

Chapter 1

Defining Insomnia

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Abstract Insomnia is one of the most common sleep complaints with a prevalence of 3–22 % depending on the classification system.

The classification of insomnia has an ever-changing definition, currently based on the recent International Classification of Sleep Disorders: Diagnostic and Coding Manual-3rd Edition (ICSD-3), International Classification of Diseases (ICD-10), and DSM-V. As of now, it is described as difficulty initiating or maintaining sleep for a specified period of time with adequate time given for sleep but ultimately resulting in daytime disruption. Insomnia is commonly associated with comorbid medical and psychiatric conditions and with exposure to drugs or other substances but should be appropriately treated regardless of whether it is associated with a comorbid condition.

Keywords Insomnia • International Classification of Sleep Disorders: Diagnostic and Coding Manual-3rd Edition (ICSD-3) • Diagnostic and Statistical Manual on Mental Disorders-5th Edition (DSM-V) • Nomenclature • Classification • Nosology

Introduction

In the early 1980s, as the sleep medicine movement was just gathering steam, there was perhaps no rallying cry as popular as “insomnia is a symptom, not a disorder.” Presumably, this position was taken in part for medico-political reasons, but also because it was genuinely believed that the polysomnographic study of sleep was

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destined to reveal all the underlying pathologies that give rise to the “symptoms” of insomnia, fatigue, and sleepiness. After two decades or more of sleep research and sleep medicine, it is interesting to find that “all things old are new again”: Insomnia is once again considered a distinct nosological entity. The ICSD-3 has deviated from the prior edition in that primary and secondary insomnias have been eliminated as it was difficult to distinguish the conditions given that patients did not exclusively fit in either category and there was considerable overlap between primary and secondary insomnias. The subtypes of primary insomnia have also been removed in the most recent ICSD-3 as it was increasingly difficult to discriminate among the subtypes. The manual now classifies three categories of insomnia: chronic, short-term, and other insomnia disorder [1]. Prevalence rates for insomnia vary widely, from 3.9 to 22.1 % [2].

Historical Perspectives

The first references in the Western culture to insomnia, the inability to initiate and or maintain sleep, date back to the ancient Greeks. The earliest mention of it is in the pre-Hippocratic Epidaurian tablets that list 70 cases, one of which is a patient with insomnia. The first scientific approach is found in the writings of Aristotle from circa 350 BC, and the first records of treatment of insomnia come from the first-century BC Greek physician, Heraclides of Taras, who lived in Alexandria and recommended opium for the treatment of insomnia. Although there had been significant amount of research and interest in insomnia in the twentieth century it was not until the 1970s that distinct diagnostic criteria were created to describe different forms of insomnia.

Over the years insomnia has featured in the writings of several prominent literary figures including William Shakespeare, who alluded to it in several of his plays, to the pop culture icons the Beatles who referred to it in their song “I am so tired.” Prominent historical figures that have suffered from insomnia include Churchill, Charles Dickens, Napoleon Bonaparte, Marcel Proust, Alexander Dumas, and Benjamin Franklin to name a few.

Definitions of Insomnia

Insomnia is the most common sleep-related complaint and the second most common overall complaint (after pain) reported in primary care settings with about 30–50 % of adults reporting sleep trouble in a given year [3]. The general consensus based on many population studies is that one-third of adults have frequent trouble falling sleep, staying asleep, or overall poor sleep quality [2]. NIH State-of-the-Science Conference held in June 2005 concluded that the

prevalence of chronic, persistent insomnia that also causes daytime fatigue and impairment is 10% [4] and is a cause of significant morbidity [1]. It costs the American public about \$100 billion annually in medical expenses, ramifications of accidents, and reduced productivity due to absenteeism and decreased work efficiency [5].

Insomnia is not defined by total sleep time but by the inability to obtain sleep of sufficient length or quality to produce refreshment the following morning [6]. For example, a person who needs only 4 h of sleep does not have insomnia if he or she is refreshed in the morning after 4 h of sleep, whereas someone who needs 10 h of sleep may have insomnia if he or she does not feel refreshed after 8 h of fragmented sleep. Previously the underlying psychiatric or psychological condition was thought to be the most common cause of insomnia, but newer studies have refuted this theory. In fact untreated insomnia may adversely affect the course of the associated disorder [6].

Classifications

There are three major classification systems used by sleep medicine professionals: The International Classification of Diseases (ICD-10) by the World Health Organization (WHO), The International Classification of Sleep Disorders-3rd edition (2014) by the American Academy of Sleep Medicine (AASM), and the Diagnostic and Statistical Manual on Mental Disorders-5th edition (DSM-V) (2013) by the American Psychiatric Association (APA) (Table 1.1).

Table 1.1 DSM-V diagnostic criteria for primary insomnia [8]

(A) The primary complaint of poor sleep quality or duration associated with any one of these symptoms:
1. Trouble with sleep onset (in children, this symptom may be trouble falling asleep without the help of a caregiver).
2. Trouble with sleep maintenance (in children, this symptom may be trouble staying asleep without the help of a caregiver).
3. Waking up earlier than desired in the morning.
(B) Troubled sleep causes significant distress or decline in social, occupational, academic, behavioral, or other life areas.
1. Trouble sleeping is happening for at least thrice per week.
2. Trouble sleeping is happening for at least 3 months.
3. The sleep difficulty occurs despite adequate opportunity for sleep.
4. The insomnia is not secondary to another sleep disorder:
(C) The insomnia is not due to the effects of a pharmacological substance.
(D) Comorbid mental and medical disorders are not the cause of the predominant complaint of insomnia.

Table 1.2 ICSD-3 criteria for chronic insomnia disorder [1]

(A) The patient or caregiver report:
1. Sleep onset difficulty.
2. Sleep maintenance difficulty
3. Early morning awakenings.
4. Not going to bed when appropriate.
5. Difficulty sleeping without the intervention of the caregiver.
(B) The patient or caregiver report:
1. Fatigue and/or malaise.
2. Troubles with attention, concentration, or memory.
3. Difficulty with family obligations or social, school, or work performance.
4. Irritability and mood disturbance.
5. Sleepiness during the day.
6. Issues with behavior such as aggression, impulsivity, or hyperactivity.
7. Tendency to make errors or cause accidents.
8. Decreased energy and motivation or lack of initiative.
9. Dissatisfaction and complaints about sleep quality.
(C) The complaints in (A) and (B) are not solely due to inappropriate circumstances or not enough time allotted for sleep.
(D) The symptoms in (A) and (B) occur at least thrice weekly.
(E) The symptoms in (A) and (B) have been ongoing for at least 3 months.
(F) The symptoms above are not due to another sleep disorder.

All the above must be met

WHO-ICD: The World Health Organization defines insomnia as a condition of unsatisfactory quantity and/or quality of sleep, which persists for a considerable period of time, including difficulty falling asleep, difficulty staying asleep, or early final waking [7].

AASM: The American Academy of Sleep Medicine’s nosology (the International Classification of Sleep Disorders-3rd edition [ICSD-3]) classifies insomnia into three categories: chronic, short-term, and other insomnia disorders. Chronic insomnia includes the “primary” and “secondary” insomnia referenced in ICSD-2, comorbid insomnia, behavioral-insomnia of childhood, psychophysiological insomnia, inadequate sleep hygiene, idiopathic insomnia, and paradoxical insomnia [1] (Tables 1.2 and 1.3).

Classification Based on Duration and Severity

Apart from presenting a specific definition of the disorder/disease entity, there is the need to qualify the duration and severity of the defined illness. Typically, duration is framed dichotomously in terms of acute and chronic stages. Severity can be construed in one of the two ways. In one case, standards are set for what constitutes

Table 1.3 ICSD-3 diagnostic criteria for short-term insomnia [1]

(A) The patient or caregiver report:
1. Sleep onset difficulty.
2. Sleep maintenance difficulty.
3. Early morning awakenings.
4. Not going to bed when appropriate.
5. Difficulty sleeping without the intervention of the caregiver.
(B) The patient or caregiver report:
1. Fatigue and or malaise.
2. Troubles with attention, concentration, or memory.
3. Difficulty with family obligations or social, school, or work performance.
4. Irritability and mood disturbance.
5. Sleepiness during the day.
6. Issues with behavior such as aggression, impulsivity, or hyperactivity.
7. Tendency to make errors or cause accidents.
8. Decreased energy and motivation or lack of initiative.
9. Dissatisfaction and complaints about sleep quality.
(C) The complaints in (A) and (B) are not solely due to inappropriate circumstances or not enough time allotted for sleep.
(D) The symptoms in (A) and (B) have been ongoing for less than 3 months.
(E) The symptoms above are not due to another sleep disorder.
All the above must be met

significant deviance from population norms with respect to frequency and intensity of presenting symptoms. In the other case, standards are set by “setting the bar” for “pathologic” at a level which is modal for patients who are help-seeking.

Duration of Illness

Insomnia lasting less than 3 month is generally considered “acute,” or by the ICSD-3 criteria short-term insomnia. It is often associated with clearly defined precipitants such as stress, acute pain, or substance abuse. Insomnia is characterized as being chronic when symptoms persist unabated for a duration of at least 3 months with a frequency of at least three times per week. Please note that these cutoffs are relatively arbitrary and correspond to traditional medical definitions of what constitutes short and long periods of time. At this time there are no studies, which use risk models to evaluate the natural course of insomnia. Thus, there is no way of definitively defining “chronicity” in terms which are related to when the disorder becomes severe, persistent, and (for want of a better expression) “self-perpetuating.” One clinical cue for differentiating between acute and chronic insomnia resides in the way patients characterize their complaint. When patients stop causally linking their insomnia to its precipitant and instead indicate that their sleep problems seem “to have a life of their own,” this change in presentation may (1) serve to define the “cut point” between the acute and chronic phases of the disorder and (2) suggest when CBT should be indicated.

Severity of Illness

Intensity. Although there are no formal diagnostic criteria, most investigators consider 30 or more minutes to fall asleep and/or 30 or more minutes of wakefulness after sleep onset to represent the threshold between normal and abnormal sleep. The criterion should be set at “more than 30 min,” as this definition is better related to the occurrence of complaint in population studies [2, 11]. With respect to “how much sleep,” many investigators are reluctant to fix a value for this parameter. Of the investigators that are inclined to set minimums, most specify that the amount of sleep obtained on a regular basis be equal to or less than either 6.0 or 6.5 h per night. The reluctance to establish total sleep time parameters is due, in part, to the difficulty in establishing precisely what one considers to be abnormal. Representing what is pathological with a single number is too confounded by factors like age, prior sleep, and the individual’s basal level of sleep need. The lack of an established total sleep time cutoff is also related to the possibility that profound sleep initiation or maintenance problems may occur in the absence of sleep loss. This is an important distinction, because it is often assumed that insomnia is synonymous with sleep deprivation. While it is certainly the case that the daytime symptoms associated with insomnia might be explained, in part, by partial chronic sleep loss, daytime symptoms need not be ascribable only to lack of sleep. Studies have also indicated the presence of a 24-h hyperarousal state which includes increased beta activity during NREM, increased cortisol and ACTH secretion during early sleep, and increased metabolic rate during waking and sleep [12–14]. Sleep studies reveal an increased frequency of shifts between NREM and REM and between NREM stages causing microarousals and brief periods of awakening. This correlates well with patient perceptions about their sleep quality and quantity [15].

Frequency. Both DSMV and ICSD-3 require that insomnia-related symptoms be experienced on three or more nights per week for the diagnosis to be made. This may have more to do with increasing the odds of studying the occurrence of the disorder in laboratory than an inherent belief that less than three nights per week is “normal.”

Commonalities and Problems with Current Definitions

All of the above definitions show a degree of consistency, both in terms of what “is” and “is not” delineated. Common to all is that (1) insomnia is defined as a subjective complaint, (2) patients must report compromised daytime functioning, (3) there are no specific criteria for how much wakefulness is considered pathologic (prior to desired sleep onset or during the night), and (4) there are no criteria for how little total sleep must be obtained to fall outside the normal range. There are lack of quantitative criteria for sleep-onset latency (SOL), wake after sleep onset (WASO), and total sleep time (TST).

Insomnia as a Subjective Complaint

Defining insomnia as a subjective complaint without requiring objective verification of signs and symptoms has advantages and disadvantages. The advantage of having subjective criteria is that it recognizes the primacy of the patient's experience of distress or disease. That is, ultimately patients seek, comply with, and discontinue treatment based on their perception of wellness. The disadvantage is that such measures, when used alone, do not allow for a complete characterization of either the patient's condition or the disorder in general [10].

Insomnia and Daytime Impairment

The reason that daytime complaints are required for diagnosis is that in the absence of such complaints, it is possible that the phenomena of "short sleep" may be misidentified as insomnia. Frequent complaints associated with insomnia include fatigue, irritability, problems with attention, and concentration and distress directly related to the inability to initiate and/or maintain sleep [9].

The Old Diagnostic Entity of Comorbid or Secondary Insomnia

Secondary insomnia was a term coined to refer to insomnia that was due to another disorder. Since the main diagnostic tool is history and most people present with the insomnia lasting at least 6 months if not more, they are unable to provide a reliable accounting of the course and their relative sequence of the two disorders. Nevertheless incorporating sleep diaries, questionnaires, and other modalities can help rule out various comorbidities in addition to a thorough medical and psychiatric evaluation [16].

Since comorbidity without necessarily implying causality can easily be established and since, from a treatment standpoint, both conditions need to be treated together the tide in 2010 turned in favor of abandoning secondary insomnia and adopting the term comorbid insomnia. Instead of saying insomnia due to a certain disorder they stated that the onset and the temporal course of the insomnia should coincide with the course of the specific disorder for the insomnia to be considered comorbid [1].

The next logical step, however, was to abandon comorbid insomnia as well and just incorporate this into the overarching diagnosis of chronic insomnia, as treatment modalities for insomnia, most of the time, are the same regardless of comorbidities. Also since, regardless of causality, both conditions need to be treated for a successful outcome the terms comorbid or secondary became equally unnecessary.

Summary

We are fortunate to have several nosologies that recognize insomnia as primary disorder. The various classification systems provide us the wherewithal to differentiate types of insomnia both by presenting complaint and by the factors that are thought to precipitate or perpetuate the illness. In the past 2 years there has been more concordance than ever between the two major diagnostic manuals, the ICSD-3 and the DSM-V. Perhaps what remains to still be accomplished, from a definitional point of view, is for scholars and scientists to complete the characterization of this important disorder by providing for the formulation of the ultimate definition based on more objective quantifiable guidelines, one which formally lays out the research diagnostic criteria and does so based on the force of empirical research.

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