Objective: Conduct secondary analyses on longitudinal data to determine if caregiver-reported sleep quantity and sleep problems across early childhood (ages 2 – 5 years) predict their child's attention and executive functioning at age 8 years.
Participants and Methods: This study utilized data from the Health Outcomes and Measures of the Environment (HOME) Study. The HOME Study recruited pregnant women from 2003-2006 within a nine-county area surrounding Cincinnati, OH. Caregivers reported on their child's sleep patterns when children were roughly 2, 2.5, 3, 4, and 5 years of age. Our analysis included 410 participants from the HOME Study where caregivers reported sleep measures on at least 1 occasion or their child completed an assessment of attention and executive functioning at age 8.
At each time point, caregiver report on an adapted version of the Child Sleep Habits Questionnaire (CSHQ) was used to determine: (1) total sleep time (TST; "your child's usual amount of sleep each day, combining nighttime sleep and naps") and (2) overall sleep problems (23 items related to difficulties with sleep onset, sleep maintenance, and nocturnal events). Our outcome variables, collected at age 8, included caregiver-report forms and measures of attention and executive functioning. Caregiver report measures included normed scores on the Behavior Rating Inventory of Executive Function, from which we focused on the Behavior Regulation Index (BRIEF BRI) and Metacognition Index (BRIEF MI). Performance based measures included T-scores for Omission and Commission errors on the Conner's Continuous Performance Test, Second Edition (CPT-2) and Standard Scores on the WISC-IV; Working Memory Index (WMI).
We used longitudinal growth curve models of early childhood sleep patterns to predict attention and executive functioning at age 8. Predictive analyses were run with and without key covariates: annual household income, child sex and race. To account for general intellectual functioning, we also included covariates children's WISC-IV Verbal Comprehension and Perceptual Reasoning Indexes.
Results: Children in our sample were evenly divided by sex; 60% were White. Sleep problems did not show linear or quadratic change over time, so an intercept-only model was used. Sleep problems did not predict any of our outcome measures at age 8 in unadjusted or covariate-adjusted models. As expected, sleep duration was shorter as children matured, so predictive models examined both intercept and slope. Slope was negatively associated with CPT-2 Commissions (unadjusted p=.047; adjusted p=.013); children who showed the least decline in sleep over time had fewer impulsive errors at age 8. The sleep duration intercept was negatively associated with BRIEF BRI (unadjusted p=.002; adjusted p=.043); children who slept less across early childhood had worse parent-reported behavioral regulation at age 8. Neither sleep duration slope nor intercept significantly predicted any other outcomes at age 8 in unadjusted or covariate-adjusted analyses.
Conclusions: Total sleep time across early childhood predicts behavior regulation difficulties in later childhood. Inadequate sleep during early childhood may be a marker for or contribute to poor development of a child's self-regulatory skills.

Categories: Sleep and Sleep Disorders
Keyword 1: sleep
Keyword 2: attention
Keyword 3: executive functions
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76 Investigating the Severity of Insomnia Comorbidities Between the Sexes

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Objective: Previous research indicates that women tend to struggle with insomnia at higher rates both prior to and during the global COVID-19 pandemic; however, not much research has investigated the extent to which insomnia correlates with comorbid problems, including aggression, depression, anxiety, PTSD severity, and alcohol use between the sexes. On a neurobiological level, insomnia could be associated with those mood disorders due to the effects of sleep disturbance on serotonergic and GABA neurotransmission, and males might experience such associations at a lower

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frequency due to their increased rates of serotonin synthesis. Consequently, we hypothesized that women would demonstrate higher prevalence of the aforementioned comorbidities during COVID than males due to higher rates of insomnia reported in women during COVID.
Participants and Methods: We surveyed a total of 13,313 adults, with 5,598 females (Mage=36.4, SD=11.9) and 7,654 males (Mage=37.81, SD=12.7) using Amazon Mechanical Turk between April 2020 and April 2021. Insomnia was measured using the Insomnia Severity Index (ISI), while levels of depression, anxiety, PTSD severity, and alcohol use, and aggression were assessed through Patient Stress Questionnaires (PSQs) and the Buss Perry Aggression Questionnaire (BPAQ).
Results: As expected, there were significant positive correlations between ISI and BPAQ ($r(13306)=0.364$, $p<0.0001$), PSQ Depression ($r(13300)=0.694$, $p<0.0001$), PSQ Anxiety ($r(13211)=0.627$, $p<0.0001$), PSQ PTSD ($r(13305)=0.444$, $p<0.0001$), and PSQ Alcohol ($r(12915)=0.218$, $p<0.001$). The strength of these associations was significantly higher in males than females in almost all categories: aggression ($z=4.27$, $p<0.0001$), depression ($z=2.41$, $p=0.016$), anxiety ($z=3.16$, $p=0.0016$), and alcohol use ($z=5.89$, $p<0.0001$) - not significant for PTSD severity ($z=1.48$, $p=0.14$).
Conclusions: We found that insomnia was more strongly correlated with comorbid emotional and behavioral problems among males than females. This stands in contrast to our initial hypothesis, as the findings suggest that men who suffer from greater insomnia are more likely to experience those four comorbidities than females. This suggests that sex may play a role in the association between sleep disturbances and other clinical presentations relevant to neuropsychology. Further work will be necessary to identify the neurobiological mechanisms that drive the sex differences in these associations. While the present findings cannot determine the causal direction of the association, it will be crucial to determine the directionality of these associations and the mechanisms that lead to differences in expression between the sexes.

Categories: Sleep and Sleep Disorders
Keyword 1: sleep disorders
Keyword 2: depression
Keyword 3: anxiety
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77 Symptoms of RBD and Cognitive Performance in Healthy Young Adults

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Objective: REM sleep behavior disorder (RBD) is a parasomnia characterized by vivid dreams and motor behavior such that people appear to “act out their dreams.” These are sudden and often violent bodily movements such as punching or kicking, or vocalizations such as laughing or shouting. RBD is mostly associated with the older adult male population. However, recent studies show that RBD and REM sleep without atonia (RSWA) also occur in other populations, including women, children, and adolescents. Given the prodromal period before an individual can develop the classic symptoms of RBD and that RBD is not just limited to older adult males, it is important to study subclinical features of RBD. RBD is a parasomnia and poor sleep is well known to affect cognitive domains. Additionally, RBD is separately shown to negatively affect cognition in older adults. Given these connections, the association between RBD symptoms and cognition among young adults warrants further study. The purpose of this study was to evaluate the association between RBD symptoms and cognitive domains, specifically attention, processing speed, executive function, and working memory.
Participants and Methods: University students from the Bronx, NY (N=50, mean age = 19.8, female = 78.4%) completed the REM Sleep Behavior Disorder Screening Questionnaire (RBDSQ). Estimated intellectual ability was assessed using the Wechsler Test of Adult Reading (WTAR). Cognitive assessment included the Delis-Kaplan Executive Function System (D-KEFS) Color-Word Interference Test (attention and executive function) and the Cogstate battery (Groton Maze Learning Test (executive function), Chase Test (processing speed), Identification Test (attention), One Back Test (attention), and Two Back Test (working memory)). Psychosocial assessment included

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