Nurse-led Pediatric Sleep Clinic
Services for sleep disturbed infants and their parents

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Todays’ s disscussion

• How has research been a part of our everyday work
• How we work with both parents and children
• What do we do – the everyday life at the clinic
• What is a sleep problem?
Sleep problems are some of the symptoms of Regulatory Problems (RP)

• Definition of RP:
  ◦ difficulties with self-regulation,
  ◦ fussiness,
  ◦ irritability,
  ◦ poor self-calming,
  ◦ hyper-alert state of arousal and mood regulation
What are “Sleep problems”

- Waking up at night
- Difficulty falling asleep
- Irregular day sleep
- Irritability of the child
- Parental factors
Various reason for “Sleep problems”

• Parents: Parenting style. Depression and anxiety.


How common are “Sleep problems”

• Night waking and problems in settling at bedtime have been shown to occur in 20-40% of under 3 year old children and 8% in 4 year olds.
Studies played a important part in building up the service

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<tr>
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<tr>
<td>Hospitalized children and their parents</td>
<td>Outpatient clinic for sleep-disturbed infants</td>
<td>Follow-up of infants/parents from Study I at age 3-4 yrs. &amp; Comparison with population sample</td>
<td>Sleeping and feeding habits in newborn infants in Iceland and the well being of their parents</td>
<td>Family nursing in the pediatric unit</td>
<td>Descriptive analysis of intervention for young children’s sleep problems</td>
</tr>
<tr>
<td>35 infants and parents</td>
<td>196 infants and parents</td>
<td>55 infants and parents</td>
<td>42 infants and parents</td>
<td>148 nurses</td>
<td>10-15 families</td>
</tr>
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3.10.2011
Study 1


• Infants (n=33) with sleep problems were treated by the nurse and outcomes were evaluated with regard to
  – changes in sleep pattern and
  – the distress of parents.
  – using sleep diary and questioners


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Study 1

**Intervention**

- Learning to fall asleep on its own in a bed
- Reduce assistance in both falling asleep and when waking up at night
- Stop night feeding
- Changing environment
- Changing who is taking care of the child
### Results: Infant Sleep (n=33)

<table>
<thead>
<tr>
<th></th>
<th>Before</th>
<th>After</th>
<th>Improvement</th>
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<tbody>
<tr>
<td>Night sleep</td>
<td>9.1</td>
<td>10.9</td>
<td>1.8 hours</td>
</tr>
<tr>
<td>Night waking</td>
<td>5.3</td>
<td>1.1</td>
<td>4.2 times</td>
</tr>
</tbody>
</table>

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Outpatient clinic for sleep-disturbed infants and their parents (1999-2000)

• To test the effectiveness of the intervention for the sample at the outpatient clinic.
• To develop knowledge regarding daytime regulation of sleep problems
• 194 children aged 1 month to 4 years
Study 2

Intervention

• The same as before
  – Learning self-calming, both falling asleep and when waking up at night

• Various behavioral technique
  – “Camping out” and “shaping” techniques

• Education
Study 2

Results Infant Sleep (n=194)

Night sleep: before and after

<table>
<thead>
<tr>
<th>Ages of the children</th>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-4 month</td>
<td>9.5</td>
<td>10.5</td>
</tr>
<tr>
<td>5-8 month</td>
<td>10.5</td>
<td>11.5</td>
</tr>
<tr>
<td>9-14 month</td>
<td>11.0</td>
<td>11.5</td>
</tr>
<tr>
<td>15-23 month</td>
<td>11.5</td>
<td>12.0</td>
</tr>
<tr>
<td>2-4 years</td>
<td>10.5</td>
<td>11.0</td>
</tr>
</tbody>
</table>
Study 2

Results Infant Sleep (n=194)

Night waking: before and after

<table>
<thead>
<tr>
<th>Times of night waking each night</th>
<th>1-4 month</th>
<th>5-8 month</th>
<th>9-14 month</th>
<th>15-23 month</th>
<th>2-4 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>before</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>after</td>
<td>1</td>
<td>1</td>
<td>0.5</td>
<td>0.7</td>
<td>0.8</td>
</tr>
</tbody>
</table>

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Treating daytime sleep problems

• Focused on children with disturbed timing of daytime. Improved daytime sleep led to improvements in night sleep

Atypical and typical day/night sleep periods

Child **8 months** of age

The red part is sleep and the blue one awake
Can all children learn to fall asleep on their own?

% of children in each ages group

- unchanged
- better
- good

1-4 months  5-8 months  9-14 months  15-24 months  2-4 years

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Study 3

Follow-up of infants/parents from Study I now at age 3-4 yrs. & Comparison with population sample

• To evaluate the long-term effect of treatment for sleep disturbances from infancy to pre-school regard to:
  – Sleep pattern and
  – Parental Mental Health.

• To compare children’s sleep pattern and parental mental health in a population sample.
Study 3

Results:
• Sleep problems of former in-patients kept on improving to preschool age
• But still significantly different from that of the community group (night waking, settling for sleep).
• Parents of the in-patient group suffered significantly more fatigue in the long term than those in the community group

Study 3

**Child temperament**

- Active and impulsive
- Sensitive and slow adaptation
- Distractability
Isn’t prevention better than cure?
To test the efficacy of an educational program for parent with preterm infants on
* the infant sleeping and
* feeding habits and
* their parents fatigue

14 weeks after discharged from the NICU
Control group -- Intervention group

Parents of 42 infants

• Educational program offered at discharge
  – one 3 hour group session
• Afterwards the parents got a booklet with the contents of the lectures.
• Data were collected 14 weeks after discharge.
Intervention
What to expect

• Feeding habits
• Sleeping habits
  – Arousal - Wakes up a little
  – Timing of sleep both day and night sleep
• Being parents
  – Interaction of feelings
  – Important for parents to look after themselves
• Individual differences between children
Result: Infants sleep (from the diary)

Comparison 14 weeks after discharge

Control group
- Night waking: 2.7
- Total sleep: 14.4
- Night sleep: 9.3

Intervention group
- Night waking: 1.5
- Total sleep: 15.6
- Night sleep: 10.3

Legend:
- Light yellow: night waking
- Maroon: total sleep
- Blue: night sleep
Descriptive analysis of intervention for young children’s sleep problems

- Digitally voice recorded
- Field notes
- Reflection diary
Preventing work

Sweet Dreams
I'm sorry you didn't get much sleep. Wren was so fussy.

Maybe you can get a nap later. That would be nice.

At least you don't have to go to work. Yeah, raising kids is just my hobby.

Have a nice day.