Parasomnias: Fast Facts

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Parasomnias are undesirable physical, experiential, or behavioral phenomena that occur exclusively during sleep onset, sleep, or arousals from sleep. Their manifestations may be easily confused with psychiatric disorders, when bizarre motor and/or emotional behavior is mistakenly interpreted as symptomatic of waking aberrance. For some, there may be associations with psychiatric disorders, their treatments, and/or their contribution to predisposition. Underlying the various parasomnias is the actuality that they are not mutually exclusive. Below are fast facts to better recognize and treat them (an in-depth look at the topic can be found online).

**Non–rapid eye movement (NREM) sleep arousal disorders.** Although not specified in DSM-5, the simplest of the disorders of arousal is confusional—hence disordered—arousal, which is partial awakening with periods of apparent confusion and inappropriate or absent responsiveness to others while in bed. There is typically amnesia for the event and minimal or no recall of dream mentation. This can evolve into spells that include intense autonomic activation with vocalization, tachycardia, tachypnea, mydriasis, diaphoresis, and sleep terrors or sleepwalking. Confusional arousals occurred in 15.2% of a large community sample, and more than half reported at least 1 episode every week.

**Substance- or medication-induced sleep disorder.** Parasomnias resembling disorders of arousal can be related to the use of many psychotropic drugs, in particular sedative-hypnotics. Sleepwalking and other amnestic complex sleep-related behaviors have been reported among psychiatric patients taking benzodiazepines. Behaviors can be prolonged and include amnestic nocturnal eating, sexual activity, and even sleep driving. The first step in treatment is to identify and treat comorbid sleep disorders—in particular, restless legs syndrome and obstructive sleep apnea.

**Nightmare disorder.** Formerly termed dream anxiety attacks, nightmare disorder is now recognized as a REM sleep phenomenon, distinct from NREM sleep terrors. As defined in DSM-5, this includes repetitive, extended, extremely dysphoric, and well-recalled dreams that involve threats to survival, security, or physical integrity; episodes usually occur during the second half of the sleep period. Typically, the individual becomes rapidly alert and oriented. Emotional manifestations of fear, anger, and sadness may predominate. Nightmares occur in 5% to 8% of adults, more commonly women and individuals with type A personality characteristics.

**REM sleep behavior disorder (RBD).** Patients with RBD are most frequently older men who experience a prolonged, chronic course. They typically dream of themselves as defenders, rarely as aggressors. Violent dream enactment can result in injury to the patient and/or bed partner, whose presence is often incorporated into the dream content. RBD spells are likely to occur during the latter part of the night, when REM sleep tends to be more prolonged and intense. For about 25% of patients, there is a prodromal period with increased action-packed dream content along with vocalization and limb jerking that can progress over several years. As RBD becomes established, there is a tendency for abrupt, often violent movement concordant with recalled dream content.

**Recurrent isolated sleep paralysis.** Sleep paralysis is essentially the atonia of REM sleep that has become dissociated and occurs at times other than the typical periods of REM sleep during the night. It can either intrude at sleep onset or persist into awakening at sleep offset, and it is often experienced as discomforting or frightening. It is classically found in association with narcolepsy, but not exclusively. Lifetime prevalence of isolated sleep paralysis appears to be 2.3% to 4.6%, depending on the population under study. Unless the history includes hypersomnia or cataplexy, there is no need for polysomnography.

**Sleep-related events not specified in DSM-5.** Clinical features of nocturnal spells can resemble panic disorder, but diagnostic caution must be emphasized. It is important to look at other disorders that can
masquerade as nocturnal panic, such as sleepwalking/sleep terrors, RBD, seizures, gastroesophageal reflux, obstructive sleep apnea, bruxism, nocturnal asthma, and nocturnal cardiac arrhythmias. Sleep disturbances have figured prominently in descriptions of dissociative identity disorder, dissociative amnesia, and other disorders. Specifically, sleep disturbances have figured prominently in descriptions of posttraumatic stress disorder; they include initial insomnia, sleep discontinuity with increased arousal, limb movements, night terrors, nightmares, and even purposeful behavior, which can result in injury to a bed partner when a threat is perceived. Other rare but relevant disorders with sleep-related manifestations that can confound psychiatrists include sleep-related epilepsy, exploding head syndrome, dementia with Lewy bodies, and other brain pathology (peduncular hallucinosis).

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References

Wu, about 5% to 15% of adults meet the diagnostic criteria for insomnia, but between 35% and 50% of adults have significant insomnia symptoms. In addition, individuals with insomnia are at increased risk of suicide, drug use, posttraumatic stress disorder, depression, anxiety, and other psychiatric disorders, and physical symptoms like pain may also be exacerbated in individuals with insomnia.1

“When we improve insomnia symptoms, we’re also improving depression and anxiety,” Wu said during her presentation. “We’re reducing inflammation, and just across the board, we’re improving a lot of other psychiatric medical and quality-of-life outcomes like chronic pain, functioning, quality of life—you name it. So, in a way, treating insomnia is like raising the water for all boats.”

A board-certified behavioral sleep medication specialist and researcher at Duke University School of Medicine, Wu’s current research focus is the treatment of sleep disorders in individuals with chronic illness.

Reference
With the demands of the COVID-19 pandemic, sleep deprivation among health care professionals (HCPs) has become a major concern. Are they functioning well enough at work? Do they show signs of stress? Several reviews and surveys have attempted to evaluate and quantify the effects of these unrelenting stressors on the mental and physical health of HCPs treating patients with COVID-19.1,2

An Unprecedented Problem

The impact of the pandemic and subsequent lockdowns on sleep has been universal, according to Michael Grandner, PhD, MTR, CBSM, FAASM, director of the Sleep and Health Research Program and the Behavioral Sleep Medicine Clinic at the University of Arizona College of Medicine in Tucson. “There is not one person anywhere whose sleep has not been affected at all by the pandemic. It’s a foundation of our biology. Paradoxically, everyone’s sleep is affected differently,” he said in an interview.

Lack of sleep among HCPs became a critical problem as frontline clinicians struggled to cope with the personal aspects of COVID-19 while treating those who were sick. A meta-analysis of 53 studies reported a pooled prevalence of poor sleep quality in up to 61% of nurses in general,1 whereas a 2020 survey in China showed that more than one-third of all medical staff experienced symptoms of insomnia associated with the COVID-19 pandemic.2

Many Sleep Domains Affected

Sleep parameters affected include sleep latency, duration, and efficiency.3 Some study results suggested that insomnia, or difficulty falling asleep or remaining asleep, is reported by more than half of health care workers who worked with patients with COVID-19, Killgore said. “Many health care workers are showing signs of posttraumatic stress, which is often associated with nightmares and disturbed sleep. Unfortunately, sleep is important for the ability to process through emotional experiences, so sleep disruption due to anxiety, long hours, and stress can lead to a vicious circle that maintains sleep problems and the emotional effects of traumatic experiences.”

Issues in Sleep Loss and Insomnia

Clinicians on the front lines experienced greater sleep deprivation as a result of increased sleep restriction from extended work schedules, coupled with various insomnias once they returned home. Jessica Dietch, PhD, of the Department of Psychiatry and Behavioral Sciences at Stanford University School of Medicine in California, explained that prior to the pandemic, shift work, particularly involving rotating shifts, was associated with worse sleep across the domains (latency, duration, and efficiency), which were exacerbated with the changing shift demands. Additional stressors included extreme variability in sleep duration along with increased work and family demands, each of which may limit clinician’s sleep opportunities by restricting the amount of sleep to less than needed. “Decreased sleep duration, particularly that occurring over multiple days or weeks in a row, can lead to the accumulation of sleep debt,” Dietch explained in an interview. “We know that increases in stressors, which abound for HCPs during the COVID-19 pandemic, can precipitate new insomnia, such as difficulty falling or staying asleep, or exacerbate existing insomnia.”

“Insomnia occurs when there is a decreased ability to detach at night,” Grandner added. This causes sleep to become more fragmented and more shallow, although he noted that in laboratory studies, impairments after a night or 2 of sleep deprivation tend to be less than expected. “Impairments accumulate after a few days or nights of sleep deprivation,” he explained. “Your body will entrain arousal when you’re up night after night, leading to a pattern of chronic insomnia.”

“Physician, Heal Thyself With Sleep”

Linda Peckel

“Health care workers, in particular, have had to work long hours with limited resources and in close proximity to COVID-19 patients during the pandemic,” William D. Killgore, PhD, director of the Social, Cognitive, and Affective Neuroscience (SCAN) Lab in the Department of Psychiatry at the University of Arizona, said in an interview. The SCAN Lab uses advanced technologies to map neurological processes and responses. “As the hospitalization rates continue to surge again, many health care workers are experiencing high levels of stress, anxiety, depression, burnout, and insomnia,” he added.
emotional regions of the brain and the regions that normally regulate those areas, potentially leading to an increased tendency to view experiences from an emotionally skewed—usually negative—perspective.”

Impact on Cognition
Sleep deficits begin to lead to pronounced alterations of cognition, Killgore added, with potentially serious consequences. “When a person is lacking restorative sleep, they build up a biological ‘pressure’ to fall asleep, which eventually starts to intrude upon their waking performance in the form of brief attentional lapses,” he said. “These are momentary glitches, often less than a second in duration, in ongoing cognitive processing where mental activity just seems to stop for a moment. The problem is that these lapses are uncontrollable and occur without warning.” He added lapses can be life-threatening, happening while driving or working.

The most significant impacts on job performance show up not as much in routine, repetitive tasks, according to Grandner, but “when someone has to make a novel judgment call, like when driving home and the light changes or an animal darts into the road.” This results from cognitive slowing, in which processing critical information and solving problems takes longer; it potentially represents the most catastrophic effect of continued sleep loss. Killgore explained that “a sleep-deprived health care provider may not see a simple solution to a simple problem that just takes a different perspective. [Sleep deprivation] also affects judgment and willingness to take risks and how [someone] makes moral decisions. So a health care worker who is lacking sleep may make very different life-or-death decisions than they would if they were well rested.”

Clinicians and HCPs who do shift work—ie, working at times that are biologically out of alignment with their normal day-night rhythm—also seem to be at greater risk for insomnia and other psychological problems during the pandemic.

Negative Psychiatric Sequelae
Sleep deprivation also alters mood and emotional processing. Without sufficient sleep, individuals are prone to emotional and physical burnout, and normally manageable tasks can easily become overwhelming.

Killgore et al found that lack of sleep leads to an increase in implicit biases, such as those against individuals of different races or ethnicities. “In our study, when sleep was restricted to 4 hours per night for 3 weeks, implicit biases against Arab Muslims were high, but when the same people got 8 hours of sleep a night for 3 weeks, these biases against others completely disappeared,” he said.

Lack of sleep has been associated with poor memory and difficulty with attention and concentration, Killgore added. Although causality is not conclusive, nearly every major psychiatric disorder is associated with sleep problems, he said.

Other Health Risks
Long-term sleep restriction can have many adverse health effects, Killgore explained. “Most notably, long-term insufficient sleep is associated with increased metabolic disturbances, weight gain, obesity, hypertension,
Not surprisingly, continued sleep deprivation also presents a higher risk of acquiring the COVID-19 virus. “There’s a potential indirect pathway, in that poor sleep can exacerbate conditions that may be associated with increased risk of infection or complications from COVID-19, like cardiovascular disease,” Dietch said. “Good sleep health is important to support physical and mental health broadly during the COVID-19 pandemic.”

Killgore added, “Our own research has shown that getting more and better quality sleep is associated with greater resilience during the COVID-19 pandemic.”

Addressing Impairments
Killgore pointed out that a sleep-deprived individual, even one who is normally very wise and judicious, very often will not realize that they are sleepy and prone to making mistakes. Many individuals with chronic sleep problems can get extremely tired and may even fall asleep frequently throughout the day without knowing it. Killgore suggested that it is important to take any errors in performance, even minor ones, as serious indicators of impairment. “The best option is to simply follow the science and assume that if you are sleep restricted, you are probably impaired without knowing it,” he explained. “Most people will start to show performance deficits after they have been awake longer than 18 hours straight. Performance declines rapidly overnight, from about 11 PM to about 8 AM the following morning.”

Killgore suggested that individuals probably show impairment if they are awake at a time when they would normally be sleeping. Chronic sleep restriction down to even 6 hours a night for 2 weeks causes nearly as much impairment as a single night without any sleep, he said. Killgore encourages clinicians to “take it seriously if [they] are dozing off or making simple mistakes at times when [they] should be awake and alert. These are clear signs that [they] are not getting enough sleep.”

Grandner observed that paradoxically, “one of the best clues to impairment is the feeling that you’re starting to adjust to the stress.” Another is the recognition of heightened emotional status—feeling unusually annoyed, sad, or anxious, for instance. “Feeling indecisive or defensive about decisions [is another sign] that you may be sleep impaired,” he added.

“Unfortunately,” Killgore stated, “there is no substitute for sleep. Sleep is an absolute need, and the body will start grabbing it wherever it can, even at the most inopportune moments, if you are not getting enough. The solution isn’t to swing the pendulum in the other direction—it’s to find balance.” He suggested that one of the most important things to do after work is to try to disengage from the day. Also, a number of psychological and behavioral treatments exist for insomnia (Table 1).

Finding Short-Term Solutions
Individuals can employ strategies to remain more alert, at least until they can catch up on sleep. The experts agreed that in the short term, caffeine can help maintain alertness—but they also noted that it should be used judiciously, as it remains in the body and can cause sleeplessness 6 to 12 hours after ingestion. “Although caffeine is very effective at sustaining immediate alertness and vigilance performance, it often produces no measurable improvements in judgment and decision-making quality,” Killgore said.

Grandner agreed, adding that “stimulants, including caffeine, all improve fatigue, reaction time, and alertness, but they don’t rescue decision-making. People just make bad decisions faster,” he said.

The experts noted there are a number of strategies to improve performance and/or wakefulness while at work, at least in the short term (Table 2).

References
Is Insomnia a Predictor of Mental Illness?

Brian Miller, MD, PhD, MPH

A quote attributed to Benjamin Franklin is “An ounce of prevention is worth a pound of cure.” With that in mind, the field of psychiatry continues to aim to identify early indications of mental illness to initiate early treatment, since expedient treatment has been shown to positively affect the outcomes of many psychiatric disorders. Indeed, there is an unmet need for preventive strategies that delay or forestall the onset of mental illness, particularly in persons at heightened risk. Consequently, researchers have looked at insomnia—a syndrome with chronic problems related to sleep onset and/or continuity that are associated with impaired daytime functioning—as a potential predictor of new-onset major depressive disorder in 2 meta-analyses with odds ratios (ORs) of 2.3 to 2.6.1,2 Hertenstein and colleagues3 performed a systematic, quantitative review of longitudinal studies, investigating whether baseline insomnia (including both nighttime and daytime symptoms) is associated with subsequent onset of a mental disorder. Study authors searched for articles in PubMed, Medline, PsycInfo, and PsycArticles, as well as the reference lists of identified studies and recent congress abstracts. Longitudinal studies were included if they met the following criteria: follow-up lasted at least 12 months for adults in whom insomnia was diagnosed, based on interview or questionnaire (and covering both nighttime and daytime symptoms); diagnoses of mental disorders were verified by clinical interview or validated self-rating questionnaires; and either participants with mental disorders other than insomnia at baseline were excluded, or the study controlled for baseline psychopathology. Data were analyzed using random effects meta-analysis. Effect sizes (ORs) were calculated for individual mental disorders as well as all mental disorders pooled together. The authors performed assessments of both risk of bias and publication bias.

The authors identified 13 studies, comprising a total sample of 181,798 participants at baseline and 133,967 at the last follow-up. These studies included 10 samples for depression, 6 for anxiety, 2 for alcohol abuse, and 1 for psychotic disorders. The mean duration of study follow-up was 61 months. They found that baseline insomnia was associated with significantly increased odds of incident depression (OR, 2.8), anxiety (OR, 3.2), alcohol abuse (OR, 1.4), and psychosis (OR, 1.3).

Across all studies pooled together, baseline insomnia was associated with a significant, 2.6-fold increased odds of mental disorder, with evidence of significant between-study heterogeneity. Overall, the risk of bias was rated as moderate for most individual studies. There was no significant evidence of publication bias for either depression or anxiety. There was no evidence that study duration moderated these associations. Furthermore, the pattern of findings did not change in a subgroup analysis of studies of participants without any mental disorders at baseline.

The authors concluded that baseline insomnia is associated with significantly increased odds of incident mental disorder. Potential explanations for these associations include brain hyperarousal, neuroplasticity, and emotion regulation. A strength of the meta-analysis is that both nighttime and daytime symptoms of insomnia were required for inclusion, consistent with current diagnostic criteria. The authors noted, however, that the observed temporal association does not allow for causal attributions. Nevertheless, findings raise the possibility for treatment of insomnia for the prevention of mental disorders.

DR MILLER is a professor in the Department of Psychiatry and Health Behavior, Augusta University, Augusta, Georgia. He is the schizophrenia section chief for Psychiatric Times™. The author reports that he receives research support from Augusta University, the National Institute of Mental Health, the Brain and Behavior Research Foundation, and the Stanley Medical Research Institute.

References
Sleep Disorders & Psychiatry

Watch relevant discussion between Dr. Doghramji and Dr. Thorpy as they break down:

- The complicated relationship between sleep disorders and psychiatric illness
- COVID-19’s impact on insomnia and sleep disruption and the psychiatric sequelae
- Diagnostic and treatment challenges in sleep disorders