenatal stress is associated with increased levels in child:

- Anxiety and Depression
- Behavioural problems-ADHD, conduct disorder
- Impaired cognitive development, especially language
- Sleep problems in infants
- Neonatal behaviour
- More difficult infant temperament
- Victimisation in childhood
- Schizophrenia, Autism?
Prenatal stress associated with increased:

- Reduced birthweight and gestational age
- Mixed handedness
- Altered finger print pattern
- Decreased telomere length
- Asthma
- Altered immune function
Examples of prenatal stress reported to be associated with changes in development and behavior

- Maternal anxiety and depression
- Maternal daily hassles
- Pregnancy specific anxiety
- Partner or family discord
- Distress caused by 6 day war in Israel, 1967
- Experience of acute disasters, e.g. freezing ice storm, hurricane or 9/11

- It’s not just extreme or toxic stress or diagnosed mental illness
Postnatal depression associated with child:

- Increased emotional problems (anxiety and depression)
- Increased behavioural problems, including conduct disorder
- Increased cognitive problems

- Although a recent study showed no increase in cognitive problems when antenatal maternal mood is allowed for
Depressed mothers fail to interact well with their infants

Can be over intrusive
Or blank
ALSPAC
Avon Longitudinal Study of Parents and Children

• Large prospective birth cohort
  ~14,000 pregnant women recruited around Bristol in 1990-1991

• Detailed information on children at 4, 7, 11 and 13 years
ALSPAC study

Maternal anxiety—at 18 and 32 weeks of pregnancy
Compared children of 15% most anxious mothers
at 32 weeks with the rest

Child behaviour
—maternal report at from 4 to 13 years old.
Strengths and Difficulties Questionnaire (SDQ).
Attention deficit/hyperactivity;
anxiety and depression;
conduct disorder
Multivariate Analysis

Cohort with complete data
n = 7, 363

- Maternal Postnatal anxiety and depression
- Paternal pre and postnatal anxiety and depression
- Parenting- warmth, hostility etc
- Maternal age
- Birthweight
- Gestational age
- Smoking
- Alcohol
- Psychosocial factors: crowding (SES)
- Maternal education
Total SDQ scores and maternal anxiety at 32 weeks - allowing for BW, GA, maternal age, maternal education, postnatal depression, postnatal anxiety, SES, maternal substance use, parenting, paternal anxiety etc. Results similar with prenatal depression.
ALSPAC. Predicted population prevalence of a probable mental health disorder in children born to high (top 15%: open bars) and low prenatal anxiety (full bars) mothers. Based on SDQ scores. Results similar with prenatal depression.

(O’Donnell et al in 2014)
The combined effects of raised anxiety both antenatally (32 weeks) and postnatally (33 months) on child outcome up to 13 years
Similar results with depression
Maternal stress/anxiety/mental illness

transplacental passage cortisol

11βHSD2

cortisol

cort/isol ??
• Integrity of the right UF significantly correlated with prenatal stressful life events

• Associations independent of obstetric and socio-demographic factors and postnatal stressful life events and depression:

• No associations with control Inferior longitudinal fasciculus tract
Why are children affected in different ways by prenatal stress? Different genetic vulnerabilities?

Using ALSPAC cohort

- COMT variants associated with significantly increased but small risk of ADHD, conduct disorder and aspects of cognitive problems in the child
- BDNF variants associated with significantly increased but small risk of emotional problems in the child.

- O’Donnell et al in prep
Epigenetic modifications—basis for fetal programming

Epigenetic changes are functionally relevant modifications to the genome that do not involve a change in nucleotide sequence. Can persist to grandchild generation.
Epigenetic changes changes in glucorticoid receptor in cord blood associated with prenatal pregnancy specific anxiety (Hompes et al 2013)
Is it causal?

- Animal studies - yes
- Studies which allow for confounders - yes
- Underlying mechanisms - yes
- Changes observed at birth, including epigenetic - yes
Implications for society

Crime

- Perinatal mental illness causes an increase in child:
- Conduct disorder (includes aggression)
- ADHD
- Lower cognitive development

- All these are strong risk factors for later criminal behaviour
Unborn babies targeted in crackdown on criminality

Blair launches policy imported from US to intervene during pregnancy to head off antisocial behaviour

Lucy Ward
Social affairs correspondent

Unborn babies judged to be at most risk of social exclusion and turning to criminality are to be targeted in a controversial new scheme to be promoted by Downing Street today.

In an effort to intervene as early as possible in troubled families, first-time mothers identified just 16 weeks after conception will be given intensive weekly support from midwives and health visitors until the unborn child reaches two years old.

Unveiling the findings of a Downing Street review, Tony Blair will make clear the government is prepared to single out babies still in the womb to break cycles of deprivation and behaviour.

He will also acknowledge that the state must do more to help a minority of families and will stress that the support they need cannot come through the promotion of marriage.

In an attempt to draw a clear division between Labour and the Conservatives Mr Blair will say that making marriage the primary focus of family policy will be ineffective and could lead to discrimination.

The support includes help with giving up smoking or drug use in pregnancy, followed by a focus on bonding with the new baby, understanding behaviour such as crying, and encouraging a mother to develop her skills and resources to be a good parent. The programme is voluntary and the intention is to capitalise on the so-called “magic moment” when parents are receptive to support for themselves and their baby.

In the US, three large trials have seen consistently positive results, including higher IQ levels and language development in children, lower levels of abuse, neglect and child injuries in families, and improvements in the antenatal health and job prospects of mothers.

Proponents of the scheme, pioneered by the American paediatrician Professor David Oles, also point to the long-term cost savings, estimated at almost £25,000 (€25,500) by the time a child is 10.

The decision to target unborn babies is, in effect, an acknowledgement by Mr Blair that the government’s focus on tackling social exclusion has left a hardcore – 2-3% – of the most excluded families behind.

The prime minister’s introduction to today’s family review says the state must help such children out of poverty and...
Nurse Family Partnership:
Home visits for teenage mothers focus on:

• Teaching improved health related behaviour e.g. mother give up smoking
• Teaching competent care of children-better parenting
• Help with maternal personal development (e.g. family planning, more education, help with gaining employment)
• Also gave much social support
Outcomes from Nurse Family Partnership (David Olds)

- Teenage mothers had heavier babies
- Less smoking
- Less child maltreatment during the first 2 years
- By 15 years the children had fewer behavioural problems and lower smoking
- *and less than half the rate of criminal convictions and breaches of probation*
- But the benefits for crime and violence were mainly for girls.
- Boys may need a top up intervention in adolescence
Perinatal depression care

(from Gavin, Meltzer-Brody, Glover, and Gaynes in press)

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<th>Any treatment</th>
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Lena

•  “Emphasis of maternity service was 98% medical physical thing and 2% emotional”

Anne

“They’re more interested in you medically-have you got any lumps and bumps and pain?....They’re not asking how are you feeling at the moment?-are you coping?”

in Zoe Darwin PhD 2012
Role of Professionals

• Different for each mother

• Detect and treat anxiety and depression in pregnancy

• Help with relationship problems

• Help to create more social support

• Practical help with housing etc

• Help to teach sensitive mothering - video feedback
How women can help themselves

• take time for themselves each day to relax

• yoga

• massage

• sitting down and listening to music
How we can all help support pregnant women

• Fathers

• Employers

• Grandparents

• Friends
www.beginbeforebirth.org