The Association Between Sleep and Bullying Behavior

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BACKGROUND

- Bullying is a highly prevalent behavior in school-aged children and adolescents, affecting nearly 20-30% of population globally.[1]
- Studies have reported that as many as 85% of children have witnessed bullying towards other children.[2]
- Sleep difficulties affect around 25% of children and adolescents with about 5% of youth meeting the diagnostic criteria for the sleep disorder insomnia.[3]
- Children and adolescents with sleep difficulties are more at risk for serious public health issues, including anxiety, depression, poor somatic health, substance use, poor academic achievement, poor cognitive performance, and lower life satisfaction.[3,4,5]
- Bullying is significantly less studied in perpetrators than victims, lending a need for more research in this area.[3]

OBJECTIVES

To identify whether an association exists between poor sleep and bullying behavior in school-aged children (aged 6-17 years).

STUDY DESIGN

- Data was analyzed using 65,064 children from the 2011-2012 National Survey of Children's Health (NSCH).
- Adequate vs. Inadequate sleep was assessed based off number of nights of adequate sleep a child received in a week.
- Bullying behavior was assessed based off of frequency of bullying behavior.
- Bivariate analyses, logistic regression, and survey weights were used to evaluate and model the association between sleep and bullying behavior.

STUDY FLOWCHART

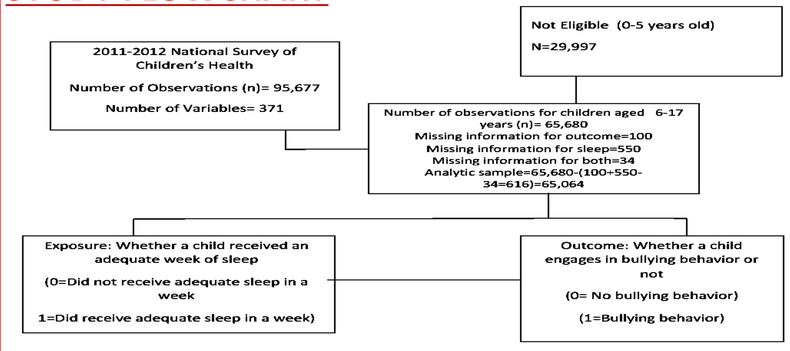

TABLE 1

	Not Adequate Sleep (=/<3 Nights/Week)	Adequate Sleep (>4 Nights/Week)
	8.46% (5,507) Weighted (%n)	91.54%(59,557) Weighted (%n)
Gender		
Male	50.7%(2808)	51.3%(30847)
Female	49.3%(2693)	48.7%(28630)
Child's Age		
6-12 Years	36.9%(1823)	60.2%(34828)
13-17 Years	63.1%(3684)	39.8%(24729)
Depression Status		
Diagnosed with Depression	10.8%(649)	4.34%(2556)
Not Diagnosed with Depression	89.2%(4853)	95.7%(56959)
Race		
White/Caucasian	65.7%(4028)	66.6%(43456)
Black/African-American	15.5%(573)	15%(5866)
Other	18.8%(793)	18.3%(8699)
Poverty Level*		
At or Below 100% of Poverty	20.3%(728)	19.8%(7109)
Above 100% to at or below 400% Poverty Level	49.4%(2362)	51.6%(26594)
Above 400% Poverty Level	30.4%(1939)	28.5%(20358)
General Health Status		
Healthy	94%(5181)	96.8%(58076)
Unhealthy	6.01%(326)	3.17%(1461)
Bullying (Outcome)		
No Significant Bullying Behavior	77.7%(4584)	86.2%(53343)
Significant Bullying Behavior	22.3%(923)	13.8%(6214)

**More than 9% missing data.*

TABLE 2

	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Sleep Status		
Does Not Receive Adequate Sleep	1.78(1.51,2.10)	1.74(1.46,2.08)
Receives Adequate Sleep	1.00(ref)	1.00(ref)
Gender		
Male	1.11(1.00,1.24)	1.01(0.99,1.24)
Female	1.00 (ref)	1.00 (ref)
Depression Status		
Diagnosed with Depression	0.29 (0.24,0.35)	0.34(0.28,0.45)
Not Diagnosed with Depression	1.00 (ref)	1.00 (ref)
Race		
White/Caucasian	0.70(0.6,0.81)	0.81(0.69,0.95)
Black/African-American	1.26 (1.1,1.51)	1.22(1.01,1.47)
Other	1.00(ref)	1.0(ref)
Poverty Level		
At or Below 100% of Poverty	4.07(3.45,4.79)	3.68(3.11,4.35)
Above 100% of Poverty Level to at or below 400% Poverty Level	2.128(1.84,2.46)	2.05(1.77,2.37)
Above 400% Poverty Level	1.00(ref)	1.00(ref)
General Health Status		
Healthy	0.36(0.28,0.46)	0.59(0.44,0.79)
Unhealthy	1.00(ref)	1.00(ref)
Child's Age		
6-12 Years	1.07(1.00,1.20)	1.17(1.04,1.32)
13-17 Years	1.00(ref)	1.00(ref)

RESULTS

- Results show that among children aged 6-17 who do not receive an adequate amount of sleep in a week, 22.3% have perpetrated significant bullying behavior, compared to 13.8% for children who do receive an adequate amount of sleep in a week.
- Those who did not receive adequate sleep had 1.78 (95% CI: 1.41, 2.10) times the odds of engaging in bullying behavior compared to respondents who received adequate sleep.
- Adjusting for covariates including gender, depression status, race, poverty status, general health status, and child's age, the odds of engaging in bullying behavior for respondents who do not receive adequate sleep are 1.74 (95% CI: 1.46, 2.08).

CONCLUSIONS

- The findings demonstrate a statistically significant association between not receiving an adequate amount of sleep in a week and engaging in bullying behavior in school-aged children.
- Findings did not demonstrate a statistically meaningful relationship between gender and engaging in bullying behavior. The association between gender, sleep and bullying behavior should be explored in further research.
- Future research and analyses should further aim to understand associations in this area of research, such as in minority populations and within children from specific age groups in order to prevent harmful bullying behavior and its' long-term effects.

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