The Impact of an Infant Sleep Intervention on Sleep and Maternal Wellbeing

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Background

- 36% Australian parents report infant sleep problems (frequent night waking, sleep onset delay)

- 15% Australian women develop PND (only 30-50% diagnosed)

- clinic and community studies show mothers reporting an infant sleep problem → twice risk of PND
Infant Sleep Study 1

In 1998-9, trial to assess impact of treating sleep problems in infants > 6 months on PND

- control group
  
  written information about normal sleep in babies

- treatment group
  
  written information about normal sleep in babies
  3 appointments with paediatric trainee
  individualised sleep plan
  sleep diary
Sleep plan

• controlled comforting
• camping out
• dummies
• night feeding
Persistent sleep problems (%) - total sample

![Bar chart showing persistent sleep problems (%) - total sample. The chart compares intervention and control groups at 10 months and 12 months, with higher percentages in the control group compared to the intervention group.]
Persistent sleep problems (%) - “depressed” subsample

![Graph showing sleep problems comparison between Intervention and Control groups at 10 and 12 months.]

- Control group: 85% at 10 months, 50% at 12 months.
- Intervention group: 23% at 10 months, 23% at 12 months.
Infant Sleep Study 2

- cluster controlled trial in 2004 (centres = cluster)
- MCH nurses trained to deliver the sleep intervention
- 6 socioeconomically diverse government areas (Bayside, Darebin, Hobsons Bay, Manningham, Monash, Yarra Ranges)
- 92 MCH nurses, 833 interested mothers
Hypotheses

• In a community sample of 8-month infants with reported sleep problems:
  
sleep intervention will improve infant and maternal sleep, maternal depression and its impact on daily life at 10 months

improvements will be maintained at 12 months
Infant Sleep Study 2

• Design: randomised controlled trial
• Setting: maternal & child health centres
• Sample: community survey of 739 mothers
  
  89% participation rate

  34% reported a sleep problem at 4 months

  47% reported a sleep problem at 7 months

maternal wellbeing (EPDS, SF-12, sleep quality and quantity)
Infant Sleep Study 2

- centres randomised and nurses trained
- at 7 months:

  328 mothers reported an infant sleep problem
  
  all 174 *intervention* families who reported a problem were offered help from their trained nurse
  
  both intervention and control mothers completed follow-up questionnaires at 10 and 12 months to assess infant sleep and maternal wellbeing
Intervention

• Control group
  “usual care” from their MCH nurse

• Intervention group
  1-3 appointments with their MCH nurse
  written information about normal sleep in babies
  sleep plan
  how to manage dummies, night feeding
  sleep diary
## Sample

<table>
<thead>
<tr>
<th></th>
<th>Intervention (n=174)</th>
<th>Control (n=154)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Infant</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>age (months)</td>
<td>7.4</td>
<td>7.3</td>
</tr>
<tr>
<td>male (%)</td>
<td>51</td>
<td>58</td>
</tr>
<tr>
<td>first born (%)</td>
<td>48</td>
<td>47</td>
</tr>
<tr>
<td><strong>Maternal</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EPDS score: mean</td>
<td>8.4</td>
<td>8.4</td>
</tr>
<tr>
<td>: &gt;9 (%)</td>
<td>38</td>
<td>42</td>
</tr>
<tr>
<td>age (mean)</td>
<td>32.8</td>
<td>33.2</td>
</tr>
<tr>
<td>tertiary education (%)</td>
<td>53</td>
<td>48</td>
</tr>
<tr>
<td>married/defacto (%)</td>
<td>99</td>
<td>97</td>
</tr>
</tbody>
</table>
Persistent sleep problems (%)
Maternal wellbeing - 10 months

• Intervention vs control mothers

were 41% less likely to report clinical levels of depression (28% int vs 35% control mothers scored >9 on the EPDS, a relative reduction of 20%)

reported less impact on daily life due to poor mental health (SF-12 score 48 vs 45; a higher score = better health)
Maternal wellbeing - 12 months

- Intervention vs control mothers
  - were 25% less likely to report clinical levels of depression on the EPDS
  - reported less impact on daily life due to poor mental health (SF-12 score 50 vs 46)
  - reported more and better quality sleep
Professional help

- Intervention vs control mothers were less likely to seek professional help (e.g., mother-baby units) for their baby’s sleep problem (19% vs 40%)

as likely to seek non-professional help
Cost effectiveness

• 100 / 174 intervention mothers visited their nurse for sleep help (average 1.52 visits)

• 34 /154 control mothers visited their nurse for sleep help (average 1.35 visits)

• first visit lasted approx 25 mins; follow up visits lasted approx 19 mins
Cost effectiveness

• intervention appears cost effective

• costs to health services per family $241 (intervention) vs $290 (control)

• costs to MCH nurses $15.70 (intervention) vs $5.90 (control)
## Change in nurse competency

<table>
<thead>
<tr>
<th>Feel ‘very competent’ (%)</th>
<th>Pre-training</th>
<th>Post-delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td>controlled comforting</td>
<td>39</td>
<td>67</td>
</tr>
<tr>
<td>camping out</td>
<td>9</td>
<td>41</td>
</tr>
<tr>
<td>night feeds</td>
<td>13</td>
<td>49</td>
</tr>
<tr>
<td>dummy</td>
<td>18</td>
<td>54</td>
</tr>
<tr>
<td>father disagrees</td>
<td>8</td>
<td>21</td>
</tr>
<tr>
<td>mother depressed</td>
<td>13</td>
<td>21</td>
</tr>
</tbody>
</table>
Program for all?

- nurses see potential to roll out?
- discussions commenced with DHS
- content to inform sleep problems information on Raising Children Network
Thank you to the nurses and families of Bayside, Darebin, Hobsons Bay, Manningham, Monash and Yarra Ranges for working with us!
Contact information

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• Handouts will only be available with training program!