ACUTE CARE COLUMN

One Sheep, Two Sheep, When Teens Get No Sleep: Strategies for the Inpatient Adolescent Unit

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Case

Sarah is a 17-year-old female who is hospitalized with passive suicidal ideation in the context of anxiety about finals. She endorsed poor concentration, constant worries about her grades, feeling tense, irritable, and worsening sleep. Sleep initiation has been particularly troublesome with "racing thoughts" about her academic progress and then being "exhausted and irritable" in the morning since she has to get up early for school after only five to six hours of sleep. She is on Lexapro for generalized anxiety and has tried trazodone, Benadryl, and melatonin in the past, but she reports these trials have either been ineffective, without lasting results, or made her feel groggy. She asks for non-pharmacologic treatment options and hopes there is something that "I can do on my own without meds."

Sleep is an essential part of physical and emotional health and balance, and sleep issues are significantly associated with psychiatric disorders and emotional and behavior problems. Children and adolescents need at least nine hours of sleep per night. Yet the majority of teens, 53-70%, are getting less than eight hours on school nights, and approximately 30-36% endorse insomnia symptoms.[1-3] The issues of sleep during adolescence are unique and Crowley et. al. describes this period as a "Perfect Storm" – a time where both intrinsic (sleep homeostasis and circadian physiology) and extrinsic factors (societal and cultural pressures) collide leaving youth sleep deprived.[4]

Insufficient sleep has implications for academic performance, interpersonal relationships, emotional and behavioral regulation, and cognitive adverse outcomes. Further, some studies suggest that sleep problems are associated with suicidal ideation and attempts, and precede the development of anxiety and depression in adolescents.[5-7]

It is well established that cognitive behavioral therapies for insomnia (CBT-I) and mindfulness based sleep interventions, light therapy, and chronotherapy are effective treatments for adult sleep disorders.[8,9] Several meta-analyses of CBT-I for chronic insomnia have demonstrated medium-to-large effect sizes for sustainably improving various sleep parameters (sleep efficiency, sleep onset latency, wake after sleep onset, and sleep quality) in adults. This improvement has been demonstrated for primary insomnia as well as for insomnia that exists alongside comorbid medical and psychiatric disorders.[10,11] The American College of Physicians (ACP), in a 2016 practice guideline, recommended that all adults with chronic insomnia receive CBT-I as first line treatment.[12] Conversely, the adolescent literature remains limited, and general psychoeducational sleep hygiene programs geared toward the general student population have not improved sleep behaviors or mental health outcomes.[2,8] However, Blake et. al. found that a CBT-I and mindfulness based sleep intervention was effective in at-risk adolescents, those already experiencing subclinical and clinical symptoms of anxiety and depression.[2] Additionally, there is a randomized controlled trial (RCT) that found CBT-I effective and another RCT that found CBT-I plus bright light therapy improved self-reported and objective sleep as well as functional (anxiety and depression) outcomes in adolescents with a primary sleep disorder.[9,13]

Beyond the general adolescent population, the youth admitted to an inpatient psychiatric unit overwhelmingly report symptoms of sleep disorders. While there are limited studies and protocols to systematically target sleep complaints within an acute care context, the structured hospital setting offers a rich forum to both collect objective sleep data and begin treatment and psychoeducation to address sleep related issues. The inpatient milieu is organized with consistent rules and routines which schedule wake/bedtime and meals, control light variables, permit/prohibit screen time, objectively record amount/time of sleep (15 minute checks), and facilitate a variety of therapeutic groups and activities which can be targeted toward sleep related issues. The five core CBT-I components consist of sleep hygiene education and instruction, stimulus control, sleep restriction, relaxation training, and cognitive therapy.[8] While not all core concepts may be addressed, many of these CBI-I techniques can be incorporated within the frame of an inpatient hospitalization.

Sleep diaries can be important tools in sleep interventions. Sleep logs offer valuable information about an individual's timing, quality, and patterns of sleep. In a hospital setting, the data from a patient's sleep diar can be compared to the objective information documented by staff who log sleep/awake activity every 15 minutes throughout the night. Accurate patterns of sleep can be identified and discrepancies explored to help inform treatment goals.

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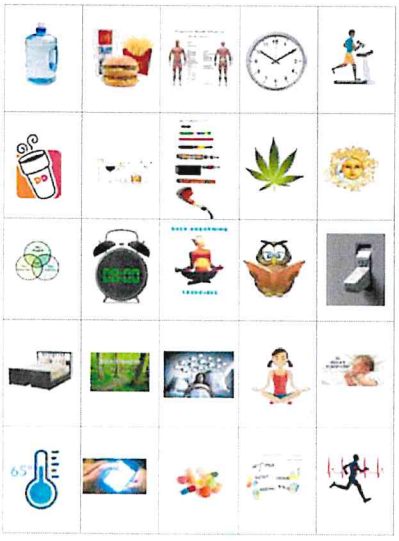
Sleep Hygiene

Specific routines and instructions are provided to patients on an inpatient unit, including consistent wake/bed times and predictable pre-sleep as well as wake-up routines. Promoting evening "wind down" activities with low light levels and soothing music encourages sleep readiness. While mornings are structured to maximize light from windows, scheduled coffee and breakfast times as well as staff offerings of additional hygiene products aim to stimulate wakefulness. Psychoeducation is provided in multiple ways, ranging from direct individual instruction to written literature and group/activity modalities. Given that adolescents often benefit from more active engagement and participation, groups can be created to incorporate discussion with worksheets, videos, and games. For example, Sleep Hygiene Bingo Group incorporates a Bingo board (picture 1) which covers broad sleep hygiene topics (e.g. chocolate, exercise, temperature, etc.), and as the game progresses each topic is processed within the group and typically spurs a lively discussion.

Stimulus Control

Picture 1: Sleep Hygiene Bingo



Instructions are provided to patients about only using the bed for sleep and not napping; these behavioral recommendations aim to improve a conditioned association with the bed to promote sleep. When there is an *in vivo* opportunity, the staff provide in-the-moment direct feedback to patients to avoid naps or do non-sleep activities out of bed. Thus, all rooms are furnished with a window and dimmers to regulate light, and a desk and chair to offer an alternative space for non-sleep activities.

Sleep Restriction

On the inpatient unit, it may be difficult to incorporate sleep restriction within a hospital milieu schedule. The goal of sleep restriction technique is to promote homeostatic drive to achieve 85% or greater sleep efficiency (defined as the ratio of the total time spent asleep at night compared to the total time spent in bed).[8] It is plausible to incorporate this technique if patients have a single room or otherwise do not disrupt the therapeutic milieu; however, thoughtful and cautious consideration of comorbidities and adverse outcomes of restricting sleep is vital.

Relaxation

A variety of relaxation techniques can be taught, practiced, and utilized to reduce cognitive and physiologic arousal and promote sleep. Many inpatient units already have relaxation groups. Our unit offers a daily afternoon group called "Sensory Modulation and Relaxation Group" which encompasses a variety of activities including yoga, meditation, seven senses, progressive muscle relaxation, guided imagery, and deep breathing skills.

Cognitive Therapy

Within CBT-I, cognitive therapy aims to explore negative thought processes and negative beliefs about sleep by focusing on ruminations and worries that occur at bedtime. It assists in identifying and then challenging negative thoughts about sleep, unrealistic expectations of sleep, and catastrophic thinking and fears about missing out on sleep.[8] The skills learned from inpatient CBT groups can be generalized and practiced to target specific issues with sleep.

Conclusion

As in any intervention, the firm foundation of psychoeducation is a beginning point. In an acute care setting, psychoeducation can be provided in a group or individual format and should not be limited to sleep hygiene; adolescents are curious about their development, biology, and physiology. Motivational interviewing can be incorporated to improve engagement. Identifying areas of investment such as improving academic performance, interpersonal relationships (via better emotion and behavioral regulation), improving stress management, and physical/health benefits (e.g. acne, obesity) may be areas to promote greater treatment investment. The inpatient setting offers a captive audience of both patients and families, who serve as a powerful ally in helping adolescents.

Sleep is a common and important adolescent problem associated with many mental illnesses, an issue further exacerbated by normal adolescent physiologic changes, emotional development, technological pressures, and societal changes (e.g. early school times).[4] At the acute level of inpatient care, sleep difficulty is one of the most common symptoms and complaints. The structured hospital setting offers an ideal environment to collect accurate sleep data as well as engage patients to actively take part in their treatment. While a hospital admission is brief, it offers a powerful opportunity to reset internal circadian rhythm, provide valuable education, and teach and practice skills to promote balanced and healthy sleep habits. It is important to note that while an inpatient hospitalization is a unique and potentially valuable starting point to begin psychoeducation and intervention for insomnia, it is in no way comprehensive, and coordination of care with outpatient providers is imperative to ongoing treatment. ■

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