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Tired Teens: Sleep Disturbances and Heightened Vulnerability for Mental Health Difficulties
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Tired Teens: Sleep Disturbances and Heightened Vulnerability for Mental Health Difficulties

Cara A. Palmer
Inadequate sleep is one of the most common yet modifiable public health problems facing youth today, and accumulating evidence suggests that sleep problems are associated with increased risk for mental health difficulties\(^1\)\(^2\). Nonetheless, comprehensive longitudinal data in early adolescence is lacking, despite the numerous biological, cognitive, and socioemotional changes that occur during this period that increase risk for both poor sleep and mental health. In this issue of Journal of Adolescent Health, Goldstone and colleagues examined associations between sleep and concurrent and later mental health symptoms using data from a national United States sample of 11,670 early adolescents aged 9-10 years who were enrolled in the ongoing Adolescent Brain Cognitive Development (ABCD) study. Results suggest that parent-reported sleep disturbances, including excessive somnolence (e.g., difficulty waking in the morning, feeling tired throughout the day), difficulties initiating and maintaining sleep, symptoms of sleep-wake transition disorders, and shorter total sleep duration are associated with internalizing, externalizing, and depressive symptoms, with the strongest effects for excessive somnolence and difficulties initiating and maintaining sleep. Follow-up analyses with an available subsample of youth found that these sleep disturbances also predicted increases in mental health symptoms one year later. In contrast, screen time only explained a small amount of variance in mental health (<1%), which is in line with other large-scale analyses that have found small effects of media use on adolescent psychological functioning\(^3\). The comparatively large effects of sleep disturbances in the present study lend support to the notion that sleep is a more proximal risk factor for mental health in teens, presenting a viable target for intervention and prevention efforts.

Goldstone and colleagues are not the first to link sleep disturbances in adolescence to increased risk for mental health disorders. However, these particular findings build on some major limitations in the current literature, which have often incorporated small, non-representative samples and participants across a wide spectrum of ages or developmental periods. The narrow, early adolescent age range for inclusion in the ABCD study provides greater precision and captured youth prior to the onset of mental illness, just as risk for many affective disorders such as depression begin to increase dramatically\(^4\). Longitudinal investigations during this vulnerable period on how specific sleep disturbances relate to
mental health symptoms are also remarkably rare. Studies have often been limited in their use of broadly
defined assessments of “sleep problems” which has resulted in incomplete knowledge on the specific
types of sleep disturbances that might be of most concern. The current findings suggest that sleep
disturbances more specific to excessive somnolence and difficulties initiating and maintaining sleep may
be especially problematic, both of which may be modifiable through intervention and prevention efforts at
both the individual (e.g., Cognitive Behavioral Therapy for Insomnia) and broader, structural levels (e.g.,
delaying high school start times). These findings add much needed precision to theoretical models of
sleep and mental health in teens.

Prioritizing sleep health may be of utmost importance for adolescents, as this developmental
period is often met with insufficient sleep. Over 50% of the ABCD sample had a parent-reported sleep
duration less than the recommended 9-11 hours. Of note, only 25% of black and 35% of Hispanic
participants fell into this 9-11 hour category. Other studies suggest that rates of sleep problems increase in
older adolescents, with many as 80-90% obtaining inadequate sleep, likely due to reduced homeostatic
sleep pressure and delayed circadian rhythms in conjunction with increased social demands such as early
high school start times. While sleep duration had smaller effects on mental health in this study compared
to other sleep disturbances, these high rates of inadequate sleep, particularly among black and Hispanic
youth, are worthy of consideration given established associations between short sleep duration and a
number of adverse physical health outcomes and increased risky health behaviors. While research on
sleep and broader health disparities during adolescence is still nascent, this is an important pursuit for
future studies.

Findings from Goldstone and colleagues also suggested that associations between excessive
somnolence and later depression were moderated by gender, such that girls with excessive somnolence
experienced greater increases in depression at the one-year follow-up compared to boys. These findings
are in line with other data suggesting stronger associations between nighttime sleep and daytime
symptoms for adolescent girls compared to boys, and builds on emerging evidence of inter-individual
variability in response to sleep loss across the life-span. While specific mechanisms for these gender
differences in vulnerability to sleep disturbances are currently unknown, evidence suggests that girls in particular are at heightened risk for maladaptive cognitive response styles such as rumination, which have been linked to both gender differences in depression and with sleep disturbances in adolescents²,¹³. Further research on associations between sleep and transdiagnostic factors that may underlie a range of mental health symptoms along with a greater understanding of person-level moderators between sleep disturbances and psychosocial outcomes is a critical next step in this area of research, and will allow for better identification of at-risk adolescents.

Evidence continues to show that youth sleep problems heighten vulnerability to mental health difficulties at both clinical and subclinical levels. Moving forward, there is a need for more focused, developmentally-informed research that includes greater attention to specific sleep disturbances and inter-individual differences like the present work by Goldstone and colleagues. Future studies would also benefit from the inclusion of objective methodology such as actigraphy or polysomnography, as the majority of longitudinal research on sleep and mental health in this age period relies on parent-report to assess sleep problems and/or mental health symptoms. Multi-method, longitudinal research is an imperative next step to further clarify the precise role of sleep in the development of psychiatric risk and how it shapes these trajectories. Given the ubiquitous nature of sleep disturbances among adolescents, and reports that indicate that both sleep problems and rates of psychopathology appear to be increasing in recent decades among adolescents¹⁴,¹⁵, a need for attention to this topic has never been greater.
References


