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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

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4 Inadequate sleep is one of the most common yet modifiable public health problems facing youth
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6 today, and accumulating evidence suggests that sleep problems are associated with increased risk for
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8 mental health difficulties^{1,2}. Nonetheless, comprehensive longitudinal data in early adolescence is lacking,
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10 despite the numerous biological, cognitive, and socioemotional changes that occur during this period that
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12 increase risk for both poor sleep and mental health. In this issue of Journal of Adolescent Health,
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14 Goldstone and colleagues examined associations between sleep and concurrent and later mental health
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16 symptoms using data from a national United States sample of 11,670 early adolescents aged 9-10 years
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18 who were enrolled in the ongoing Adolescent Brain Cognitive Development (ABCD) study. Results
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20 suggest that parent-reported sleep disturbances, including excessive somnolence (e.g., difficulty waking
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22 in the morning, feeling tired throughout the day), difficulties initiating and maintaining sleep, symptoms
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24 of sleep-wake transition disorders, and shorter total sleep duration are associated with internalizing,
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26 externalizing, and depressive symptoms, with the strongest effects for excessive somnolence and
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28 difficulties initiating and maintaining sleep. Follow-up analyses with an available subsample of youth
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30 found that these sleep disturbances also predicted increases in mental health symptoms one year later. In
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32 contrast, screen time only explained a small amount of variance in mental health (<1%), which is in line
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34 with other large-scale analyses that have found small effects of media use on adolescent psychological
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36 functioning³. The comparatively large effects of sleep disturbances in the present study lend support to the
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38 notion that sleep is a more proximal risk factor for mental health in teens, presenting a viable target for
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40 intervention and prevention efforts.
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47 Goldstone and colleagues are not the first to link sleep disturbances in adolescence to increased
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49 risk for mental health disorders. However, these particular findings build on some major limitations in the
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51 current literature, which have often incorporated small, non-representative samples and participants
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53 across a wide spectrum of ages or developmental periods. The narrow, early adolescent age range for
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55 inclusion in the ABCD study provides greater precision and captured youth prior to the onset of mental
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57 illness, just as risk for many affective disorders such as depression begin to increase dramatically⁴.
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59 Longitudinal investigations during this vulnerable period on how specific sleep disturbances relate to
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4 mental health symptoms are also remarkably rare. Studies have often been limited in their use of broadly
5 defined assessments of “sleep problems” which has resulted in incomplete knowledge on the specific
6 types of sleep disturbances that might be of most concern. The current findings suggest that sleep
7 disturbances more specific to excessive somnolence and difficulties initiating and maintaining sleep may
8 be especially problematic, both of which may be modifiable through intervention and prevention efforts at
9 both the individual (e.g., Cognitive Behavioral Therapy for Insomnia) and broader, structural levels (e.g.,
10 delaying high school start times). These findings add much needed precision to theoretical models of
11 sleep and mental health in teens.
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22 Prioritizing sleep health may be of utmost importance for adolescents, as this developmental
23 period is often met with insufficient sleep. Over 50% of the ABCD sample had a parent-reported sleep
24 duration less than the recommended 9-11 hours⁵. Of note, only 25% of black and 35% of Hispanic
25 participants fell into this 9-11 hour category. Other studies suggest that rates of sleep problems increase in
26 older adolescents, with many as 80-90% obtaining inadequate sleep^{6,7}, likely due to reduced homeostatic
27 sleep pressure and delayed circadian rhythms in conjunction with increased social demands such as early
28 high school start times⁸. While sleep duration had smaller effects on mental health in this study compared
29 to other sleep disturbances, these high rates of inadequate sleep, particularly among black and Hispanic
30 youth, are worthy of consideration given established associations between short sleep duration and a
31 number of adverse physical health outcomes and increased risky health behaviors⁹. While research on
32 sleep and broader health disparities during adolescence is still nascent, this is an important pursuit for
33 future studies.
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48 Findings from Goldstone and colleagues also suggested that associations between excessive
49 somnolence and later depression were moderated by gender, such that girls with excessive somnolence
50 experienced greater increases in depression at the one-year follow-up compared to boys. These findings
51 are in line with other data suggesting stronger associations between nighttime sleep and daytime
52 symptoms for adolescent girls compared to boys¹⁰, and builds on emerging evidence of inter-individual
53 variability in response to sleep loss across the life-span^{11,12}. While specific mechanisms for these gender
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4 differences in vulnerability to sleep disturbances are currently unknown, evidence suggests that girls in
5 particular are at heightened risk for maladaptive cognitive response styles such as rumination, which have
6 been linked to both gender differences in depression and with sleep disturbances in adolescents^{2,13}.
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10 Further research on associations between sleep and transdiagnostic factors that may underlie a range of
11 mental health symptoms along with a greater understanding of person-level moderators between sleep
12 disturbances and psychosocial outcomes is a critical next step in this area of research, and will allow for
13 better identification of at-risk adolescents.
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20 Evidence continues to show that youth sleep problems heighten vulnerability to mental health
21 difficulties at both clinical and subclinical levels. Moving forward, there is a need for more focused,
22 developmentally-informed research that includes greater attention to specific sleep disturbances and inter-
23 individual differences like the present work by Goldstone and colleagues. Future studies would also
24 benefit from the inclusion of objective methodology such as actigraphy or polysomnography, as the
25 majority of longitudinal research on sleep and mental health in this age period relies on parent-report to
26 assess sleep problems and/or mental health symptoms. Multi-method, longitudinal research is an
27 imperative next step to further clarify the precise role of sleep in the development of psychiatric risk and
28 how it shapes these trajectories. Given the ubiquitous nature of sleep disturbances among adolescents, and
29 reports that indicate that both sleep problems and rates of psychopathology appear to be increasing in
30 recent decades among adolescents^{14,15}, a need for attention to this topic has never been greater.
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