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EFFECTS OF SCHOOL NIGHT SLEEP DURATION AND CIRCADIAN PREFERENCE ON STUDENT TARDINESS: AN INVESTIGATION IN A MIDDLE-SCHOOL AGED SAMPLE

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Introduction: Sleep and circadian factors play an important role in school attendance, academic performance, and daytime behaviors among adolescents. This investigation assessed school night sleep duration (SNSD) and circadian preference (CP) association with first period tardiness (FPT) using a middle-aged sample from the Madison (Wisconsin) Metropolitan School District (MMSD), prior to implementation of a planned district-wide delay in middle school start times.

Methods: 4,775 middle-school aged students from 12 MMSD schools completed a sleep survey, which included SNSD and validated 4-level measure of CP. Self-reported SNSD between 5-14.2 hours served as an inclusion criterion. Mixed-effects modeling was employed with students nested within schools. Linear regression determined SNSD and CP effect on student tardiness. Individual, year-long FPT served as outcome variable. Inclusion of SNSD quadratic term was not statistically indicated. Full model covariates included age, sex, race, parent educational level, homelessness, free and reduced lunch, and special education status.

Results: Final sample included 3,300 students. Univariate regression determined a significant CP association with FPT ([β]=1.8, 95% CI 0.84, 1.80), [β]=1.37, p<0.001), but not SNSD ([β]=0.05, 95% CI 0.08, 0.08), or [β]=0.18, p<0.001). SNSD and CP interaction was not significant. CP association was maintained in the full model [β]=1.24, 95% CI 0.87, 0.89, [β]=1.37, p<0.001). Morning preference association with 3.72 more FPT relative to morning preference.

Conclusion: Results suggest evening preference is associated with increased risk of tardiness among middle school students. Future research that examines the relationships between delayed school start times, circadian preference, and impact on school attendance is indicated.

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SCHOOL NIGHT SLEEP DURATION EFFECT ON RISK FOR IN-AND-OUT OF SCHOOL SUSPENSIONS: AN INVESTIGATION IN A MIDDLE-SCHOOL AGED SAMPLE

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Introduction: Sleep plays an important role in adolescent education and development. Sleep impacts student school attendance, academic performance, and daytime behaviors. There has been limited investigation into the impact of sleep duration (SD) on school suspension risk. Given the growing public health and policy focus on altering school start times to increase SD, this study assessed SD association with school suspension risk using a middle-school aged sample from the Madison (Wisconsin) Metropolitan School District (MMSD), prior to implementation of a planned district-wide delay in middle school start times.

Methods: 4,775 middle-school aged students from 12 MMSD schools completed a sleep survey, which included school-night SD (SNSD). Self-reported SD between 5-14.2 hours served as criterion for inclusion in final sample. Mixed-effects modeling was employed with students nested within schools. Logistic regression determined SD association with in-school (ISS) and out-of-school (OSS) suspensions. ISS and OSS were dichotomized (No ISS/OSS = 0, nonzero ISS/OSS = 1) to serve as outcome variables. Full model covariates included age, sex, race, parent educational level, homelessness, free and reduced lunch, and special education status.

Results: Final sample included 3,300 students. Shorter SNSD associated with greater likelihood of OSS (OR = 0.83, 95% CI 0.70, 0.98), X² = 16.1, p < 0.001), but not ISS (OR = 0.98, 95% CI 0.91, 0.95, X² = 0.46, p = 0.51). Significance between SNSD and ISS was maintained in the full model (OR = 0.84, 95% CI 0.42, 0.99, X² = 17.3, p = 0.001). Each additional hour of sleep associated with 10% lower risk of OSS.

Conclusion: These results suggest that students with shorter SD are at increased risk for OSS, which further highlights the potential deleterious impact of short SD on adolescent educational experience.

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