

Treating sleep problems in school-aged children with Attention Deficit Hyperactivity Disorder (ADHD): A pilot study.

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Background

- Sleep problems in children with ADHD are
 - common, affecting up to 70%
 - pose additional burdens on child and family¹
- Appropriate management of sleep problems may
 - reduce ADHD symptoms
 - reduce need for stimulant medication
- Currently little evidence to guide sleep problem management

¹ Sung et al, *ArchPed Adol Med* 2008

Aims

- 1) Assess the feasibility and helpfulness of a brief (**single session**) versus intensive (**2-3 session**) behavioural sleep program in school aged children with ADHD
- 2) Explore the impact on child sleep, ADHD symptoms, quality of life, school attendance and parent mental health and work attendance

Method

- 27 families
- School aged children with physician diagnosis of ADHD
- Moderate or severe sleep problems (parent report)
- At least one behavioural sleep disorder (American Academy of Sleep Medicine criteria)

Method

- 43 eligible families identified
 - 2006 survey of school aged children with ADHD
 - Outpatients departments at RCH
- 27 consented (63% response rate)
- No differences in gender, age, mean SEIFA scores

Method

- Families randomised to receive brief or intensive sleep program
- Program delivered by trained clinicians (MF or ES, trainee psychologist)
- Sleep intervention comprised
 - information about normal sleep
 - healthy sleep hygiene practices
 - standard behavioural approaches to the management of sleep problems

Method

- Examples of behavioural strategies
 - Limit setting disorder
 - ignoring child protests and rewarding compliance with bedtime routines.
 - Delayed sleep phase
 - temporarily setting the child's bedtime later, then gradually bringing it forward, and waking the child at a pre- set time in the morning to ensure they do not sleep in

Method

- Clinicians recorded on a study-designed consultation record
 - sleep problem diagnosis/es,
 - consultation duration
 - management strategies chosen by family
 - parent handouts given
- Primary caregivers completed questionnaires at baseline, 2 and 5 months post randomisation

Questionnaires

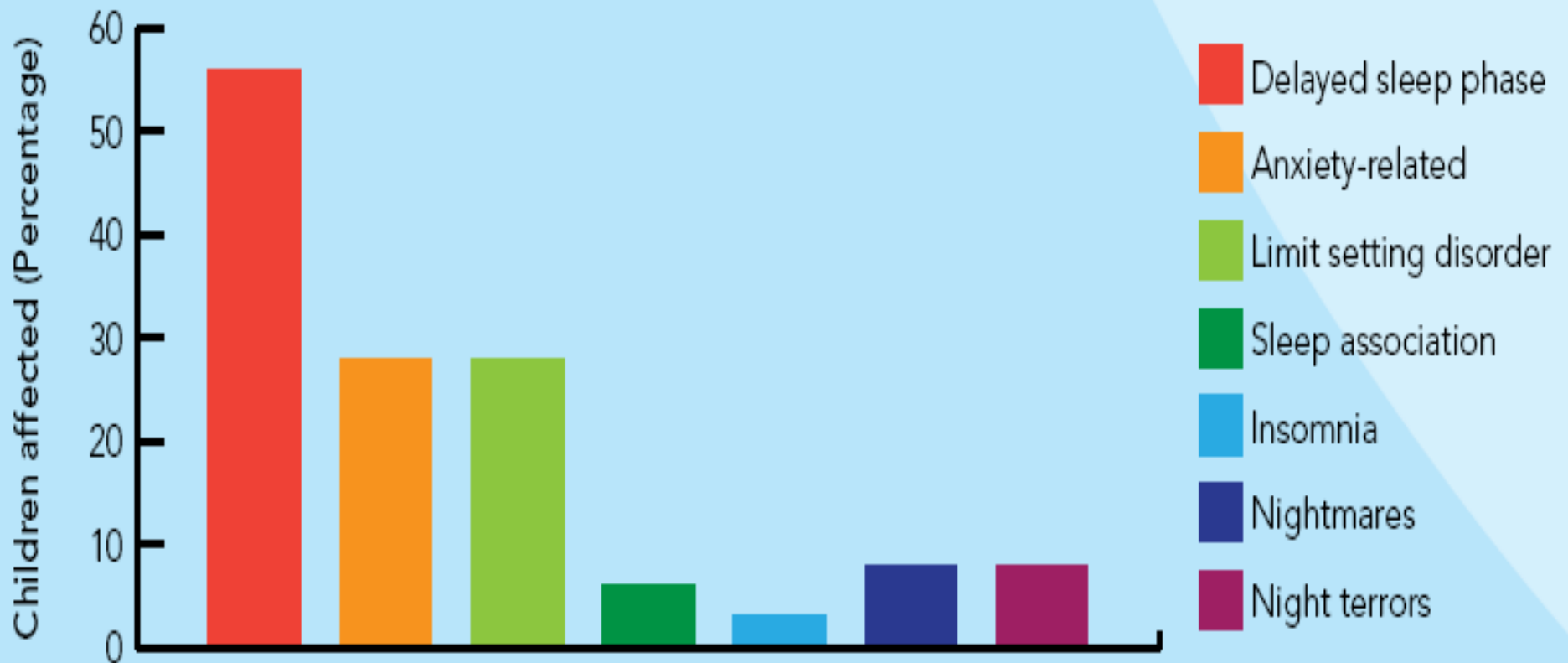
- Frequency of use and helpfulness of sleep strategies
- Child
 - sleep problems and patterns (Child Sleep Habits Q)
 - ADHD symptoms (DSM ADHD Rating Scale IV) and co-morbidities (SNAP)
 - quality of life (PedsQL)
 - daily functioning (DMREB)
 - school attendance
- Caregiver
 - mental health (DASS)
 - work attendance

Results

- Baseline characteristics similar
- 78% Male
- Mean age 11yrs, range 6 to 15 yrs
- 70% on stimulant medication
- 67% at least one co-morbid disorder
 - Learning difficulty 37%,
 - Autism spectrum disorder 26%

Results – sleep problems

Child sleep problems



Results: Feasibility and Helpfulness

- 89% of caregivers would recommend the program to other families with children with ADHD
- Most caregivers reported the sleep advice/strategies to be helpful
- Most caregivers were able to implement the strategies most of the time.

Table 2: Caregiver report of the helpfulness of advice/strategies and their ability to put strategies into practice

	Helpful (%)	Ability to put into practice Mean (SD) ^{a,b}
Normal sleep	94	na
Setting bedtimes	94	3.4 (.8)
Sleep diary	93	na
Limit setting around curtain calls	93	3.4 (1.1)
Good sleep hygiene e.g. removing TV/computer from room	87	3.5 (.8)
Reward strategies e.g. stickers, lucky dip	85	3.2 (1.0)
Relaxation strategies	83	2.7 (1.1)
Sleep plan	82	na
Returning child to bed overnight	75	3.4 (1.2)
The checking/re-checking method i.e. returning to the child's bedroom at set times to check on them	73	3.1 (1.1)
Bedtime fading	67	3.2 (1.1)
Melatonin	67	3.0 (1.7)

^a Range from 1 = not at all; 2 = about ? of the time; 3 = about half of the time; 4 = almost all of the time

^b N ranges from 3–17 as not all parents were offered each strategy

Sleep problems and ADHD Symptoms at 2 Months

	Improvement in Sleep Problem	Reduction in ADHD Symptoms
Brief Program	25%	50%*
Intensive Program	64%	50%*

Sleep problems and ADHD Symptoms at 5 Months

	Improvement in Sleep Problem	Reduction in ADHD Symptoms
Brief Program	67%	78%*
Intensive Program	67%	67%*

Results

In families receiving the intensive program there was also improved:

- Child psychosocial quality of life (7.36 vs 1.67)(0.5 S.D)
- Daily function (4.13 vs 0.67)(0.5S.D)
- Parental anxiety (0.5 S.D)

Conclusion

- First study to report on a behavioural sleep intervention program in school aged children with ADHD
- Both programs were feasible to deliver and helpful to families
- Both programs resulted in reduced sleep problems
- Intensive program may have additional child/caregiver benefits.
- A well powered randomised controlled trial is required to determine the impact on child and family outcomes

Thank you

Co-Investigators

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Foundations For Children

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The participating children and their families