Mental Health Across the Perinatal Period

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Postpartum Depression
longstanding clinical issue
for over 30 years
Postpartum Depression (PPD) Prevalence

• 1 in 8 women will experience depression in the postpartum period

• National Canadian data = 8% will continue to experience depression past the first year postpartum
Health Promotion Consequences

• Research suggests maternal health promotion behaviours are diminished as mothers with PPD are less likely than non-depressed mothers to:
  – Breastfeed
  – Attend well-child visits
  – Complete immunizations
  – Use home safety devices
  – Put infants to sleep in recommended sleeping position
  – Correctly use car seats
  – Read and provide stimulating experiences

(Zajicek-Farber 2009; Cadzow et al 1999)
Child Developmental Consequences

• **Cognitive development**
  – General consensus that PPD predicts **poorer language** and **IQ development** in children and that this effect is found across childhood into adolescence

• **Behavioural development**
  – Meta-analysis of 193 studies → small but significant association between maternal depression and child behavioural outcomes

• **Emotional development**
  – Meta-analyses → consistent associations between PPD and **insecure attachment** and difficulty in establishing effective **self-regulation skills** (Martins and Gaffan, 2000; Atkinson et al., 2000; Campbell et al., 2004)
Maternal PPD Risk Factors

- Previous history of depression
- Depression during pregnancy
- Anxiety during pregnancy
- Childcare stress
- Life stress
- Lack of social support
- Marital dissatisfaction/conflict
- Low self-esteem
- Low socio-economic status
- Single marital status
- Unwanted/unplanned pregnancy
Overall pooled prevalence = 20%
95% CI=17-22, 18 studies, N=14,239 women

Immigrant vs Non-Immigrant Women

OR = 2.17, 95% CI=1.79 to 2.65
15 studies, N=50,519 women
Immigrant women who have spent 5 years in Canada have almost twice as many children as the average Canadian-born woman (Ferrer & Adsera, 2016).

Major birthrate differences depending on country of origin:
- highest birthrates = Africa, Pakistan and India
- lowest birthrates = Europe, US and East Asia

Based on childbirth patterns of the roughly 125,000 women who immigrate to Canada each year

Second highest per-capita immigration rate of any major country
Depression in the antenatal period has received much less attention than in the postpartum.
Lack of Recognition = Serious Implications
Consequences of Antenatal Depression

- Antenatal depression has been associated with:
  1. Inadequate nutrition and weight gain
  2. Increased alcohol consumption, substance abuse and smoking
  3. Late access in antenatal care
  4. Poorer antenatal appointment attendance

- Linked to stillbirth, premature birth, low birthweight, low Apgar scores, and smaller head circumference

  (Marcus 2009; Kim et al 2006; Redshar and Henderson 2013; Raisanen et al 2014)
Altered Child Developmental Trajectories

• • cognitive development
• ↑ difficult temperament
• ↑ risk of depression in adolescence and adulthood
• ↑ risk of ADHD and conduct disorders
Maternal Differences in Depression Onset

In a US sample of 727 depressed women, those with postpartum onset were significantly more likely to:

- Older
- Caucasian
- Educated
- Married/cohabitating
- Have one or no previous child
- Have private insurance

Than those with pre-pregnancy or pregnancy onset

Onset of depression also linked to symptom severity

ANXIETY

Pacing  Tension  Chest  Jumpy
Restlessness  Dread  Trembling  Symptoms
Desperate  Fear  Emotional  Attacks  Scared
Fatigue  Nervous  Pain  Turmoil  Worry
Cope  Tense  Headache  Angst
Sweating  Disorder  Panic

Overreaction  Phobia  Stress
Clinical Importance of Anxiety

- A common mental health problem women experience during the perinatal period is anxiety → limited attention

- Significant omission → ever-growing evidence indicating maternal anxiety both antenatally and postnatally may also lead to negative outcomes for children
We reviewed 21,464 abstracts, retrieved 783 articles, and included 102 studies from 30 different countries.

- Antenatal anxiety data = 70 studies
- Postnatal anxiety data = 57 studies
Antenatal Anxiety

Self-Reported Symptoms

- 1st trimester = **18.2%** (95% CI 13.6-22.8, 10 studies, N=10,577)
- 2nd trimester = **19.1%** (95% CI 15.9-22.4, 17 studies, N=24,499)
- 3rd trimester = **24.6%** (95% CI 21.2-28.0, 33 studies, N=116,720)

Overall pooled prevalence across the three trimesters was **22.9%** (95% CI 20.5-25.2, 52 studies, N=142,833)
Antenatal Anxiety

Clinical Diagnosis of Any Anxiety Disorder

- 1\textsuperscript{st} trimester = 18.0\% (95\% CI 15.0-21.1, 2 studies, N=615)
- 2\textsuperscript{nd} trimester = 15.2\% (95\% CI 3.6-26.7, 4 studies, N=3002)
- 3\textsuperscript{rd} trimester = 15.4\% (95\% CI 5.1-25.6, 4 studies, N=1603)

Overall pooled prevalence across the three trimesters was 15.2\% (95\% CI 9.0-21.4, 9 studies, N=4648)
Postnatal Anxiety

Self-Reported Symptoms

• 1-4 weeks = 17.8% (95% CI 14.2-21.4, 14 studies, N=10,928)
• 5-12 weeks = 14.9% (95% CI 12.3-17.5, 22 studies, N=19,158)
• 1-24 weeks = 15.0% (95% CI 13.7-16.4, 39 studies, N=145,293)
• >24 weeks = 14.8% (95% CI 10.9-18.8, 7 studies, N=11,528)
Postnatal Anxiety

Clinical Diagnosis of Any Anxiety Disorder

- 5-12 weeks = 9.6% (95% CI 3.4-15.9, 5 studies, N=2712)
- 1-24 weeks = 9.9% (95% CI 6.1-13.8, 9 studies, N=28,495)
- >24 weeks = 9.3% (95% CI 5.5-13.1, 5 studies, N=28,244)
## Postpartum Anxiety Risk Factors

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Odds ratio</th>
<th>95% CI</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived stress</td>
<td>5.19</td>
<td>2.92-9.22</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Multiparous parity</td>
<td>3.46</td>
<td>1.39-8.65</td>
<td>0.008</td>
</tr>
<tr>
<td>History of mental health problems</td>
<td>2.73</td>
<td>1.12-6.62</td>
<td>0.026</td>
</tr>
<tr>
<td>Childcare stress</td>
<td>1.74</td>
<td>1.13-2.70</td>
<td>0.013</td>
</tr>
<tr>
<td>Partner support</td>
<td>0.66</td>
<td>0.44-0.99</td>
<td>0.045</td>
</tr>
<tr>
<td>Breastfeeding self-efficacy</td>
<td>0.66</td>
<td>0.46-0.96</td>
<td>0.028</td>
</tr>
</tbody>
</table>

*Dennis et al, 2016 Acta Psychiatrica Scandinavica*
Depression and Anxiety in the General Population

- Depression and anxiety disorders make up 50% of the international disease burden attributable to psychiatric and substance abuse disorders \((\text{Whiteford et al., Lancet 2013})\)

- Epidemiologic data suggests that \textbf{1 in 4 of the general population will have at least one of these disorders in their lifetime} \((\text{Pedersen et al. JAMA Psychiatry 2014})\)
Comorbidity

Anxiety          Comorbidity          Depression
Why is Comorbidity Important Clinically?

- More severe and persistent symptomatology
- Increased disability and impaired functioning
- Poorer response to treatment
- Increased risk to commit suicide

What is the prevalence of comorbidity among women in the perinatal period?
The prevalence of antenatal and postnatal co-morbid anxiety and depression: a meta-analysis

- Included 66 (24 published and 42 unpublished) studies incorporating 162,120 women from over 20 countries

**Antenatally**

Overall prevalence of anxiety and mild to severe depressive symptoms

**9.5%** (95% CI 7.8-11.2, 17 studies, N=25,592)

**Postnatally**

Overall prevalence of anxiety and mild to severe depressive symptoms

**8.2%** (95% CI 6.5-9.9, 15 studies, N = 14,731)
Mental health issues are the most frequent form of maternal morbidity across the perinatal period.
What should we do to support women and their families?
Not only focus on individual treatment but also include preventive approaches to the management of depression and anxiety.
Preventive Approach

- Moving beyond a model where we wait for a woman to develop major symptoms and then provide evidence-based treatment

**A NEW Philosophy**

- FOCUS on the long-term healthy development of mothers and their children
- PROACTIVELY provide resources to support this healthy development
Prevention is
Simpler, Easier and Cheaper than Cure
Prevention Strategies

Tertiary
Provide interventions for those affected

Secondary
(Problems targeted at families in need to alleviate identified problems and prevent escalation)

Primary (Universal)
(Problems targeted at entire population in order to provide support and education before problems occur)
Primary Prevention Strategy (universal)

Alternative Interventions for the Prevention of Postpartum Depression

- To assess the effects of interventions other than pharmacological, psychosocial, or psychological interventions compared with usual antepartum or postpartum care in the prevention of postpartum depression
Physical Activity and Lifestyle Advice

• Five trials
  • Dodd 2015 (*Australia*); Huang 2011 (*Taiwan*), Lewis 2014 (*USA*), Norman 2010 (*Australia*), Songoygard 2012 (*Norway*)

• Depressive symptomatology
  RR=0.87, 95% CI 0.35 - 2.14; 2 trials, n=1940

• Mean depression scores
  SMD=-0.30, 95% CI -0.50 to -0.10; 3 trials, n = 387
Physical Activity

• Consistent with previous non-perinatal research

• Systematic review of 25 trials (Mammen & Faulkner 2013)

  – There is strong evidence that any level of physical activity, including low levels (e.g., walking <150 minutes/weeks), can prevent future depression
Primary Prevention Strategy: Partner Support

• The importance of partner support is well established
• Partners are ideally positioned to provide consistent long term support
• Given that parents show a preference for support from their partner, strategies that target the couple relationship are likely to be beneficial \( (Forsyth \text{ et al} \ 2011; \ Rowe, \ et \ al \ 2013) \)
Coparenting refers to the manner in which parents coordinate their childcare responsibilities and work together to achieve their jointly determined child health and development goals.
Co-parenting as a Preventive Strategy

Coparenting has been previously shown to positively affect family relationships and emotional well-being, so it is hypothesized that educating couples about coparenting may also be effective in preventing depression.
Coparenting Theory - Mark Feinberg

- Coparenting
- Joint Family Management
- Support/Undermining
- Division of Labor
- Childrearing Agreement
Productive Communication and Problem Solving

In strong coparenting relationships =
Couples engage in effective communication and problem solving

• Finding solutions to conflicts helps parents form supportive, cooperative coparenting relationships
Dr. John Gottman's 7 Principles of Successful Relationships

1. Enhance your love maps. You know all of your partner's relevant information, from life dreams to favorite movies, as a best friend would.

2. Nurture fondness and admiration. You have a positive view and deep appreciation of your partner, and express it.

3. Turn toward your partner instead of away during times of stress. "You want your partner to be that confidante," Gover says.

4. Let your partner influence you. You shouldn't make important life decisions autonomously, as a single person would.

5. Solve your solvable problems. All couples have solvable and perpetual problems, but long-term couples solve those they can and understand there will always be perpetual problems.

6. Overcome gridlock. What often underlies perpetual problems are unfulfilled dreams. Talk about those dreams with the goal of making peace with the problem.

7. Create shared meaning. Develop the big and small rituals that help build the bond with your partners. Rituals range from hosting an annual party to having coffee together in the morning.

http://www.gottman.com
Coparenting breastfeeding support and exclusive breastfeeding: A randomized controlled trial (COSI Trial)

PI: Dr. Jennifer Abbass-Dick

- A multi-site randomized controlled trial
- To evaluate the effect of a Coparenting Breastfeeding Support Intervention (COSI) on breastfeeding outcomes among primiparous mothers and fathers
Partners to Parents: development of an online intervention for enhancing partner support and preventing perinatal depression and anxiety

Pamela D. Pilkinson, Holly Rominov, Lisa C. Milne, Rebecca Giallo & Thomas A. Whelan

To cite this article: Pamela D. Pilkinson, Holly Rominov, Lisa C. Milne, Rebecca Giallo & Thomas A. Whelan (2016): Partners to Parents: development of an online intervention for enhancing partner support and preventing perinatal depression and anxiety, Advances in Mental Health, DOI: 10.1080/18387357.2016.1173517

Clinical Psychologist 19 (2015) 63–75

A review of partner-inclusive interventions for preventing postnatal depression and anxiety

Pamela D. PILKINGTON, Thomas A. WHELAN and Lisa C. MILNE

School of Psychology, Faculty of Health Sciences, Australian Catholic University, Fitzroy, Victoria, Australia
Perinatal Mental Health: A Family Affair
Paternal Depression

A meta-analysis suggests that approximately 10.4% of fathers will experience depression in the first year postpartum

(Paulson et al. JAMA 2010)
Maternal and Paternal Postpartum Depression: Assessing Concurrent Depression in The Family
(The IMPACT Study)

Funded by Canadian Institutes of Health Research
IMPACT Study

- A longitudinal study where 6400 mothers + fathers across Canada are completing online questionnaires at 3, 6, 9, 12, 18, and 24 months postpartum

  35% are immigrant couples
  30% are low-income couples

Adverse Childhood Experiences International Questionnaire
Diverse Child Development Measures
Secondary Prevention = Target At-Risk Families
Psychosocial and Psychological Interventions for the Prevention of Postpartum Depression: An Update

Summary

Overall, psychosocial and psychological interventions may decreased the risk of developing postpartum depression by approximately 22% (N=28 trials, 17,000 women)
What interventions were most successful?

Edinburgh Postnatal Depression Scale (EPDS)

Secondary / Indicated preventive interventions
Postpartum Depression
Peer Support Trial
(Dennis et al. *BMJ 2009*)

Funded by Canadian Institutes of Health Research (CIHR)
Underlying Mechanisms of Peer Support

• Peer support can:
  – Increase social networks
  – Reinforce help-seeking behaviours
  – Decrease barriers to care
  – Encourage effective coping
  – Promote social comparisons
  – Increase self-efficacy
  – Aid self-esteem

informed by lived experience
Secondary Prevention: Anxiety Screening

- Good evidence to suggest that anxiety often **develops first** and then depression
- **GAD-7** (Generalized Anxiety Disorder) is a 7-question screening tool
- **GAD-2** – part of the Ontario Perinatal Record
- **EPDS-3** (cut-off score of 6 or more)
- The three EPDS questions are:
  1. I have blamed myself unnecessarily when things went wrong
  2. I have been anxious or worried for no good reason
  3. I have felt scared or panicky for no very good reason
Secondary Prevention Strategy

Preconception Care
Healthy Life Trajectories Initiative (HeLTI)

- A collaboration between Canada, China, India, South Africa and the World Health Organization (WHO) to develop linked international intervention cohorts that will implement and test approaches to:

1. Prevent overweight and obesity in children and risk factors for non-communicable diseases (NCDs)
2. Improve early childhood development (ECD)

**Goal:** to generate evidence that will inform national policy and decision-making for the improvement of health and the prevention of NCDs throughout the lifespan
Introduction to HeLTI Canada

TROPHIC Trial:

TRjectories Of healthy life using Public Health and primary care Interventions in Canada

$17,050,000 for 10 years

A pan-Canadian team of 48 established investigators from 21 institutions, across 6 provinces
Primary Objectives

- To determine whether the complete 4-phase “preconception to early childhood” lifecourse intervention can by child age 5 years:

1. Reduce child overweight and obese states
2. Improve child cardiometabolic risk factors (Objective 1)
3. Enhance child development and school readiness
4. Positively impact parental outcomes (Objective 2)
Cumulative-Impact

- Preconception phase on parental outcomes at the time of conception (Objective 3)
- Preconception + pregnancy phases on adverse pregnancy outcomes (Objective 4)
- Preconception + pregnancy + infancy phases on child outcomes at age 2 years (Objective 5)
• A randomized controlled multicenter trial
• 5230 women planning (intending) to get pregnant
• 786 nulliparous (15%) and 4444 primiparous (85%) women and their partners
• These women will be randomly allocated in a 1:1 ratio to the 4-phase intervention or to usual care
• An “index child” conceived after randomization (n = 3660; 70%) will be followed until age 5 years and assessed for the primary and secondary outcomes
Why Primarily Primiparous Women?

- Statistics Canada suggests Canadian women have approximately 1.7 children with an average inter-pregnancy interval of 24 months.

- The Canadian population with the largest preconception needs are those who have recently had a first child and are likely to have a second child within 2-3 years (primiparous women).
Why Pregnancy Planning Women?

Clinical Practicalities

• These are the women who can be motivated to participate in a ‘real world’ preconception program
Preconception-Early Childhood Lifecourse Intervention
Defining Attributes

• Professionally-facilitated
• Proactive
• Individualized
• Will target women AND their partners
• Multifaceted
• Build on existing research and clinical resources while recognizing the growing trend of e-Health
• Local stakeholders, such as public health nurses, will participate in providing the intervention to ensure it is tailored to local circumstances
• Among primiparous women, we will also provide information to address concerns with the sibling child with the goal of taking a family-approach to care
Intervention Phases

• The intervention will be provided in 4 phases:
  1. Preconception
  2. Pregnancy
  3. Infancy [0-2 years]
  4. Early childhood [3-5 years]

• Each phase has time-sensitive goals based on child obesity risk factor meta-analyses
# Phase-Specific Goals and Activities

<table>
<thead>
<tr>
<th>Preconception Phase Goals</th>
<th>Pregnancy Phase Goals</th>
<th>Infancy Phase Goals (0-2 years)</th>
<th>Early Childhood Phase Goals (3-5 years)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1.</strong> Promote healthy pre-pregnancy weight</td>
<td>Continue Goals 1-5</td>
<td>Continue Goals 1-5</td>
<td>Continue Goals 1-9 (as appropriate)</td>
</tr>
<tr>
<td><strong>2.</strong> Encourage healthy behaviours</td>
<td>6. Prevent excessive gestational weight gain</td>
<td>7. Support breastfeeding</td>
<td><strong>10.</strong> Promote parental skills to encourage school readiness</td>
</tr>
<tr>
<td><strong>3.</strong> Support parental mental health</td>
<td></td>
<td>8. Encourage child health behaviours</td>
<td></td>
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<tr>
<td><strong>4.</strong> Boost parental relationships</td>
<td></td>
<td>9. Promote nurturing care</td>
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<tr>
<td><strong>5.</strong> Optimize home environment</td>
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Core Intervention Strategies

1. Public health nurse collaborative care
2. Individualized e-health cloud platform that includes web-based resources and multi-platform interventions
3. A preconception-lifecourse app with monthly notifications and other social media activities (Facebook, Twitter, Google+)

Comprehensive, personalized, multifaceted intervention
Our intervention, with its foundation on public health and primary care platforms and e-Health technologies, is structured to facilitate scalability across Canada, if effective.
Management of Perinatal Mental Health
Case Identification

• The first step in the management of antenatal depression is case identification

• Research consistently demonstrates that informal surveillance is imprecise with less than 50% of mothers with perinatal depression identified despite various interactions with health professionals (Yawn et al 2012; Goodman & Tyer-Viola, 2010)
There is NO screening utopia!
Edinburgh Postnatal Depression Scale (EPDS)

- 10-item self-report instrument
- Scores range from 0 to 30
- Cut-off 12/13 (> 12) – probable depression
- Cut-off 9/10 (> 9) – possible depression
- Widely available and free
Research is Clear

Screening alone is insufficient to ensure the provision of appropriate treatment and thus ultimately improving clinical outcomes.
The Perinatal Mental Health Toolkit

• An online suite of modules that can help guide public health practitioners toward the latest evidence-based practices and tools in perinatal mental health

• It covers topics important to building a comprehensive perinatal mental health strategy such as:
  • Situational assessment
  • Surveillance and population health assessment
  • Community education and awareness
  • Building public health care pathways

Support by Public Health Ontario
Barriers to Mental Health Care

With ↓ stigma and ↑ awareness and detection there is an ever-growing need for mental health care

1. **Organizational barriers** = a shortage of mental health providers particularly in rural and low income counties

2. **Provider barriers** = discomfort with assessing and treating mental health conditions, lack of resources, time constraints, and burnout

3. **Patient barriers** = cost, distance to providers, lack of English proficiency, and discomfort with disclosure
E-Mental Health

• E-Mental health has tremendous potential to address the gap between the identified need for mental health services and the limited capacity to provide conventional care.

• Four areas of mental health service delivery:
  1. Provision of information
  2. Screening, assessment, and monitoring
  3. Intervention
  4. Social support

Primarily based on its ability to improve “reach”
Technologies Transforming Mental Health

- Foster Collaboration
- Increase Access to Services
- Engage Individuals

- Mobile Therapy
- Internet-based Treatment
- Telepsychiatry
- Online Peer Support Groups
Interpersonal Psychotherapy Trial

Telephone-Based Interpersonal Psychotherapy for the Treatment of Postpartum Depression

Funded by Canadian Institutes of Health Research
Outstanding Clinical Problem

While effective treatment tools exists for PPD……

Most women suffering from postpartum depression do not receive adequate treatment

Adequate treatment = treatment to remission
Maternal treatment preference

Barrier to treatment accessibility

Cultural Factors

Severity

History of psychiatric treatment
New treatment *approaches* are required to address the **GAP** between the **existence** and **uptake** of effective PPD treatment tools.
Collaborative Care

“Collaborative care” is an approach to treatment that is highly effective for the management of general depression.

In a collaborative care model, case identification occurs at the primary care level.

A depression care manager directs individuals to appropriate treatment and monitors progress — all in collaboration with a mental health specialist.
• Part of the success of this approach is that it actively promotes treatment initiation and adherence while addressing patient preferences and perceived barriers

• Also ensures appropriate follow-up and treatment to remission
Evaluating Collaborative Care for Postpartum Depression in Primary Care Settings (EPDS Trial)

Funded by CIHR
Design Overview

- Randomized controlled trial
- **Telephone-based** collaborative care intervention for PPD
- Diverse maternal and infant outcomes
- Mothers between 0 to 6 months postpartum with depressive symptomatology (EPDS >9)

**Identified during well-child visits in eight primary care practices across Toronto**
Summary

• Prevalence depression, anxiety, comorbidity
• Risk factors and immigrant women specifically
• Need to address perinatal mental health across perinatal period
• Proactive not reactive
• Prevention – exercise groups, coparenting, peer support
• Discussed preconception health and introduced HeLTI Canada
• Healthy Human Development Table and the toolkit as a strategy to provide a more systematic approach to care
• Treatment – use of technology to increase ‘REACH’