Swedish Adolescents' Sleep: (Poor) Habits and Health

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Sleep and health

• After one night of insufficient sleep:
  – Stronger negative emotions
  – Impaired ability to solve problems
  – Lower impulse control
  – Difficulties to learn (attention, memory coding)

• Insomnia = risk factor of depression

• Short sleep = associated with (almost) every ailment

• Timing of sleep matters!
  – Ease to fall asleep
  – Gains from sleep
Research questions

- Have child and adolescent sleep habits changed over time in Sweden? (Bedtimes, total sleep)
- Are there associations between sleep and psychosomatic problems? (Sleep duration, insomnia)
Sleep habits over time


ORIGINAL ARTICLE

Changes in sleep habits between 1985 and 2013 among children and adolescents in Sweden

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Abstract

Aims: The aim was to investigate changes in child and adolescent sleep habits in Sweden over time. This had not been done previously. Methods: Cross-sectional questionnaire data over three decades of investigations of the Health Behaviours of School Children study (1985/1986, 2005/2006 and 2013/2014) were used. The sample included 18,682 children and adolescents, aged 11, 13 and 15. Empirically based age-specific sleep duration recommendations were used to operationalise sleep duration. Results: The results showed that, over time, fewer go to bed early and more go to bed late. Regarding sleep duration, there have been decreases in the proportion of children and adolescents that sleep as much as is recommended for their age. Sleep onset difficulties have increased for all ages and increase the odds of sleeping less than recommended as well as having late bedtimes. Boys were more likely than girls to have later bedtimes and to sleep less than recommended. A vocational educational track, not planning to study further or being unsure of which track to choose increased the odds for 15 year olds to have late bedtimes and to sleep less than recommended compared with a college preparatory track. Conclusions: The results indicate that over time, fewer children and adolescents attain sufficient sleep duration. This may have implications for study results, mental health and cognitive abilities.

Key Words: Educational track, bedtime, gender, sleep deficit, sleep duration, sleep habits, sleep initiation dysfunction, time trends
Late bedtimes: 11 pm or later

- Boys: 11 pm or later
- Girls: 11 pm or later
Age-Specific Recommended Sleep durations*

Sufficient sleep duration: school nights & weekends

Unpublished data
Who sleeps less than they should?

- Insomnia symptoms (OR: 1.55-2.00)
- 11 year old boys, 13 year old girls

15 year olds
- Planning an occupational track in 10-12\textsuperscript{th} year of school (OR: 1.26)
- Not sure what to study (OR 1.76)
- Other plans than studies after 9\textsuperscript{th} grade (OR: 1:90)
Main findings

• More go to bed late on school nights
• More sleep less than recommended
• Trend since 1985

• How are they doing?
Child and adolescent sleep duration recommendations in relation to psychological and somatic complaints based on data between 1985 and 2013 from 11 to 15 year-olds

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ARTICLE INFO

Keywords: Adolescents Bedtime Mood Pain Sleep duration Sleep onset difficulties

ABSTRACT

Purpose: To investigate the association between sleep duration, sleep initiation difficulties and psychological and somatic complaints.

Methods: We used three cohorts of cross-sectional Swedish questionnaire data, from the Health Behaviours of School aged Children (1985/1986, 2005/2006, 2013/2014, n = > 18,000, aged 11–15). Specific complaints (e.g. pain) and total complaint load were used as outcomes of sleep duration, sleep initiation difficulties and the combination of them both.

Results: Sleeping less than recommended and sleep initiation difficulties were associated with increased odds of specific complaints and belonging to the group with the greatest complaint load. The combination of short sleep duration and sleep initiation difficulties were associated with higher odds than either sleep issue alone. No interaction effects between time and sleep variables were found regarding complaints.

Conclusions: The findings support recent sleep duration recommendations. Further, sleep issues warrant a broad health assessment as they indicate a high likelihood of other complaints.
Sleep and health in studies

- Short sleep associated with almost every health complaint in adults
- Adolescent insomnia complaints often used as proxy for short sleep but...
Sleep duration & psychosomatic complaints*
Sleep duration & psychosomatic complaints*

**Irritated**
- Girls <7h
- Girls ≥8 h
- Boys <7h
- Boys ≥8 h

**Sad**
- Girls <7h
- Girls ≥8 h
- Boys <7h
- Boys ≥8 h

**Nervous**
- Girls <7h
- Girls ≥8 h
- Boys <7h
- Boys ≥8 h

**Difficulties falling asleep**
- Girls <7h
- Girls ≥8 h
- Boys <7h
- Boys ≥8 h

*15 year olds*
...but insomnia was associated with more “sufferers” per complaint

• Next step!

• Division into categories

• 1. No insomnia, recommended sleep length
• 2. Insomnia, less than recommended sleep length
• 3. No insomnia, less than recommended sleep length
• 4. Insomnia, recommended sleep length
Insomnia + less than recommended sleep is worst but insomnia worse than just short sleep

<table>
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<th>Stomach pain</th>
<th>Back pain</th>
<th>Sad</th>
<th>Irritated</th>
<th>Nervous</th>
<th>Dizzy</th>
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<td>&lt;8 h Insomnia</td>
<td>4.56***</td>
<td>3.66***</td>
<td>3.53***</td>
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<td>5.80***</td>
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<td>4.43***</td>
<td>4.07***</td>
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</tr>
</tbody>
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**Note:** OR = Odds Ratio, *** = p < 0.001, ** = p < 0.01, * = p < 0.05
Conclusions

• Bedtimes and sleep length has changed since the 1980’s
• Both insomnia symptoms and short sleep are associated with psychosomatic health complaints
• Insomnia is a stronger marker for all health complaints
• More concern for a teen with troubles falling asleep compared with one who does not sleep enough
• Need for greater understanding of adolescents perceptions and experiences regarding sleep and sleep habits
Thank you for listening!

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