Short Sleep Duration and Obesity Among Children: A Meta-Analysis

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Statement of the Problem:

Childhood obesity is a global concern.

Purpose:

The objectives of this meta-analytical study were to examine whether there is an association between lesser sleep duration and risk of childhood obesity. It also aims to determine which gender is more common and is more evidently seen in childhood obesity.

Methods:

This study is a meta-analysis in design which is simply statistical modelling: the use of probability models to summarize data with estimates of parameters from the summarizing model. The methods included searching databases (PubMed, Google Scholar, and the university's EBSCOhost Web service) as well as hand searching reference lists of articles published in English. Selection criteria for studies to be included in the meta-analysis were limited to studies that reported body mass index (BMI) as a means of measurement and reported sleep measurement from parental report through questionnaire, cross-sectional and cohort studies. Data was analyzed using Review Manager (Statement of the Problem:

Results:

The searched strategy initially resulted in 307 articles. After reviewing the titles and abstracts in detail, a total of 10 studies were included for potential eligibility in the pooled analysis. The researcher hypothesized the meta-analysis would yield a summary effect size of magnitude which would indicate that lesser duration would yield to an increase in prevalence of childhood obesity. Shorter childhood sleep times were significantly associated with obesity. Possible mechanisms include direct metabolic effects as well as indirect behavioral pathways, sleep quality impairment and duration, biological probability and hormonal responses activation. RevMan, version 5.3; Cochrane Collaboration. Significance will be set at P < 0.05 throughout.

Conclusion:

This study provides the first meta-analysis to describe an association between lesser duration of sleep and obesity in population-based studies of children around the world. Sleep deprivation play a significant role in the etiology of obesity among children. These findings support the hypothesis that sleep duration is associated with obesity in a large sample and the findings have a significant implication in the creation of a school-based intervention program to reduce childhood obesity.

Title:
Short Sleep Duration and Obesity Among Children: A Meta-Analysis
Keywords:
Sleep duration, obese children and sleep deprivation

References:


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Abstract Summary:
This meta-analytical study examined whether there is an association between lesser sleep duration and risk of childhood obesity and to determine which gender is more common in childhood obesity.

Content Outline:

1. **Introduction**
   2. Childhood obesity is a global concern. The objectives of this meta-analytical study were to examine whether there is an association between lesser sleep duration and risk of childhood obesity and to determine which gender is more common in childhood obesity.

3. **Body**

   1. Effect size
      1. The researcher hypothesized the meta-analysis would yield a summary effect size of magnitude which would indicate that lesser duration would yield to an increase in prevalence of childhood obesity.
      2. Forest Plot interpretation

      (Odds Ratio, Confidence Interval, p value)

   1. Shorter childhood sleep times were significantly associated with obesity

   1. Mechanisms involved in the association of sleep duration and childhood obesity

      1. Possible mechanisms include direct metabolic effects as well as indirect behavioral pathways, sleep quality impairment and duration, biological probability and hormonal responses activation.

**Conclusion**
1. These findings support the hypothesis that sleep duration is associated with obesity in a large sample and the findings have a significant implication in the creation of a school-based intervention program to reduce childhood obesity.

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Author Summary: She has her expertise in child health care and improvement of the health status of the school-aged community. Creation of health awareness programs in relation to research. One of the successful program is named as “Health Awareness Promotion as an Education Advancement” (HAPREA) which has been the baseline school health program developed last year and is currently being done in her workplace. A public health advocate, and one of a great help in the creation of school health policies.