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Identifying Sleep Disorders and Proper Sleep Hygiene in School-Aged Children

Katie Colelli

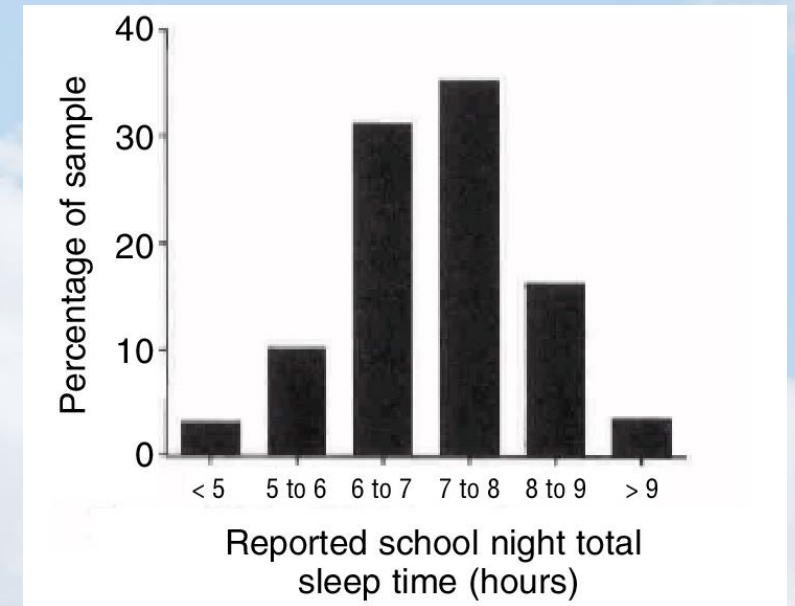
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Mentor: Dr. John Chisholm

Prevalence of Sleep Problems and its Effects on Children

- Despite CDC recommendations that school aged children need at least 10 hours of sleep a day and teenagers need 9-10 hours, reported sleep totals are much less (1, 2)

Age	Recommended Amount of Sleep
Newborns	16–18 hours a day
Preschool-aged children	11–12 hours a day
School-aged children	At least 10 hours a day
Teens	9–10 hours a day
Adults (including the elderly)	7–8 hours a day



Prevalence of Sleep Problems and its Effects on Children

- Studies have found that 20-30% of children have significant sleep problems
 - It is estimated that 5 to 40 percent of 4-10-year old children have sleep problems ranging from bedtime resistance to sleep-related anxiety
 - It is estimated 11 percent of 13-16-year old children have sleep problems and it is especially high among those with neurodevelopmental and psychiatric disorders (5)
- The decline in sleep duration has been attributed to many factors including a desire for independence, increased academic demands, and growing social and recreational opportunities (1).
- Poor sleep during childhood contributes to adverse outcomes including physical, cognitive, emotional and social development as well as maternal fatigue and depression (7)

Public Health Cost of Sleep Disorders

- In our community there is a significant problem with sleep that cannot adequately be met by our providers. There are patients seen daily with a chief complaint of fatigue and their problems often cannot be treated with medication alone. There can be long waiting lists to see counselors who specialize in sleep therapy and sleep studies are scheduled months in advance. There is also a great lack of education on proper sleep hygiene and when to contact a medical professional for children. Children are often unaware that they have a problem with sleep and do not seek help.
- These sleep problems can worsen in adulthood
 - Between 50-70 million adults are estimated to have sleep problems
 - Healthcare expenses and lost productivity cost billions of dollars a year
 - Over 100,000 automobile crashes are due to drowsy drivers each year (4)
 - A 1994 analysis of automobile accidents estimated the cost of sleep related accidents to be between \$29.2 to \$37.9 billion (1)

Public Health Cost of Sleep Disorders

- Patients in the highest 25% of the Epworth Sleepiness Scale have an 11 percent increase in health care utilization
- Billions of dollars are spent each year in the United States on the direct costs of sleep loss and sleep disorders. These include doctor visits, hospital services, prescriptions and over-the-counter medications. In 1995 the direct cost in the United States was estimated to be \$13.9 billion
- The indirect costs associated with sleep loss and sleep disorders also result in billions of dollars including costs associated with illness-related morbidity and mortality, absenteeism, disability, reduction or loss of productivity, industrial and motor vehicle accidents, hospitalization, and increased alcohol consumption
- It has been found that sleep problems lead to decreased academic performance, increased absences from school and symptoms of depressed mood (1)

Community Perspective On Sleep Problems in Children

- Susan Dunning, M. D. – UVM Medical Center Sleep Center
 - She has found a great need for sleep education in children. There is very little, if any education in schools.
 - The number of hours of sleep school aged children get a night has decreased over one hour
 - She thinks it would be very helpful to implement a survey in schools to determine the current issue and then make a brochure, patient information document or teaching session in schools for greater education
 - There are many myths surrounding proper sleep including the proper use and effects of melatonin and the use of alcohol as a sleep agent
 - While many children have sleep disorders that need to be treated, a more common problem among children is sleep restriction and poor sleep hygiene. Another major factor leading to poor sleep in children is psychological difficulties such as anxiety and depression.
- Name Withheld, MSW, LICSW – Colchester Family Practice
 - She receives referrals for patients to undergo CBT for sleep disorders, but has found that people are not as interested in this type of therapy and want medication to help them sleep
 - She was trained in CBT and implements training in Sleep Management Programs and Sleep Pattern Adjustment

Intervention and Methodology

- After discussing the levels of education children receive on sleep disorders and sleep hygiene, a survey was created for high school students to assess the current level of sleep problems and what factors may be contributing to the problems
- A brochure was made to educate school aged children on proper sleep hygiene and when they should contact a medical professional for further evaluation. The brochure will be made available at the Colchester Family Practice and can also be used as a teaching tool in schools for further education.
- Practitioners at Colchester Family Practice have identified sleep education in children as a need and would implement the use of the brochure to further educate their patients. This would better help them with their sleep and therefore their overall physical and mental health

Results of Intervention on Sleep

- When survey data have been collected, it will be analyzed to determine how significant the problem is regarding adequate sleep based on average hours of sleep per night and whether they feel they are getting enough sleep
- Factors leading to poor hygiene will be analyzed to determine what is impacting sleep such as screens, caffeine, alcohol and sleep environment

Evaluation of Effectiveness and Limitations

- After brochures have been distributed and teaching has been conducted in schools a second survey will be administered to determine if these interventions impacted children's sleep
- The second survey will be compared to the first to determine if there was significant change in hours of sleep and feelings of adequate sleep
- The greatest limitation of this project will be motivating children to implement the recommended changes highlighted in the brochure
- Another limitation will be accurately determining if changes in sleep behavior have a significant impact on their physical and mental health as well as school performance

Recommendations for Further Evaluation

- After collection of initial survey data from high school students, brochures can be handed out at well child checks and made available in schools. Lesson plans based off of the brochure can be given to teachers.
- If the initial survey is conducted early in the year, the survey can be re-administered late in the school year to determine if the brochure and teaching had an impact on sleep
- It may also be helpful to educate parents of younger children on proper sleep hygiene so children can learn these behaviors earlier in life

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