Domestic Violence and other social determinants of perinatal mental health: How can we prevent maternal and child morbidity and mortality?

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Professor of Women’s Mental Health
Disclosure of interests

NIHR Programme Grant for Applied Research on the Effectiveness of perinatal Mental health services (ESMI)

NIHR Research Professorship in maternal mental health

Chair of the NICE guideline (update) on antenatal and postnatal mental health

Member of the NICE/SCIE PDG on preventing domestic violence, World Health Organisation guidance on Violence Against Women and Girls and on the World Psychiatric Association working group on Intimate Partner and Sexual Violence.

Chair of the World Psychiatric Association steering group on perinatal mental health which published a call to action on International Women’s Day 2017

I have a personal history of depression, including admission for postnatal depression, and a family history of severe trauma
Stein et al. Effects of perinatal mental disorders on the fetus and child. The Lancet (Perinatal mental health series) 2014

POVERTY

CHRONICITY
Prevalence of any common mental disorder by household income, England 2007

Base: all adults

Percent

Equivalised household income

Highest 2nd 3rd 4th Lowest
Risk factors for antenatal and postnatal depression: systematic review evidence

**Risk factors for antenatal depression**

- **Social risk factors**
  - Socioeconomic status
  - Exposure to trauma, negative life events and stress
  - Domestic violence
  - Migration status
  - Relationship and social support
  - Reproductive intention

- **Psychological risk factors**
  - Personality traits: high neuroticism
  - Prior psychopathology: depression, anxiety, PTSD, substance misuse

- **Biological risk factors**
  - Age
  - Genetic and hormonal susceptibility
  - Chronic diseases
  - Medical illness
  - Pregnancy complications

- **Domestic violence (HIC, LMIC)**
- Life stress and major/negative life events (HIC, LMIC)
- Low socio-economic status (LMIC, small association in HIC)
- Absence of social or relationship support (HIC, LMIC)
- Intention to get pregnant (HIC, small to moderate in LMIC)

**Risk factors for postnatal depression**

- **Domestic violence, previous abuse (HIC, LMIC)**
- Negative life events, low social support (HIC, LMIC)
- Low partner support, marital difficulties (LMIC, small to medium in HIC)
- Migration status (HIC)
- Low socio-economic status (LMIC, small in HIC)
- Depression or unhappiness in pregnancy (HIC, LMIC)
- Anxiety in pregnancy (HIC)
- History of depression (HIC, LMIC)
- Neuroticism (HIC)
- Substance misuse (HIC)
  - Family history of any psychiatric illness (HIC)
- Increased parity (rural LMIC context)
- Multiple births (HIC)
- Chronic illness or medical illness (HIC, LMIC)
- Preterm birth, low birth weight (HIC, LMIC)
- No association with use of assisted reproductive technologies (HIC)

**Key**

- Risk characterised as strong if systematic evidence listed the risk factor to be strong, significant, or top ranked
- Risk characterised as medium to strong if some systematic evidence listed the risk factor to be medium, while others listed strong, or top ranked
- Risk characterised as medium if systematic evidence listed the risk factor to be medium, moderate, or moderately ranked
- Risk characterised as small if systematic evidence listed the risk factor to be small association, inconsistently significant, low ranked, or low rated

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Howard et al. Non-psychotic mental disorders in the perinatal period
Forest plot of odds ratios for antenatal elevated depression symptoms associated with migrant status using random effects meta-analysis, stratified by study country

<table>
<thead>
<tr>
<th>study_id</th>
<th>OR (95% CI)</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diaz 2007</td>
<td>0.26 (0.04, 1.79)</td>
<td>3.11</td>
</tr>
<tr>
<td>Elo 2010</td>
<td>1.24 (0.94, 1.65)</td>
<td>13.84</td>
</tr>
<tr>
<td>Fleurie 2015</td>
<td>0.70 (0.43, 1.12)</td>
<td>12.14</td>
</tr>
<tr>
<td>Fortner 2011</td>
<td>0.84 (0.63, 1.12)</td>
<td>13.76</td>
</tr>
<tr>
<td>Harrison 2009</td>
<td>0.55 (0.40, 0.74)</td>
<td>13.65</td>
</tr>
<tr>
<td>Heilemann 2004</td>
<td>0.34 (0.10, 1.15)</td>
<td>5.97</td>
</tr>
<tr>
<td>Luecken 2013</td>
<td>0.54 (0.24, 1.23)</td>
<td>8.87</td>
</tr>
<tr>
<td>Subtotal (I-squared = 69.9%, p = 0.003)</td>
<td>0.71 (0.51, 0.99)</td>
<td>71.35</td>
</tr>
<tr>
<td>Canada</td>
<td></td>
<td></td>
</tr>
<tr>
<td>McDonald 2013</td>
<td>2.26 (1.74, 2.94)</td>
<td>13.97</td>
</tr>
<tr>
<td>Miszkurka 2010</td>
<td>1.59 (1.39, 1.82)</td>
<td>14.68</td>
</tr>
<tr>
<td>Subtotal (I-squared = 81.4%, p = 0.020)</td>
<td>1.86 (1.32, 2.62)</td>
<td>28.65</td>
</tr>
<tr>
<td>Overall (I-squared = 90.5%, p = 0.000)</td>
<td>0.91 (0.62, 1.33)</td>
<td>100.00</td>
</tr>
</tbody>
</table>

NOTE: Weights are from random effects analysis
Forest plot of odds ratios for postnatal elevated depression symptoms associated with migrant status using random effects meta-analysis, stratified by study country

Anderson et al 2017
Impact of migrant status on mental health

Survey of trafficked adults - multivariable logistic regression model of factors associated with high levels of psychological symptoms among trafficked men and women (n=150)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Adjusted OR (95% CI)</td>
</tr>
<tr>
<td>Gender (female vs. male)</td>
<td>2.0 (0.7-5.8)</td>
</tr>
<tr>
<td>Pre-trafficking</td>
<td></td>
</tr>
<tr>
<td>Pre-trafficking sexual violence</td>
<td>3.2 (0.7-15.0)</td>
</tr>
<tr>
<td>Pre-trafficking physical violence</td>
<td>1.8 (0.7-4.5)</td>
</tr>
<tr>
<td>Trafficking</td>
<td></td>
</tr>
<tr>
<td>Injury during trafficking</td>
<td>2.1 (0.8-6.0)</td>
</tr>
<tr>
<td>Extreme restriction during trafficking</td>
<td>2.1 (0.7-6.1)</td>
</tr>
<tr>
<td>Post-trafficking</td>
<td></td>
</tr>
<tr>
<td>Ongoing fear of the traffickers</td>
<td>2.3 (0.9-6.3)</td>
</tr>
<tr>
<td>Unmet social needs</td>
<td>2.0 (1.1-3.5)</td>
</tr>
<tr>
<td>Lack of a confidante</td>
<td>3.0 (1.0-8.8)</td>
</tr>
</tbody>
</table>

Oram et al Am J Pub Hlth 2016; PROTECT final report
Social determinants of mental health in pregnancy – ongoing work and today’s talk

What is the impact of different types of childhood and adulthood trauma on perinatal mental health and outcomes?

Are migrant women in SE London at increased risk of mental disorders in pregnancy?

If so, what type of disorders? what are the mechanisms? – trauma? social situation? social support? racism and discrimination? difficulty in accessing services?

How can we support pregnant women with psychosocial risk factors that may impact on mental health and child outcomes?

How common are antenatal mental disorders and associated risk factors?

How can we influence policy and provide care to address social determinants impacting on maternal and child mental (and physical) health?
Aims of WENDY study

To investigate the sensitivity, specificity and positive predictive value of the two Whooley questions vs Edinburgh Postnatal Depression Scale, and a gold standard diagnostic interview, for identification of mental disorders incl depression

Secondary aims (for today): 1) to estimate the prevalence of mental disorders; 2) to estimate the prevalence and impact of psychosocial risk factors on mental health outcomes for mother and child

Howard et al Br J Psychiatry In Press
Method

Study design:
A cohort study with a two-phase sampling design drawing a sample stratified according to being positive or negative on the Whooley questions with random sampling of women who were negative

During the past month have you often been bothered by:
- feeling down, depressed, or hopeless?
- having little interest or pleasure in doing things?

Study setting:
Inner city maternity service (6000 births/year) with an ethnically and socially diverse population
Inclusion criteria:
Women aged >15 who answered the Whooley questions at antenatal booking (as asked by clinic midwives);

Exclusion criteria:
Women >16 who lack mental capacity to provide informed consent;
Women who decline answering the Whooley questions;
Women who have already undergone a comprehensive maternity booking elsewhere in the UK;
Women who have had a termination or miscarriage between booking and baseline interview
Figure 1: Flow chart of women through the study

Total number booked at KCH from 10/11/14 to 30/06/16: n = 9,963

Total Whooley negative: n = 9057
Total Whooley positive: n = 906

Number assessed for eligibility - Whooley negative
(following randomised to approach) (n = 980)

Excluded: n = 98 (10%)
- n = 64 booked elsewhere
- n = 1 women aged under 16 years
- n = 33 no longer pregnant at approach

Number eligible Whooley negative (n = 882) (90%)

Did not take part in study (n = 624) (71%)
- Timed out/DNA (n = 231)
- Not contactable (n = 206)
- Declined (n = 157)
- Unavailable interpreter (n = 2)

Whooley negatives recruited to study (n = 258)

Number assessed for eligibility - Whooley positive
(all to approach – no randomisations) (n = 834)

Excluded: n = 69 (8%)
- n = 44 booked elsewhere
- n = 1 women aged under 16 years
- n = 24 no longer pregnant at approach

Number eligible Whooley positive (n = 765) (92%)

Did not take part in study (n = 478) (62%)
- Timed out/DNA (n = 177)
- Not contactable (n = 126)
- Declined (n = 131)
- Unavailable interpreter (n = 4)

Whooley positives recruited to study (n = 287)

Total recruited (n = 545) (33%)
Expansion weights used to account for oversampling of Whooley positives and undersampling of Whooley negatives

- Weights calculated as: 906/287 (tve) and 9057/258 (nve)
- Survey data in Stata (svyset) and summarise prevalences (svy)

A single round of predictive mean matching was performed using the \textit{mi impute} function (predictive mean matching option) in Stata (v14.0) to impute missing EPDS data for 11 women with 1-3 items (10-30\%) missing.

To account for missing observations in the SCID items (4\% of women), we used inverse probability weights that accounted for the Whooley sampling scheme, as well as variables significant in predicting missingness of SCID responses (EPDS total score, ethnicity and employment status).
Summary – early findings

- Whooley positive women more commonly younger, single, living alone, have no formal educational qualifications/only school qualifications, insecure immigration status (temporary admission/waiting for initial immigration decision) and lower income

- Whooley questions useful as a marker for possible mental disorder and presence of psychosocial risk factors

- Prevalence of PTSD is likely to be underestimated

- PTSD more likely in migrants but less likely to have generalised anxiety disorder

- PTSD associated with insecure immigration status in migrant women (p<0.01)

- Young women <25 yrs have a high prevalence of mental disorders (and high prevalence of (childhood and adulthood) partner violence and sexual abuse)

- Early idn of mental disorders and risk factors important in order to treat and prevent persistence
**Definition of domestic violence and abuse**

“Any incident or pattern of incidents of *controlling, **coercive, threatening behaviour, violence or abuse (psychological, physical, sexual, financial or emotional) between those aged 16 years or over who are, or have been, intimate partners or family members, regardless of gender or sexuality*”

*(Home Office 2013)*

* Controlling behaviour comprises acts designed to make a person subordinate and/or dependent by isolating them from sources of support, exploiting their resources, depriving them of the means needed for independence, and regulating their everyday behaviour

** Coercive behaviour is an act or a pattern of acts of assault, threats, humiliation and intimidation or other abuse that is used to harm, punish, or frighten their victim

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**Women’s mental health 4**

**Violence against women and mental health**

Stan Oram, Hind Khalfiah, Louise M Howard

Violence against women is widely recognised as a violation of human rights and a public health problem. In this Series paper, we argue that violence against women is also a prominent public mental health problem, and that mental health professionals should be identifying, preventing, and responding to violence against women more effectively. The most common forms of violence against women are domestic abuse and sexual violence, and victimisation is associated with an increased risk of mental disorder. Despite clinical guidance on the role of mental health professionals in identifying violence against women and responding appropriately, poor identification persists and can lead to non-engagement with services and poor response to treatment. We highlight that little research has been done on how to improve identification and treatment of victims and perpetrators in contact with mental health services, but that mental health services could play a major role in primary and secondary prevention of violence against women.
Pregnancy and childbirth

Domestic violence can increase in severity/frequency or start in pregnancy; history of abuse associated with pregnancy abuse

Emotional and physical abuse associated with foetal loss

In latest UK Enquiry into Maternal Deaths (2009-13): 33 women were DV victims of homicide – most after 6 wks postpartum, with 31 murdered by a partner, 2 by family member (most UK citizens, BME women higher risk (RR 2.56)

DA documented for 5% of 468 deaths (either murdered or died from mental health related causes with DV often not documented)

US studies: perinatal homicide risk 2.2-6.2/100,000 live births, vs 2.5–2.6 non-perinatal (nb misclassification bias);

DV a factor in >50% perinatal suicides

Devries et al 2010; Gasmararian et al, 1996; Knight et al 2016; Moraes & Reichenheim 2002 Palladino 2011; ; Startk and Flitcraft, 1996; McWilliams & McKiernan, 1993; Mezey, 1997; Taft, 2002; Wallace 2016; Wilson et al, 1996
Meta-analysis of the association between antenatal depression and any lifetime domestic violence (cross-sectional studies)

<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Cases n(N)</th>
<th>Controls n(N)</th>
<th>ES (95% CI)</th>
<th>% Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ali [41]</td>
<td>2012</td>
<td>60/83</td>
<td>23/50</td>
<td>0.42 (0.13, 1.38)</td>
<td>4.30</td>
</tr>
<tr>
<td>Brown [44]</td>
<td>2008</td>
<td>33/116</td>
<td>83/1391</td>
<td>2.70 (1.73, 4.21)</td>
<td>12.97</td>
</tr>
<tr>
<td>Gausia [57]</td>
<td>2009</td>
<td>61/119</td>
<td>58/242</td>
<td>3.94 (2.42, 6.42)</td>
<td>12.10</td>
</tr>
<tr>
<td>Hayes [103]</td>
<td>2010</td>
<td>7/16</td>
<td>9/76</td>
<td>7.67 (1.87, 31.41)</td>
<td>3.20</td>
</tr>
<tr>
<td>Intran [66]</td>
<td>2010</td>
<td>32/91</td>
<td>59/122</td>
<td>2.61 (1.42, 4.80)</td>
<td>9.99</td>
</tr>
<tr>
<td>Jundell [68]</td>
<td>2009</td>
<td>7/19</td>
<td>12/377</td>
<td>2.90 (0.97, 8.66)</td>
<td>4.79</td>
</tr>
<tr>
<td>Karacam [69]</td>
<td>2009</td>
<td>96/290</td>
<td>194/749</td>
<td>4.60 (2.69, 7.88)</td>
<td>11.19</td>
</tr>
<tr>
<td>Mezey [82]</td>
<td>2005</td>
<td>15/45</td>
<td>30/150</td>
<td>2.00 (0.92, 4.35)</td>
<td>7.65</td>
</tr>
<tr>
<td>Naseem [84]</td>
<td>2011</td>
<td>71/132</td>
<td>61/588</td>
<td>2.82 (1.86, 4.26)</td>
<td>13.52</td>
</tr>
<tr>
<td>Thananowan [96]</td>
<td>2008</td>
<td>30/85</td>
<td>55/90</td>
<td>5.05 (2.84, 9.00)</td>
<td>10.51</td>
</tr>
<tr>
<td>Thompson [97]</td>
<td>2000</td>
<td>37/81</td>
<td>44/143</td>
<td>3.04 (1.63, 5.66)</td>
<td>9.78</td>
</tr>
</tbody>
</table>

Overall (I-squared = 51.1%, p = 0.025) 3.04 (2.31, 4.01) 100.00

NOTE: Weights are from random effects analysis

http://www.plosmedicine.org/article/info:doi/10.1371/journal.pmed.1001452
Meta-analysis of the association between antenatal depression and any past year partner violence (cross-sectional studies)

http://www.plosmedicine.org/article/info:doi/10.1371/journal.pmed.1001452
Meta-analysis of the association between antenatal depression and partner violence during pregnancy (cross-sectional studies)

http://www.plosmedicine.org/article/info:doi/10.1371/journal.pmed.1001452

[Graph showing meta-analysis results]
### Meta-analysis of the association between any partner violence during pregnancy and postnatal depression (cohort studies)

<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Cases</th>
<th>Controls</th>
<th>OR (95% CI)</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flach</td>
<td>2011</td>
<td>238/1504</td>
<td>1266/12113</td>
<td>3.00 (2.56, 3.51)</td>
<td>73.41</td>
</tr>
<tr>
<td>Ludermir</td>
<td>2010</td>
<td>139/270</td>
<td>131/775</td>
<td>3.46 (2.58, 4.62)</td>
<td>25.19</td>
</tr>
<tr>
<td>Patel</td>
<td>2002</td>
<td>9/59</td>
<td>49/193</td>
<td>5.14 (1.74, 15.16)</td>
<td>1.40</td>
</tr>
<tr>
<td>Overall</td>
<td></td>
<td></td>
<td></td>
<td>3.14 (2.74, 3.61)</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Population Attributable Fraction = 13%

Risk factors – an ecological model

Individual
- Age
- History of child abuse
- Witnessing parental violence
- Substance misuse
- Low self-esteem
- Poverty

Community
- High levels of violent crime

Societal
- Gender disadvantage

Domestic violence experienced by local patients (data from LARA study)

He was very violent, he even punched me in the stomach when I was pregnant with [ ]. Um I have been kicked all around the room, strangled, raped, you name it happened (su1)

I think the worst time that sort of stuck out of my memory was, I had just had a miscarriage….. and I can remember him from the top landing just dropping the linen basket full up of washing down at me, from the landing, as I was going down the stairs (su17)

When I had my first daughter he didn’t buy food…..and I was breast feeding, you know. He didn’t buy food….I had no water (su16)

She gave birth prematurely, as a result of him beating her up…she was actually found 8 hours after birth…the cord was still attached and he left her like that….. she was mute for like a month in a ward and she attributes that to him (P10, female nurse)

Trevillion et al 2014
Impact on children – ALSPAC findings

13,617 children and mother dyads followed to 42 months of age.

Experiences of domestic violence and depressive symptoms at 18 weeks of gestation and at follow up; Rutter scale for children

Antenatal domestic violence associated with high levels of maternal antenatal (aOR 4.02; 95% CI 3.4-4.8) & postnatal (aOR 1.29; 95% CI, 1.02-1.63) depressive symptoms

Most women suffering antenatal violence continued to experience violence postnatally

Antenatal domestic violence predicted future behavioural problems at 42 months (OR 1.87; 95% CI, 1.45-2.40)

Other research finds witnessing of abuse as a child associated with direct abuse, being a victim of DVA and being a DVA perpetrator

BUT E-risk study - safe supportive and nurturing partners buffer women’s mental health despite history of being maltreated as children…if IPV can be reduced, positive impacts on both women and children mental health

Flach et al BJOG 2011; Jaffee et al Psychol Med 2017
NICE PH50 Recommendation 6: Ensure trained staff ask people about domestic violence and abuse

Ensure frontline staff are trained to recognise the indicators of DVA and can ask relevant questions to help people disclose past or current experiences.

Enquiry should be made in private on a one-to-one basis in an environment where the person feels safe, and in a kind, sensitive manner.

Ensure people can be seen on their own.

Ensure trained staff in antenatal, postnatal, reproductive care, sexual health, alcohol or drug misuse, mental health, children's and vulnerable adults' services ask service users whether they have experienced DVA routinely (i.e. part of good clinical practice, even where there are no indicators of violence and abuse).

Ensure staff know, or have access to, information about the services, policies and procedures of all relevant local agencies.

Ensure all services have formal referral pathways in place for DVA. These should support: people who disclose that they have been subjected to it; the perpetrators; and children who have been affected by it.
Pregnant women – interventions included counselling, advocacy, case management

10 RCTs (3417 women) – mainly US.

Limited evidence but 1 trial reported that an integrated psychological intervention was associated with reduced abuse

Evidence on DVA advocates suggests they may be able to improve mental health and abuse (PATH trial) in addition to quality of life and safety behaviours

Integration of DVA advocates in primary care (IRIS) and secondary mental health care (LARA) improves identification, referrals and health outcomes (quality of life, symptom, unmet needs)

Taft et al 2011; Jahanfar et al 2014; Rivas et al 2015; Feder et al 2011; Trevillion et al 2014
Depression: an exploratory parallel-group randomised controlled trial of Antenatal guided self-help for Women

Trevillion et al 2016
Workbook facilitated by trained practitioners

1 Wellbeing in Pregnancy
2 Finding a Balance
3 Managing Relationships
4 Getting to Know your Baby
5 Health and Lifestyle
6 Thinking Ahead

Qualitative study: 12 women who had experienced IAPT in the perinatal period reported little opportunity to explore associated issues such as relationships.
Implications

- Need to identify and treat perinatal mental disorders and address underlying causes
- Whooley questions may be useful to identify women with risk factors and mental disorders
- Address DV and other risk factors in interventions for perinatal mental health
- Develop robust evidence base on perinatal interventions for DV and other risk factors
- Train professionals how to safely identify DVA and respond (beware of potential for harm)
- Integrate DVA and other risk factors into educational materials and curricula
- Don’t blame the victim
Levels for interventions to reduce DVA
This presentation summarises independent research funded by the National Institute for Health Research (NIHR) under its Programme Grants for Applied Research (PGfAR) Programme (Grant Reference Number: RP-PG-1210-12002) and the National Institute for Health Research (NIHR) / Wellcome Trust King’s Clinical Research Facility. The study team acknowledges the study delivery support given by the South London NIHR Clinical Research Network. Louise Howard is also supported by an NIHR Research Professorship (NIHR-RP-R3-12-011).

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