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Review Article

**MANAGEMENT OF SLEEP DISORDER IN FAMILY PRACTICE**

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**Abstract:**

**Introduction:** Sleep disorders are very common and can affect sleep quality and quantity, which can cause increased morbidity. people with sleep disorders may be classified as those who can't sleep, those who will not sleep, those with increased daytime sleepiness, and those with excessive movements during sleep. Generally, insomnia, defined as difficulty starting or preserving sleep that cause in daytime morbidity, is diagnosed depending on history findings and can be treated with cognitive behavior therapy, with or without sleep hypnotics. Restless legs syndrome is distinguished by an urge to move the legs that get worse with rest, get better by movement, and usually appears in the evening or at night. Restless legs syndrome treatment is managed depending on the frequency of symptoms. Narcolepsy is distinguished by the presence of increased sleepiness, cataplexy, sleep paralysis, and hypnagogic or hypnopompic hallucinations. The diagnosis is made using a sleep log or actigraphy, then by overnight polysomnography and a multiple sleep latency test. Narcolepsy can be treated with stimulants, like modafinil; selective serotonin reuptake inhibitors; or gamma hydroxybutyric acid (sodium oxybate). Individuals with snoring and witnessed apneas might have obstructive sleep apnea, which can be diagnosed by the use of overnight polysomnography. In fact, Continuous positive airway pressure is one of the most common and efficient treatments for obstructive sleep apnea. Rapid eye movement sleep behavior disorder is distinguished by excessive muscle tone during rapid eye movement sleep, caused by the individual's acting out dreams with potential hurtful outcomes. The diagnosis is made depending on history and polysomnography findings, and the treatment is with environmental safety measures and melatonin or clonazepam.

**Aim of work:** In this review, we will discuss management of sleep disorder in family practice

**Methodology:** We did a systematic search for Family management of sleep disorder in family practice using PubMed search engine (<http://www.ncbi.nlm.nih.gov/>) and Google Scholar search engine (<https://scholar.google.com>). All relevant studies were retrieved and discussed. We only included full articles.

**Conclusions:** Sleep disorders are very common and can affect sleep quality and quantity, which can cause increased morbidity. Individuals with sleep disorders might be classified into those who cannot sleep, those who will not sleep, those with increased daytime sleepiness, and those with excessive movements during sleep. Although a lot of sleep disorders could be diagnosed depending on history alone, overnight poly somnography might be beneficial to detect disorders like obstructive sleep apnea (OSA). Near about 10 percent of the United States population has suffered from insomnia that occurred each night for at least 2 weeks; but many don't discuss this with their doctor.

**Key words:** sleep disorder, presentation, complication, management, family practice

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**INTRODUCTION:**

Sleep disorders are very common and can affect sleep quality and quantity, which can cause increased morbidity. people with sleep disorders may be classified as those who can't sleep, those who will not sleep, those with increased daytime sleepiness, and those with excessive movements during sleep. Generally, insomnia, defined as difficulty starting or preserving sleep that cause in daytime morbidity, is diagnosed depending on history findings and can be treated with cognitive behavior therapy, with or without sleep hypnotics. Restless legs syndrome is distinguished by an urge to move the legs that get worse with rest, get better by movement, and usually appears in the evening or at night. Restless legs syndrome treatment is managed depending on the frequency of symptoms. Narcolepsy is distinguished by the presence of increased sleepiness, cataplexy, sleep paralysis, and hypnagogic or hypnopompic hallucinations. The diagnosis is made using a sleep log or actigraphy, then by overnight polysomnography and a multiple sleep latency test. Narcolepsy can be treated with stimulants, like modafinil; selective serotonin reuptake inhibitors; or gamma hydroxybutyric acid (sodium oxybate). Individuals with snoring and witnessed apneas might have obstructive sleep apnea, which can be diagnosed by the use of overnight polysomnography. In fact, Continuous positive airway pressure is one of the most common and efficient treatments for obstructive sleep apnea. Rapid eye movement sleep behavior disorder is distinguished by excessive muscle tone during rapid eye movement sleep, caused by the individual's acting out dreams with potential hurtful outcomes. The diagnosis is made depending on history and polysomnography findings, and the treatment is with environmental safety measures and melatonin or clonazepam.

In this review, we will discuss the most recent evidence regarding management of sleep disorder in family practice

**METHODOLOGY:**

We did a systematic search for Family management of sleep disorder in family practice using PubMed search engine (<http://www.ncbi.nlm.nih.gov/>) and Google Scholar search engine (<https://scholar.google.com>). All relevant studies were retrieved and discussed. We only included full articles.

The terms used in the search were: sleep disorder, presentation, complication, management, family practice

**Sleep Disorders**

American adults sleep in average 6.9 hours every night, which is less than the 7-9 hours recommended by the sleep experts. Sleep disorders could cause higher morbidity and increased health care costs. In controlled studies, subjects who were restricted to 4-5 hours of sleeping for a couple of days had worsening neurocognitive, behavioral, metabolic, and autonomic parameters. [1] Many studies show that sleep deprivation causes alterations in immune function with high risk of infections, including pneumonia. [4] In addition, chronic sleep deprivation is connected with higher risk of diabetes mellitus, cardiovascular disease, cancer, and mortality. [2]

Individuals with sleep disorders might be classified into those who cannot sleep, those who will not sleep, those with increased daytime sleepiness, and those with excessive movements during sleep.

**Polysomnography**

Although a lot of sleep disorders could be diagnosed depending on history alone, overnight polysomnography might be beneficial to detect disorders like obstructive sleep apnea (OSA). Polysomnography monitors the brain wave activity (electroencephalogram), eye movements (electrooculogram), muscles activity (electromyogram), heart rate and rhythm (electrocardiogram), and respiration (via nasal pressure transducer and oronasal thermistor, and oxygen saturation using pulse oximetry).

### **Patients Who Cannot Sleep INSOMNIA**

Near about 10 percent of the United States population has suffered from insomnia that occurred each night for at least 2 weeks [3]; but, many don't discuss this with their doctor. Insomnia is distinguished by repeated distress with the sleep initiation process (the time required to fall asleep, in normal people it takes less than thirty minutes; called sleep latency in sleep studies), duration (in normal adults, 7-9 hours per night ; also called sleep quantity), consolidation (sleep uninterrupted by arousals or awakenings), or quality that happens despite sufficient time and opportunity for sleep, causing daytime impairment. [4]

Daytime impairment might include fatigue; tiredness; memory, concentration and attention difficulties; anxiety about sleep; mood problems; or irritability. Insomnia diagnosis is often made with the individual history that includes assessment for contributing psychiatric or medical conditions. Sometimes, a sleep log or an actigraphy log are used for 1-2 weeks might be useful. Overnight polysomnography is rarely required, except if the patient history suggests concurrent sleep disorders or initial treatment is not effective. [5]

Cognitive behavior therapy (CBT) and hypnotic drugs are the first choices for insomnia treatment. Primary care doctors could effectively start Cognitive behavior therapy CBT in purpose to treat chronic insomnia. [6] Hypnotics might be associated with tolerance, dependence, and withdrawal symptoms, like rebound insomnia, if medication is suddenly stopped. But researches show paradoxical proof for the progression of tolerance and dependence. [7] Actually, there are no comparative data on the efficacy of short- or long-acting hypnotics for sleep onset or sleep maintenance insomnia, respectively.

Although antihistamines, like diphenhydramine (Benadryl), are commonly used for insomnia treatment, evidence on efficacy and integrity is very limited. [8] In large clinical experiments, melatonin had only small effect on starting sleep latency with minimal effect on the total sleep time. As so, there are very limited data on the efficacy of sedating antidepressants, like trazodone, for insomnia. But they might be recommended in subjects with comorbid depression or with hypnotics treatment failure.

A meta-analysis showed comparable short-term efficacy with hypnotics when used alone and with Cognitive behavior therapy CBT, whilst Cognitive behavior therapy CBT alone caused greater reducing in sleep latency. [9] Similarly, other researches have shown that Cognitive behavior therapy CBT joined with medications administration is better than pharmacotherapy alone, and improvement with Cognitive behavior therapy CBT alone is preserved at 10 to 24 months of follow-up. In some researches, medications therapy performed slightly or no better than placebo on different outcome measures. [10] Subjects with insomnia who don't improve with pharmacotherapy and Cognitive behavior therapy CBT must be turned to a sleep center for extra examination and treatment.

### **RESTLESS LEGS SYNDROME**

Restless legs syndrome is one of the neurologic disorders that affects between 2.5% and 15% of the United States general population. The condition is distinguished by 4 major symptoms: (1) the strong urge to move legs, mostly associated or resulted of inconvenient sensations (e.g., "creepy crawly," aching) in the legs; (2) symptoms that start or worsen during rest or inactivity; (3) symptoms that are partially or completely relieved by movements like walking or stretching; and (4) symptoms that are worse or only appear in the evening or at night.

Restless legs syndrome diagnosis is depended on history findings. Because the case could be a sign of iron deficiency, [11] a ferritin evolution might be needed, even if there is no anemia. A ferritin value less than 50 ng per mL (112 pmol per L) is associated with restless legs syndrome. [12] Restless legs syndrome is familial in near about fifty percent of individuals, although it might be idiopathic or secondary to chronic renal failure, the use of antidepressant, gestation, or neuropathy. Majority of subjects with restless legs syndrome have periodic limb movements while sleeping, which are distinguished by periodic episodes of repetitive, stereotypic movements that predominantly appear in the lower limbs. Subject's bed partners might notice these movements.

Medications administration therapy of restless legs syndrome based on the frequency of symptoms. [13] Dopaminergic agonists are first-line therapy for subjects with nightly, permanent symptoms. common side effects of dopaminergic agonists involve insomnia, nasal congestion, swelling of the limbs, and daytime sleepiness. There have also been reports

of raised tendency toward compulsive behaviors, like gambling, in subjects using these drugs. In individuals with iron deficiency, iron replacement might improve or resolve symptoms of restless legs syndrome. Patients must be forwarded to a sleep clinic if symptoms of restless legs syndrome can't be treated or if increased symptoms (e.g., symptoms begin progressively earlier in the day or develop in the arms and trunk) appear despite adequate treatment.

### **Patients Who Will Not Sleep**

#### **DELAYED SLEEP PHASE SYNDROME**

Delayed sleep phase syndrome is a circadian rhythm disorder distinguished by late sleep start in combination with a late wake-up time, causing increased daytime sleepiness, insomnia, and daytime functional morbidity.<sup>10</sup> Delayed sleep phase syndrome might be genetic and/or socially reinforced (e.g., caused by Internet and computer use, watching television, or social activity at night). A sleep log and actigraphy could confirm the diagnosis if it is cannot be made by the history.

Treatment includes a combination of melatonin (0.3 to 3 mg given 5 hours before bed) and bright light exposure upon awakening. The individual's sleep-wake schedule and melatonin/bright light therapy regimen are incrementally advanced (i.e., moved earlier) every 5 to 7 days until a desired sleep-wake schedule is reached.

### **Patients with Excessive Daytime Sleepiness**

It is hard to distinguish daytime sleepiness from fatigue. Detailed questioning and use of the Epworth Sleepiness Scale<sup>28</sup> (available at <http://www.aafp.org/aafp/2009/0301/p391.html#afp20090301p391-f1>) might be useful, however, subjects might underreport their symptoms. Although individuals with certain sleep disorder, like narcolepsy and OSA, complain from increased daytime sleepiness, it is substantial to exclude insufficient sleep before diagnosing pathologic causes of sleepiness.

### **NARCOLEPSY**

Narcolepsy is a chronic, debilitating case with a prevalence of about 0.02 percent. [14] Clinical symptoms of narcolepsy usually start in the teens or twenties, although diagnosis might be made years later. Onset after fifty years of age is unusual. The classic tetrad of narcolepsy is increased sleepiness; cataplexy; hallucinations upon falling asleep (hypnagogic) and/or upon awakening (hypnopompic); and sleep paralysis (generalized, transient

disability to move or speak during sleep-wake transitions).

Cataplexy is defined as the sudden decrease or loss of voluntary muscle tone following an emotional trigger—often laughter but may be anger or surprise. It could appear as jaw dropping, head nodding, arms dropping to the side, knees sagging, or the patient collapsing to the ground. These attacks might last from a few seconds to a few minutes, and the subject's conscious awareness is preserved. The presence of cataplexy is highly specific for narcolepsy.

Referral to a sleep clinic is needed if narcolepsy is suspected. The ideal sequence of testing for suspected narcolepsy is 1-2 weeks of a sleep log or actigraphy to document sleep duration, then polysomnography is done to check for other sleep problems and document appropriate sleep time and ending the next day with a multiple sleep latency test. The multiple sleep latency test is a daytime nap test to objectively evaluate sleepiness and onset of rapid eye movement (REM) sleep during naps. The combination of a mean sleep latency of less than 8min plus at least two naps with early onset REM sleep suggests narcolepsy diagnosis. [4]

Cataplexy, sleep paralysis, and hypnagogic hallucinations could be treated with REM-suppressing antidepressants, like venlafaxine (Effexor) or other SSRIs. Sleepiness might be treated with appropriate sleep hygiene and scheduled daytime naps. Furthermore, modafinil (Provigil; 200 to 800 mg per day) or stimulants like methylphenidate (Ritalin; 10 to 100 mg per day) or dextroamphetamine (5 to 60 mg per day) could be used. The United States Food and Drug Administration has approved gamma hydroxybutyric acid (sodium oxybate [Xyrem]) for use in individuals with narcolepsy. Sodium oxybate is usually prescribed twice every night because of its short half-life and its efficacy for both daytime sleepiness and cataplexy.

### **OBSTRUCTIVE SLEEP APNEA**

OSA affects 4% of males and 2% of females, with n increased prevalence in the elderly. It is distinguished by partial (hypopnea) or complete (apnea) obstruction of the upper airway despite ongoing respiratory efforts. OSA causes increased daytime sleepiness, cognitive impairment, occupational accident, and motor vehicle crashes. Evidence suggests that OSA also can lead to hypertension. Treatment with continuous positive airway pressure

(CPAP) decreases blood pressure in subjects with OSA, especially those with intense OSA and daytime sleepiness. [15]

Factors that could prompt assessment for OSA include increased daytime sleepiness, obesity, treatment-refractory increased blood pressure, the need for bariatric surgery, atrial fibrillation, congestive heart failure, stroke, nocturnal cardiac dysrhythmias, type 2 diabetes mellitus, and pulmonary hypertension. If obstructive sleep apnea OSA is suspected, a referral for polysomnography is needed. An apnea-hypopnea index (the number of apneas and hypopneas per hour of sleep) of 5 per hour or more suggests an obstructive sleep apnea disorder. An apnea-hypopnea index of 5 to 15 per hour refer to mild disease; 15 to 30 per hour, moderate disease; and more than 30 per hour, severe disease.

The portable home monitoring device may be used instead of polysomnography for diagnosing obstructive sleep apnea in individuals with increased pretest probability of moderate to severe obstructive sleep apnea. 35 Portable home monitoring devices are cheaper than polysomnography and have the extra benefit of individuals being in their normal sleeping environment. Portable home monitoring devices might not be suitable in patients who have congestive heart failure or chronic obstructive pulmonary disease because of lower accuracy, or in those with comorbid sleep disorders like parasomnia. [16]

The most efficient treatment for obstructive sleep apnea is CPAP, which works as a pneumatic splint to the upper airway. Autotitrating CPAP is another choice that automatically regulates the pressure within a set range in response to apneas, hypopneas, snoring, or flow limitation. Subjects who can't tolerate CPAP might be treated with bi-level positive airway pressure. Compliance with CPAP therapy is difficult for some patients. Other treatment choices include reducing weight, positional therapy, surgical approaches, oral appliances, and Provent therapy (a nasal device which has an expiratory valve to create positive end-expiratory pressure to maintain the upper airway open). Choosing one of these therapies based on the severity of obstructive sleep apnea, patient preference, and tolerance.

#### **Patients with Increased Movements During Sleep REM SLEEP BEHAVIOR DISORDER**

REM sleep behavior disorder is distinguished by excessive muscle tone during REM sleep, causing in

the acting out of dreams with possible hurtful outcomes to the patient or bed partner. The disorder is associated with parkinsonian syndromes and other  $\alpha$ -synucleinopathies. It might also be secondary to other neurologic diseases (e.g., spinocerebellar ataxia), sleep disorders (e.g., severe OSA, narcolepsy), or the use of drugs (e.g., selective serotonin reuptake inhibitors). REM sleep behavior disorder is more common in males than in females. It is usually suspected depending on the bed partner observing the patient flailing the limbs, making vocalizations, and sometimes falling out of bed during sleep. REM sleep behavior disorder is often diagnosed using polysomnography, which shows abnormal excessive muscle tone during REM sleep. Environmental safety measures, like removing sharp or fragile objects which near of the bed, must be taken to prevent damage. Melatonin has been shown to be efficient with slowly increasing dosages until appropriate response is obtained (add 3 mg at bedtime every 2 weeks to a maximum of 12 mg each night). Clonazepam (Klonopin), 0.5 to 2 mg at bedtime, is also efficient in more than 90 percent of cases. [17]

#### **PERIODIC LIMB MOVEMENTS**

Periodic limb movements are distinguished by periodic episodes of repetitive and stereotypic limb movements during sleep, predominantly in the lower limbs. If these movements are associated with sleep disorder that causes daytime fatigue or sleepiness, it is then called periodic limb movement disorder. The disorder might be diagnosed only after other reasons of daytime symptoms are rolled out. Majority of patients with restless legs syndrome have periodic limb movements. These movements have also been known to be associated with REM sleep behavior disorder and narcolepsy.

The diagnosis of periodic limb movement disorder is confirmed using polysomnography when the periodic limb movement index is more than fifteen per hour in adults and more than 5 per hour in children. The movements alone do not need treatment, but periodic limb movement disorder could be treated with medications used for restless legs syndrome.

#### **CONCLUSIONS:**

Sleep disorders are very common and can affect sleep quality and quantity, which can cause increased morbidity. Individuals with sleep disorders might be classified into those who cannot sleep, those who will not sleep, those with increased daytime sleepiness, and those with excessive movements during sleep. Although a lot of sleep disorders could be diagnosed

depending on history alone, overnight polysomnography might be beneficial to detect disorders like obstructive sleep apnea (OSA). Near about 10 percent of the United States population has suffered from insomnia that occurred each night for at least 2 weeks; but, many don't discuss this with their doctor.

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