

Association of Stress and Neighborhood Social Context With Actigraphy-Measured and Self-Reported Adolescent Sleep Outcomes

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Purpose: Chronic stress and unfavorable neighborhood environments may increase adolescents' risk for poor sleep. Few studies have examined whether neighborhood social environments moderate associations of adolescents' perceptions of stress with actigraphy-measured and self-reported sleep outcomes.

Methods: In a cross-sectional study of adolescents aged 15-18 (n = 163) years, perceived stress (10-item Perceived Stress Scale) and perceived neighborhood collective efficacy and safety were assessed via survey. Over 14 days, actigraphy measured nightly sleep duration and timing, while ecological momentary assessment (EMA) measured daily stress, self-reported sleep problems, and sleep environment disruptions. Multivariable mixed effects regression estimated associations of stress and neighborhood social factors with nightly sleep patterns and self-reported sleep outcomes, while multivariable linear regression estimated associations with sleep variability (intraindividual standard deviation of each sleep measure).

Results: Higher 10-item Perceived Stress Scale scores and daily EMA-reported stress were associated with more variable sleep duration, onset, and offset timing, and higher and more variable sleep problem scores. Daily EMA-reported stress was also associated with earlier sleep timing. Higher neighborhood collective efficacy was associated with less variable sleep duration and timing, and lower and less variable sleep problem scores. Neighborhood collective efficacy and safety moderated associations between stress and several sleep outcomes (e.g., stronger associations between stress and sleep variability were present among adolescents with low neighborhood safety or collective efficacy).

Discussion: Lower perceived stress and higher neighborhood collective efficacy were associated with less variable sleep patterns and lower sleep problem scores. Results suggest positive neighborhood social environments may moderate the relationship of stress with adolescent sleep variability.

Journal:

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