Early infant cry and sleep problems: effects on parents and parent-endorsed strategies

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Infant sleep and crying problems

- 20% Western parents report crying problems
- >25% Australian parents report sleep problems in first 6 months
- $150 million in first 12 weeks UK (1997)

Impact on mothers

- Postnatal depression (PND)
  - 10–15% Australian women in first year postpartum
  - almost 2/3 of mothers of infants with sleep problems report high depression symptoms
  - impairs ability to care for infant
- Anxiety
- Relationship and family stress

Impact on fathers

- Impact of infant crying and sleep problems on fathers is unknown
- Paternal PND
  - affects 1.2 to 25% fathers in first year postpartum
  - increase in parenting stress
  - adversely affects marital relationship

Impact on children

- Behaviour problems (maternal and paternal PND)
- Attachment difficulties
- Emotional problems
- Impaired cognitive development
- Child abuse
- Family breakdown

Management of cry/sleep problems

- Number of different approaches
  - parent education, medication, complementary
- No one proven approach if no organic cause
- Successful approach must include strategies which parents find useful and are willing to implement
### Unsettled Babies Study - Aims
- In a sample of infants aged 2 weeks to 7 months with sleep/cry problems, we aimed to determine:
  - impact of infant behaviour on maternal and paternal mental health
  - management strategies deemed useful by parents
  - impact of infant’s age, gender and maternal mental health on resolution of infant problem

### Unsettled Babies Study - Methods
- **Design**
  - pre-post intervention questionnaire
  - baseline Q at first visit, follow up Q. 3 weeks later
- **Participants**
  - consecutive sample of parents
- **Setting**
  - Unsettled Babies Clinic, Centre for Community Child Health, Royal Children’s Hospital

### Unsettled Babies Clinic
- **History and examination**
- **Exclusion of medical causes**
- **Explanation of normal sleep and crying patterns and tired signs**
- **Strategies to encourage self-settling**

### Medical causes of persistent crying
- **Cow’s milk protein intolerance**
  - suspect if poor growth, vomiting, blood/mucous in stools, FHx of food allergy, atopy eg eczema
  - immediate onset (<1 hr) - V & D, rash
  - delayed onset (up to 72 hrs) - V & D
- **Gastro-oesophageal reflux** – highly debated!

### Unsettled Babies Clinic – ‘protocol’
- Reassure baby is well
- Explain natural history of crying
- Discuss:
  - sleep cycles
  - tired signs
  - settling techniques
  - feed-play-sleep
  - temperament

### Unsettled Babies Clinic – ‘protocol’
- Tired signs: jerky movements, frowning, grizzling, crying
- Often misread as boredom, hunger
- Consider wrapping, +/- dummy
- Put into cot awake, re-settle at 2 minute intervals
Clinic ‘protocol’

- Written management plan
- Infant sleep/cry diary
- Review in 1-3 weeks

Unsettled Babies Study - Measures

- Primary outcome
  - presenting problem
  - severity of problem (7-point scale)
- Secondary outcomes
  - parent ratings of usefulness of clinic strategies
  - Edinburgh Postnatal Depression Scale (EPDS)
    - 10-item measure, score 0-30, screen for PND
  - parent sleep quality and quantity

Response rates

<table>
<thead>
<tr>
<th></th>
<th>Mothers</th>
<th>Fathers</th>
<th>Infants</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>72</td>
<td>69</td>
<td>72</td>
</tr>
<tr>
<td>Before visit</td>
<td>99%</td>
<td>86%</td>
<td></td>
</tr>
<tr>
<td>3 weeks later</td>
<td>82%</td>
<td>76%</td>
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Sample

<table>
<thead>
<tr>
<th></th>
<th>Mothers</th>
<th>Fathers</th>
<th>Infants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (mean)</td>
<td>32.6</td>
<td>34.5</td>
<td>14.9 (weeks)</td>
</tr>
<tr>
<td>Tertiary educated (%)</td>
<td>48</td>
<td>37</td>
<td></td>
</tr>
<tr>
<td>Australian born (%)</td>
<td>77</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td>Married/de facto (%)</td>
<td>97</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male infant (%)</td>
<td></td>
<td></td>
<td>63</td>
</tr>
<tr>
<td>Term delivery (%)</td>
<td></td>
<td>93</td>
<td></td>
</tr>
<tr>
<td>First-born</td>
<td></td>
<td>65</td>
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Results – Infant behaviour

<table>
<thead>
<tr>
<th>Presenting problem (%)</th>
<th>Mothers</th>
<th>Fathers</th>
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<tbody>
<tr>
<td>sleep</td>
<td>45</td>
<td>59</td>
</tr>
<tr>
<td>crying</td>
<td>42</td>
<td>37</td>
</tr>
<tr>
<td>feeding</td>
<td>11</td>
<td>2</td>
</tr>
<tr>
<td>Problem resolved after 1 visit (%)</td>
<td>36</td>
<td>45</td>
</tr>
<tr>
<td>Change in severity (median)</td>
<td>2*</td>
<td>1*</td>
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Results – Parent wellbeing

<table>
<thead>
<tr>
<th></th>
<th>Pre-clinic</th>
<th>Post-clinic</th>
<th>Difference (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mothers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median EPDS</td>
<td>11</td>
<td>7</td>
<td>-</td>
</tr>
<tr>
<td>% scoring &gt; 12</td>
<td>45</td>
<td>15</td>
<td>30 (16.42) *</td>
</tr>
<tr>
<td>Fathers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median EPDS</td>
<td>6</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td>% scoring &gt; 9</td>
<td>30</td>
<td>19</td>
<td>11 (4.22) *</td>
</tr>
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* p < 0.001
Results – Parent-identified strategies

- 75% of mothers found the clinic helpful
- Very helpful strategies (endorsed by > 80%)
  - talking about the infant
  - reassurance that infant medically well
  - explanation of normal infant cry/sleep patterns
  - talking about parent feelings
- Helpful strategies (endorsed by ~ 70%)
  - sleep diary, settling techniques, advice for parent to rest once a day

Results – Sleep in parents

- Sleep quality improved for mothers (p=0.04) but not for fathers
- Sleep quantity increased for both but not statistically significant

Results – Logistic regression

- Resolution of primary problem less likely if
  - baby was a girl
    - adjusted OR 0.22, 95% CI 0.06 to 0.75, p=0.02
- Resolution of primary problem unaffected by
  - baby age
    - adjusted OR 1.04, 96% CI 0.96 to 1.12, p=0.35
  - maternal baseline EPDS > 12
    - adjusted OR 0.68, 96% CI 0.23 to 2.03, p=0.5

Conclusions

- Infant crying and sleep problems are associated with poor maternal and paternal mental health
- Clinicians need to assess the mental health of fathers too
- Parents want their baby examined, reassurance their baby is medically ok, explanation of normal sleep/crying patterns

Future directions

- 2007/08 Baby Business
  - developed and piloted a prevention program to
  - 2 sessions at 3 and 8 -10 weeks
  - includes parent endorsed strategies
- 2010 – randomised controlled trial to evaluate the program

Acknowledgements

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