Insomnia

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Nosologies and Classifications of Insomnia

Nosologies

Three major diagnostic systems are commonly used for the classification of insomnia: the International Classification of Diseases, 10th revision (ICD-10); the Diagnostic and Statistical Manual of Mental Disorders, Fourth edition (DSM-IV); and the International Classification of Sleep Disorders, Second edition (ICSD-2).

DSM-IV and ICD-10 classify insomnia into primary insomnia or nonorganic insomnia (when no other neurological, medical, psychiatric, or sleep disorders can be identified as the cause of the insomnia), and several subtypes of secondary and/or comorbid insomnia when the symptom is judged to be associated with other primary conditions.

Under the category of insomnia, the ICSD-2 classifies primary insomnia into diagnoses associated with specific etiologies or presenting patterns, including psychophysiological insomnia, idiopathic insomnia, and paradoxical insomnia. Psychophysiological insomnia, which comprises approximately 15% of insomniacs, is characterized by somatized tension and is thought to be caused by a learned association between bedtime cues and sleep-preventing anxiety. Paradoxical insomnia, also called subjective insomnia or sleep state misperception, is the subjective complaint of severe insomnia that is not confirmed by objective findings or not associated with daytime deficits commensurate with the severity of the reported sleep disturbance. Nocturnal polysomnographic (NPSG) recording in this group shows that sleep quality and quantity are in the normal range. This group consists of less than 5% of all insomniacs. Idiopathic insomnia, also referred to as childhood-onset insomnia, presents with a lifelong history of difficulty sleeping. This type of insomnia is presumably caused by abnormality of the neurological system that regulates sleep and wakefulness. Idiopathic insomnia is relatively rare, comprising less than 1% of cases of insomnia.

In addition, the ICSD-2 diagnoses include insomnias produced by external factors, such as inadequate sleep hygiene caused by sleep-disturbing activities of daily living and adjustment insomnia caused by emotional arousal associated with acute stress, conflict, or environmental changes. Other ICSD-2 diagnoses include behavioral insomnia of childhood and insomnia due to mental disorder, medical condition, and drug or substance use. These categories account for the remainder of insomnia cases listed in the previous paragraph. Moreover, insomnia may also be the chief complaint for other sleep disorders that are not under the category of insomnia, such as circadian rhythm sleep disorders, sleep-related breathing disorders, and sleep-related movement disorders. The ICSD-2 diagnoses of these categories in which the patient may present with a complaint of insomnia are listed in Table 1.

Daytime Consequences of Insomnia

In addition to night-time symptoms, the diagnostic criteria also include the presence of decreased daytime functioning associated with the sleep problem. Patients with insomnia often report an impaired mood during wakefulness, such as worrying and irritability, and there are common reports of lack of energy and reduced physical activity. In addition, insomnia patients tend to complain of deterioration in cognitive functioning, such as poor memory and concentration. However, objective research has not consistently demonstrated the impact of insomnia on daytime performance and alertness.

Classification by Time of Problem

Insomnia is sometimes subdivided in terms of the features of the complaint. Sleep-onset insomnia, also called initial insomnia or early insomnia, refers to difficulty falling asleep. Sleep-maintenance insomnia, also called middle insomnia, is used to describe sleep disruption during the night after sleep onset has been achieved. Terminal insomnia, also called late insomnia or early morning wakening, refers to an inability to

Table 1 ICSD-2 diagnostic categories with the complaint of insomnia

Category
Insomnia
Adjustment insomnia (acute insomnia)
Psychophysiological insomnia
Paradoxical insomnia
Idiopathic insomnia
Insomnia due to mental disorder
Inadequate sleep hygiene
Behavioral insomnia of childhood
Insomnia due to drug or substance
Insomnia due to medical condition
Insomnia not due to substance or known physiological condition, unspecified
Physiological (organic) insomnia, unspecified
Other sleep disorders
Circadian rhythm sleep disorders
Sleep-related breathing disorders
Sleep-related movement disorders

Source: Reproduced from American Academy of Sleep Medicine (2005) *International Classification of Sleep Disorders, 2nd edn: Diagnostic and Coding Manual.* Westchester, IL: American Academy of Sleep Medicine, with permission from AASM.

return to sleep after awakening before the desired wake-up time. In clinical settings, it is not uncommon to see a patient presenting with more than one of these features of insomnia.

Causes of Insomnia

Diathesis Stress Model of the Development and Persistence of Chronic Insomnia

The symptom of insomnia can be derived from a wide range of psychological, physiological, or behavioral etiologies. The factors contributing to insomnia can be conceptualized into predisposing, precipitating, and perpetuating factors.

A brief period of insomnia is often precipitated by acute stress (e.g., marital crisis, bereavement, job promotion, and medical illness) or change of lifestyle (e.g., jet lag, schedule change, and move to a new residence). Often, the insomnia subsides after the triggering events resolve or after the individual gets used to the change. However, the insomnia may persist and may become chronic in some cases.

Individuals with certain personality traits (e.g., internalization of conflicts, perfectionism, excessive worrying, and need for control) have been shown to be more vulnerable to develop long-term sleep problems. Characteristics of 'hyperarousal' in either psychological or physiological domains are also predispositions for chronic insomnia. Consistent with these factors, individuals with insomnia have been shown to have an elevated metabolic rate, body temperature, heart rate, urinary cortisol and adrenaline excretion, skin conduction, and muscle tension, as well as increased cognitive processing as reflected by faster frequencies (in the beta range) in the electroencephalogram. In addition, individuals who are active in the evening (evening types) or those with rigid endogenous circadian rhythmicity can also be predisposed to insomnia.

Perpetuating factors further transform acute insomnia into a chronic sleep problem. Maladaptive association learning has been proposed to be a cause of chronic insomnia. Repeated experience of poor sleep may promote an association between sleeplessness and the sleep setting. Therefore, the bedtime rituals and bedroom environment gradually become cues for poor sleep and the anxiety associated with tossing and turning in bed. Excessive cognitive activation can also interfere with sleep. For people who have had many nights of poor sleep, the anticipation of the daytime consequences, as well as the next night's struggle for sleep, produces a state of apprehensive worry that exacerbates the problem. In addition, poor sleep hygiene often contributes to the perpetuation of insomnia. Behavioral practices initiated to cope with poor sleep, such as spending more time 'resting' in bed and using caffeine to counteract the daytime consequences of insomnia, may prolong the sleep problem.

Secondary and Comorbid Insomnia

Most cases of insomnia are comorbid with other conditions, especially psychiatric disorders. It has been estimated that 35–40% of patients with insomnia carry one or more comorbid psychiatric diagnoses, with affective disorders, anxiety disorders, and substance abuse among the most prevalent. Difficulty in sleeping can also be the result of the pain, discomfort, and pathophysiological mechanisms associated with medical conditions, particularly in neurological, endocrine, gastrointestinal, genitourinary, and cardiopulmonary diseases. In addition, the medications prescribed for these conditions may disrupt sleep and cause insomnia. Examples include antihypertensives, bronchodilators, and activating antidepressants. It is often assumed that patients' insomnia is a symptom secondary to the 'primary condition.' However, the insomnia may continue even when the primary condition is in remission. The etiologies for insomnia and the other conditions may coexist and interact with each other. It may not be possible to clarify the causal relationship among the factors. The concept of 'secondary insomnia' may promote underrecognition and undertreatment of insomnia. The term 'comorbid insomnia' therefore may be more appropriate.

Evaluation

The evaluation of insomnia is often based primarily on the patient's history. Important issues include the chief complaint, course of the insomnia, daytime consequences, sleep pattern, beliefs about the sleep problem, psychological functioning, medication and substance use, and effects of prior treatments. A daily sleep diary is frequently used to facilitate the clinical evaluation of sleeping difficulties. Patient logs will give an idea about the sleeping pattern, including retiring time, perceived amount of time it takes to fall asleep, duration of sleep, arising time; how refreshing sleep was; occurrence of fatigue and naps during the day; and features such as the amount and time of caffeine ingestion, sleep medication, and alcohol.

If the patient's history suggests the possibility of other underlying sleep disorders, such as sleep-related respiratory disturbances or periodic limb movements, an NPSG recording may be necessary to establish the diagnosis.

Because insomnia is common in individuals with psychiatric disorders, a thorough assessment of these conditions needs to be part of the evaluation. Similarly, when insomnia is suspected to be associated with a medical disorder, a physical examination and laboratory tests may be necessary.

Treatment

The treatment of comorbid insomnia usually focuses on the condition associated with the insomnia. As mentioned earlier, it is a general assumption that once the primary condition has been treated, the associated insomnia will also resolve. However, not uncommonly, the insomnia becomes a residual symptom. Treatments aiming at sleep etiologies and/or symptomatic management may be considered in these cases. Behavioral treatments of insomnia are often required in conjunction with the treatment of the medical disorder in these cases.

Major pharmacological treatments for insomnia include benzodiazepines, novel benzodiazepine receptor agonists, and some sedating antidepressants. The novel benzodiazepine receptor agonists and benzodiazepines are the drugs of choice for the symptomatic management of insomnia. Sedating

antidepressants are usually used for sleep problems associated with affective disorders. Short-term usage of hypnotics has been shown to be effective for transitional and situational insomnia. The long-term use remains controversial and requires further study. Melatonin has also been used for the treatment of insomnia, especially for difficulty falling asleep, although research on its efficacy in facilitating sleep in insomniacs has not been consistent. Research on the use of melatonin to adjust the circadian phase for the treatment of circadian rhythm sleep disorder has shown promising results.

Various behavioral and psychological techniques have also been proven to be effective in treating chronic insomnia. These techniques are usually combined and known as cognitive behavioral therapy for insomnia. The long-term efficacy of cognitive behavioral therapy for insomnia has been shown to be at least as effective as pharmacological treatment with more durable improvement when therapy is discontinued.

See also: Aging and Sleep. Insomnia, Cognitive Behavioral Treatment of. Insomnia, Fatal. Multiple Sleep Latency Test. Parasomnias. Sleep Disorders. Sleep; Overview. Sleep–Wake Cycle. Wakefulness

Further Reading

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