

# Sleeping Disorders in the Population and Their Management in Family Practice

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**Abstract:** Sleep disorders can be divided into those producing insomnia, those causing daytime sleepiness, and those disrupting sleep. Transient insomnia is extremely common, afflicting up to 80% of the population. Chronic insomnia affects 15% of the population. Current evidence indicates that chronically disrupted sleep in children and adolescents can lead to problems in cognitive functioning. Behavioral interventions for pediatric sleep problems (e.g., graduated extinction, parent education, positive bedtime routines), especially in young children, have been shown to produce clinically significant improvements. This review describes a few conditions of sleep disorders among population from different area of the world as well as provides clinically useful approaches to sleep complaints and in Family Medicine.

**Keywords:** Sleeping Disorders in the Population, producing insomnia.

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## 1. INTRODUCTION

This normal sleep-wake process can be influenced by a wide variety of physiologic, psychologic and environmental factors. The most striking change in sleep patterns in older adults is the repeated and frequent interruption of sleep by long periods of wakefulness, possibly the result of an age-dependent intrinsic change in the interaction of the sleep homeostatic and circadian arousing processes that control sleep. Other age-dependent changes in sleep include decreased total sleep time (TST), reduced sleep efficiency (time asleep as a percentage of time in bed) and decreased slow wave and REM sleep, as well as increased stages 1 and 2 sleep. These age-dependent changes in nocturnal sleep are accompanied by an increased incidence of napping or falling asleep during the day.<sup>(14)</sup>

Sleep-related disorders are common in the general adult population, and as the population ages, the prevalence of these disorders increases. A common misconception among clinicians and the public is that this increased prevalence is a normal and expected phenomenon of aging. However, this higher prevalence of sleep disruption is often the result of the increased presence of medical and psychosocial comorbidities in this population. The complicated multifactorial interactions that generate sleep disorders in older individuals pose important challenges to clinicians. Furthermore, many clinicians are unaware of the seriousness and potential morbidity associated with sleep problems in older people, distinct from the morbidity of concurrent disorders. As a result, these issues are often under investigated, or completely ignored.<sup>(1)</sup>

Sleep disorders are characterized by abnormal sleep patterns that interfere with physical, mental, and emotional functioning. Stress or anxiety can cause a serious night without sleep, as do a variety of other problems. Other common sleep disorders include sleep apnea (loud snoring caused by an obstructed airway), sleepwalking, and narcolepsy (falling asleep spontaneously). Restless leg syndrome and bruxism (grinding of the teeth while sleeping) are conditions that also may contribute to sleep disorders.<sup>(3)</sup>

Insomnia is the most common type of sleep disorder, and it's the inability to get to sleep or sleep well at night, is an all-too common sleeping problem in fact, it's the most common sleep complaint. Insomnia can be caused by a wide variety of things including stress, jet lag, a health condition, the medications you take, or even the amount of coffee you drink. Insomnia can also be caused by other sleep disorders or mental health conditions such as anxiety and depression.<sup>(4)</sup>

### Objectives:

Sleep-related disorders are common in the general adult population, and as the population ages, the prevalence of these disorders increases. A common misconception among clinicians and the public is that this increased prevalence is a normal and expected phenomenon of aging. However, this higher prevalence of sleep disruption is often the result of the increased presence of medical and psychosocial comorbidities in this population. therefore the Aim of this paper is to review the main sleeping disorders and their management in family medicine practice.

### Methodology:

Medline (pubmed) literature review and analysis for previous studies that are discussing sleep disorders among population in different part of the world throught a systemic review, which become a common recurrence nowadays, our searched was using the search terms 'sleep disorder' and 'management of sleep disorders in family medicine ' alone and in combination. Publications were selected mostly in the past 10 years, but did not exclude commonly reference and highly regarded older publications. The reference list of articles was also searched, identified by the search strategy and those selected that were relevant. Selected review articles and meta-analyses were included because they provide comprehensive overviews that may be beyond the scope of this article.

## 2. RESULTS AND DISCUSSION

### Polysomnography:

Although many sleep disorders can be diagnosed using history alone, overnight polysomnography may be useful to assess for disorders such as obstructive sleep apnea (OSA). Polysomnography monitors brain wave activity (electroencephalogram), eye movements (electro-oculogram), muscle activity (electromyogram), heart rate and rhythm (electrocardiogram), and respiration (via nasal pressure transducer and oronasal thermistor, and oxygen saturation using pulse oximetry). Table 2 lists the most common indications for polysomnography. <sup>(2)</sup>

### Insomnia:

Approximately 10% of the U.S. population has had insomnia that occurred every night for at least two weeks<sup>9</sup>; however, many do not discuss it with their physician. Insomnia is characterized by repeated difficulty with sleep initiation (the time it takes to fall asleep, normally less than 30 minutes; called sleep latency in sleep studies), duration (normally seven to nine hours per night for adults; also called sleep quantity), consolidation (sleep uninterrupted by arousals or awakenings), or quality that occurs despite adequate time and opportunity for sleep, resulting in daytime impairment.<sup>(5)</sup> Daytime impairment may include fatigue; tiredness; difficulty with memory, concentration, and attention; worry about sleep; mood disturbances; or irritability. Insomnia is usually diagnosed with a patient history that includes evaluation for contributing psychiatric or medical conditions. Overnight polysomnography is rarely needed, unless the history suggests concurrent sleep disorders or initial treatment is ineffective. <sup>(6)</sup>

Previous studies have indicated that persons with obesity are significantly more likely to report insomnia or difficulty with sleep. Additionally, over an average 7.5-year follow-up, persons with obesity were significantly more likely to develop chronic insomnia, although this effect was partially negated when controlling for sociodemographic and behavioral factors. Finally, in persons with obesity, complaints of chronic emotional stress or sleep disturbance have been reported to be predictors for short sleep duration, rather than voluntary sleep curtailment as previously thought. Vgontzas et al further showed that in persons with obesity and without sleep disturbances or emotional stress, sleep duration was similar to non-obese control subjects. This may indicate the importance of detection and treatment of sleep disturbances as a potential therapeutic intervention for obesity. <sup>(10,11,12)</sup>

Insomnia, or its underlying pathophysiology, may play a role in predisposing one to overconsumption of energy, thus leading to weight gain. In a study of over 1000 volunteers from the Wisconsin Sleep Cohort Study, Taheri et al found that shorter sleep durations (5 hours per night versus 8 hours per night) were associated with 15.5% lower leptin levels and 14.9% higher ghrelin levels, independent of BMI, which may indicate that chronically shortened sleep duration could increase appetite, leading to overconsumption. <sup>(13)</sup>

**Obstructive sleep apnea** is a significant medical problem affecting up to 4 percent of middle-aged adults. The most common complaints are loud snoring, disrupted sleep and excessive daytime sleepiness. Patients with apnea suffer from fragmented sleep and may develop cardiovascular abnormalities because of the repetitive cycles of snoring,

airway collapse and arousal. Although most patients are overweight and have a short, thick neck, some are of normal weight but have a small, receding jaw. Because many patients are not aware of their heavy snoring and nocturnal arousals, obstructive sleep apnea may remain undiagnosed; therefore, it is helpful to question the bedroom partner of a patient with chronic sleepiness and fatigue, cardiovascular disease is common in patients with obstructive sleep apnea. <sup>(7)</sup> Hypertension and obesity increase the risk of cardiac disease and are frequent findings in patients with this sleep disorder. Although hypertension is the best documented cardiovascular condition in obstructive sleep apnea, some studies have shown that patients with the disorder are also at increased risk for cardiac arrhythmias, including severe bradycardias, during apneic episodes. Furthermore, the prevalence of angina and myocardial infarction is increased in patients with apnea. Obstructive sleep apnea has been shown to cause dilated cardiomyopathy, which is reversible with successful treatment of the sleep disorder. <sup>(8)</sup>

Patients with sleep apnea who are smokers may also have coronary artery disease and obstructive airway disease. More severe oxyhemoglobin desaturations occur during apneic episodes in patients with both sleep apnea and chronic obstructive pulmonary disease. In some patients, repetitive severe nocturnal desaturations may lead to persistent pulmonary hypertension and right-sided heart failure. <sup>(7,8)</sup>

Polysomnography in a sleep laboratory is the gold standard for confirming the diagnosis of obstructive sleep apnea; however, the test is expensive and not widely available. Home sleep studies are less costly but not as diagnostically accurate. Treatments include weight loss, nasal continuous positive airway pressure and dental devices that modify the position of the tongue or jaw. Upper airway and jaw surgical procedures may also be appropriate in selected patients, but invasiveness and expense restrict their use. <sup>(9)</sup>

**Sleep-related movement disorders,** Sleep-related movement disorders of childhood encompass sleep myoclonus of infancy, rhythmic movement disorder, periodic limb movement disorder (PLMD), and restless legs syndrome (RLS). Sleep myoclonus of infancy is typically associated with clusters of myoclonic jerks that involve the whole body, trunk, or limbs. They are usually considered to be benign phenomena and gradually disappear after six months of age, necessitating no further treatment. <sup>(3)</sup>

**Summary of Common Sleep Disorders:**

<i><b>DISORDER</b></i>	<i><b>SYMPTOMS AND SIGNS</b></i>	<i><b>MOST EFFECTIVE TREATMENT</b></i>
<b>Delayed sleep phase syndrome</b>	Late sleep onset and wake-up time	Bright light therapy in the morning, low-dose melatonin in the evening
<b>Insomnia</b>	Difficulty initiating or maintaining sleep, daytime sleepiness with inability to nap, daytime impairment (e.g., difficulty with memory, concentration, attention; worry about sleep; mood disturbance; irritability)	Cognitive behavior therapy, benzodiazepine receptor agonists
<b>Narcolepsy</b>	Excessive daytime sleepiness, cataplexy, hallucinations upon falling asleep or awakening	Modafinil (Provigil) or stimulants, gamma hydroxybutyric acid (sodium oxybate [Xyrem]), selective serotonin reuptake inhibitors
<b>Obstructive sleep apnea</b>	Snoring, witnessed apneas, gasping or choking, excessive daytime sleepiness	Continuous positive airway pressure
<b>Rapid eye movement sleep behavior disorder</b>	Motor activity during sleep, acting out of dreams, polysomnography showing increased muscle tone	Clonazepam (Klonopin) or melatonin
<b>Restless legs syndrome</b>	Uncomfortable sensation (e.g., “creepy crawly,” aching) in both legs, symptoms are worse in the evening, improve with movement such as walking or stretching	Dopaminergic agonists

### 3. CONCLUSION

Because of the high prevalence, complexity, and health implications associated with sleep-related disorders in older individuals, increasing attention is now being focused on this topic. For example, a recent publication has recommended that sleep problems be approached as a “multifactorial geriatric syndrome.

Of major clinical concern is the strong bidirectional relationship between sleep disorders and serious medical problems in older persons. Individuals with sleep disorders are more likely to develop hypertension, depression, cardiovascular, and cerebrovascular disease. Conversely, individuals with any of these diseases are at higher than normal risk of developing sleep problems

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