

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

J Smart, H Hiscock
Centre for Community Child Health,
Royal Children's Hospital, Melbourne



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 symptoms¹
 - impairs ability to care for infant
- Anxiety
- Relationship and family stress

¹Bayer J, Hiscock H et al. *J Paeds Child Health* 2007



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



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

| | Mothers | Fathers | Infants |
|---------------|---------|---------|---------|
| N | 72 | 69 | 72 |
| Before visit | 99% | 86% | |
| 3 weeks later | 82% | 76% | |



Sample

| | Mothers | Fathers | Infants |
|-----------------------|---------|---------|--------------|
| Age (mean) | 32.6 | 34.5 | 14.9 (weeks) |
| Tertiary educated (%) | 48 | 37 | |
| Australian born (%) | 77 | 75 | |
| Married/de facto (%) | 97 | | |
| Male infant (%) | | | 63 |
| Term delivery (%) | | | 93 |
| First-born | | | 65 |



Results – Infant behaviour

| | Mothers | Fathers |
|------------------------------------|---------|---------|
| Presenting problem (%) | | |
| sleep | 45 | 59 |
| crying | 42 | 37 |
| feeding | 11 | 2 |
| Problem resolved after 1 visit (%) | 36 | 45 |
| Change in severity (median) | 2* | 1* |

* p < 0.05



Results – Parent wellbeing

| | Pre-clinic | Post-clinic | Difference (95% CI) |
|----------------|------------|-------------|---------------------|
| Mothers | | | |
| Median EPDS | 11 | 7 | - |
| % scoring > 12 | 45 | 15 | 30 (16,42) * |
| Fathers | | | |
| Median EPDS | 6 | 4 | - |
| % scoring > 9 | 30 | 19 | 11 (4,22) * |

* 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, 95% CI 0.96 to 1.12, $p=0.35$
 - maternal baseline EPDS > 12
 - adjusted OR 0.68, 95% 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 reduce early infant behaviour problems and associated parent depression
 - 2 sessions at 3 and 8 -10 weeks
 - includes parent endorsed strategies
- 2010 – randomised controlled trial to evaluate the program



Acknowledgements

- Smart J and Hiscock H. Early infant cry and sleep problems: a pilot study of impact on parental wellbeing and parent-endorsed strategies for management. *J Paediatr Child Health*, Volume 43, Issue 4: 284-290. doi: 10.1111/j.1440-1754.2007.01060.x
- With thanks to the Anna-Jane Trust for funding this study

