ABSTRACT

Sleep is critical for healthy development; however many children experience sleep problems. Both typically developing (TD) children and those with attention-deficit/hyperactivity disorder (ADHD) commonly report prolonged sleep onset latency (SOL) and short sleep duration. The primary objective of this dissertation was to better understand the relationship between sleep and ADHD in school-aged children. This dissertation consists of a narrative review of the sleep restriction literature in school-aged children, and two empirical studies. Results from the narrative review found that all of the eight experimental sleep restriction studies examined sleep restriction/deprivation compared to extended/optimized or baseline sleep. As such, the impact of sleep restriction in school-aged children is unknown. The first empirical study was a within- and between-subjects experimental sleep restriction study. Participants were children with ADHD (n = 18), and age- and sex-matched TD children (n = 18). Participants experienced a Restricted condition (i.e., time in bed (TIB) reduced by 1 h per night for six nights), and a Typical condition (i.e., TIB based on habitual sleep). Results of actigraphy data showed that children had significantly less TIB and total sleep time (TST). However, SOL and wake after sleep onset (WASO) were shortened during Restricted condition, thereby reducing the effect of the restriction. There was a significant effect of sleep condition on objectively measured attention and subjectively measured emotion. Children with ADHD were not differentially affected by sleep restriction compared to TD children. In the second empirical study, baseline sleep data were explored as predictors of treatment effectiveness and side-effects for children with ADHD (N = 50) undergoing a stimulant medication trial. Results showed that pre-treatment parent-rated sleep duration predicted treatment effectiveness (i.e., ADHD symptom reduction), and subjective baseline sleep problems predicted more insomnia side-effects during medication, but not global side-effects. Actigraphy did not significantly predict treatment effectiveness or side-effects of any kind. Results of these studies provide evidence for the importance of assessing and monitoring sleep in both TD children and those with ADHD. These results also highlight that sleep plays an important role in healthy functioning, and may be helpful in predicting treatment response for children with ADHD.