

Evaluating and Managing Insomnia: Non-pharmacological Treatments

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Abstract

For about 40% of Americans, Insomnia is a major health issue that often leads to fatigue, reduced immunity, and dangerous driving. A good night sleep is essential for functioning and performance. It also influences mood, cognition, concentration, fatigue, and healing. Insomnia may be related to medical and psychiatric disorders, shift work, stimulants, travel, anxiety, pain, and other problems (e.g., poor sleep environment). People with insomnia (e.g., difficulty falling asleep, frequent awakenings and daytime drowsiness) tend to rely on alcohol, drugs, and other remedies. Insomnia may reflect sleep apnea or other medical or mental health disorders that require evaluation as well as poor sleep hygiene. Insomnia can be brief, episodic or chronic. Unfortunately, many people assume that insomnia is normal and do not report it to the nurse or seek treatment. Sleep deprivation impairs the person's physical, mental, and cardiac functioning. Often insomnia is treated with medications which may have side effects or be habit forming. Individuals with insomnia need evaluation of the precipitants of insomnia, education about sleep hygiene, and information about non-pharmacological treatments. In clinic and hospital settings, nurses are in a pivotal position to identify sleep problems, educate patients, and refer them for follow up.

Keywords: Insomnia; Complementary therapies; Non-pharmacological treatments

The nurse will have effective approaches to evaluate, educate, and refer people with insomnia and to recommend non-pharmacological treatments (e.g., relaxation, mindfulness, acupuncture).

Introduction

Insomnia is a major health issue in the United States; about 50 million Americans report a sleep disturbance within the past year and 33-40% report insomnia nearly every night [1,2]. It is common among the elderly who use a large percentage of sleep medications and people with mental health or medical disorders, asthma, heart failure, chronic fatigue, pain, and anxiety and those who work nights. Transient insomnia lasts less than a week; short-term insomnia continues from 1-3 weeks, and chronic insomnia (more than 3 weeks) occurs in about 10-15% of cases. Insomnia may be defined as difficulty falling asleep, difficulty maintaining sleep, early morning awakening, or non-restorative sleep. Insomnia creates excess sleepiness which can be hazardous when you drive a car or operate machinery. People self-medicate with over the counter remedies, drugs or alcohol and would benefit from non-pharmacological options and may avoid medications which can be addictive. However, insomnia is rarely reported [3] and so most insomnia remains untreated.

Although most people know what insomnia is, many assume it is normal. Few seek advice from their health care provider and do not know the available non-pharmacological treatments. Whether in a clinical or hospital setting, nurses are in a pivotal position to identify sleep problems, educate patients about interventions, and refer them for follow up. Sleep deprivation impairs the immune system, white blood count, brain function and heart variability [1]. It impacts mood, cognition, and fatigue and delays recovery and healing. Disturbed sleep can also suggest medical or neurological problems that require evaluation (e.g., heart failure, osteoarthritis, Parkinson's disease) [3,4]. (see Figure 1 case example).

The purpose of this article is to review the basic concepts regarding sleep, assessment, management and non-pharmacological treatments.

Normal Sleep

While the specific functions of sleep are debated, it plays an essential role in the health -it is restorative, enhances energy conservation and yet sleep needs vary with age and activity. Sleep is a dynamic process involving brain activity. The functions of sleep impact the brain, immune system, and nerves. Sleep progresses from four stages of Non-Rapid Eye Movement (NREM) that progress to Rapid Eye Movement (REM). In stage 1 or the transitional stage, wakefulness moves to the early stage of sleep (e.g., physiology is altered, peristalsis slows, core body temperature drops and sensory awareness lessens) (Reinoso-Suarez, 2011). Stage 2 is the longest stage and Stages 3-4 are deep restorative sleep. During REM sleep blood pressure and respiratory rates fluctuate and respirations become shallow and dreams can be remembered. REM appears important in memory and potentially sustaining life [5].

A sleep cycle lasts between 1½ to 2 hours as stage 2 and REM increase. The sleep/wake cycle is circadian. As daylight turns to night, melatonin, a natural sedative, is secreted. Aging changes the sleep cycle as time in Stage 3 and REM decrease and stages 1 and 2 increase. The hours of sleep required decrease from 7-8 hours to 6-6 ½ for older adults. Natural remedies that improve sleep include foods with tryptophan, cherry juice, seaweed, kiwi fruit, melatonin and valerian. The DSM V includes diagnoses of insomnia disorder, narcolepsy, breathing related sleep disorders (e.g., apnea and hypoventilation), circadian sleep-wake disorders, REM behavior disorder and restless legs syndrome [2,4].

Case Example:

Ms. J was a delightful well nourished and well developed 58 year old woman with hypertension, pre diabetes, arthritis, and bipolar disorder. She was hospitalized for pneumonia. The nurse observed that she had difficulty falling asleep, staying asleep and complained of feeling tired. She said the hospital was noisy and the nurse provided ear plugs.

Ms. J confirmed that she has had difficulty falling and staying asleep for a couple of weeks, is fatigued, and takes day time naps. She has no nightmares, apnea, or restlessness. She worries about many things. She has taken over the counter pills for sleep. She often drank 1-2 glasses of wine before bed and takes an over the counter (OTC) pill for sleep. During hospitalization the nurse recommended she try sleep hygiene, chamomile tea, progressive relaxation, mindfulness and some of the other CAM interventions. Ms J was interested in hypnosis and cognitive behavioral therapy after discharge. The nurse also recommended reducing alcohol before bedtime.

Course of Treatment

Mrs. J was diagnosed with hypertension, short-term insomnia, arthritis and bipolar disorder and was hospitalized for treatment of pneumonia. She was encouraged to try complimentary/alternative medicine (CAM) strategies during hospitalization and use ear plugs. She found progressive relaxation and mindfulness very useful and she liked chamomile tea. Her pneumonia resolved. However, gall stones were identified on xray and she was scheduled for surgery a month later. After discharge she agreed to: try melatonin or at night for sleep, follow healthy sleep habits, and use a 2 week sleep diary. She takes Metoprolol 50 po at bedtime for hypertension.

Metformin for prediabetes

Aspirin prn for arthritis.

She also agreed to consult her mental health provider about cognitive behavioral therapy (CBT) for anxiety and insomnia treatment

Psychosocial Data: Mrs. J lives at home and her family are in other states. She exercises with walking, going to the gym and golf. She volunteers in her community. She does not keep regular sleep hours and often eats a heavy meal with wine before bed. She watches TV in her bedroom and reads a lot. She worries about family members and their medical illnesses and their financial needs. She does not smoke, rarely exercises, and does not drink coffee. She drinks 1-2 glasses of wine before bed. She denies any other drug use.

Figure 1: Case example: Vignette of Mrs. J.

Screening and Assessment

A Nursing assessment of sleep rests on sleep quality and patterns, medical, substance and psychiatric history. Assessment includes a risk factors and sleep history (e.g., usual sleep patterns, sleep onset and duration, time to fall asleep, frequency of awakenings, and difficulty returning to sleep) (See Case Example in Figure 1). Sometimes if pain, worry, or anxiety are triggering the insomnia, the nurse can recommend some relaxation or improved pain management. Risk factors for insomnia include: traveling, shift work, elderly, pregnancy, menopause, substance abuse, stimulants (e.g., caffeine, nicotine), medications, medical disorders, and pain.

Descriptions of sleep disruptions and self-management strategies are important (e.g., early morning awakening, nightmares, or restlessness). The nurse considers medical or psychological disorders, medications, or behaviors (e.g., snoring, alcohol, sleep apnea) that impair sleep. A sleep history (e.g., sleep schedule, habits, timing, quality, symptoms and sleep duration) assists evaluation. A description of the symptoms during the day and the consequences of insomnia are helpful in identifying precipitants (e.g., daytime sleepiness, fatigue, and irritability). With the assessment, the nurse may be able to resolve the sleep problems with interventions or may work with the health care team to conduct a more thorough assessment for other disorders such as sleep apnea.

Assessment can be improved by using standardized self-report instruments such as an Epworth Sleepiness Scale, Pittsburgh Sleep Quality Index, and Fatigue Severity Scale that provides objective data of sleep and sleep diaries or logs to track sleep wake patterns and daily variations [6]. The Epworth Sleepiness Scale is a self-report tool that rates daytime sleepiness and the chance of dozing or sleeping on a scale (0-never to 3 high chance) for various experiences: sitting and reading, watching TV, sitting inactive in a public place and 4 other activities). A score of 10 or more is sleepy and should suggest an

evaluation or improved sleep hygiene, 18 is very sleepy [7]. The Pittsburgh Sleep Quality Index (PSQI) differentiates older adults' poor and good sleep by measuring sleep quality, latency, duration, disturbances, medication and daytime dysfunction. It uses a 0 to 3 scale (e=negative extreme) [8]. A sum of 5 or more indicates a poor sleeper. It includes items for a bed partner to complete. The Fatigue Severity Scale is a copyright self-rated measure of how fatigue affects motivation, exercise, physical functioning in various medical and neurologic conditions. It is a 9 item tool measured on a 7 point Likert scale (e.g., I am easily fatigued). A high score indicates agreement with the item. The score is the average of all items. People with depression alone score 4.5 but those with fatigue from a chronic disease average about 6.5.

Education and Management

Educating patients about healthy sleep and nonpharmacological interventions is important. Nurses should promote good sleep habits and offer non-pharmacological or behavioral interventions (e.g., relaxation, CAM, sleep restriction, stimulus control, relaxation) and pharmacology to promote sleep in conjunction with behavioral interventions.

Healthy Sleep Habits

Education on healthy sleep habits is an essential and includes a regular sleep/wake schedule, avoidance of stimulants, alcohol and caffeine 4-6 hours before bedtime, and sleep hygiene. Sleep hygiene includes lowering the core body temperature with a warm bath or socks is useful, reducing exposure to bright light before bedtime, and eliminating daytime naps. Recommendations include minimizing light and noise, maintaining a comfortable room temperature and using the bedroom only for sleep (e.g., removing TVs or computers). Sleep recommendations also include: sleep until you feel rested, exercise regularly 20 minutes/day; avoid stimulants, smoking, hunger before bed, reduce worries, and create a cool environment for sleeping [2]. Cognitive restructuring helps to counter any negative thoughts regarding sleep or sleep restriction. Cognitive behavioral therapy has been effective in 60% – 80% of cases.

Many patients prefer non-pharmacological interventions that may be natural, herbal, or behavioral and often without side effects. They may fear becoming addicted to sleep medications or not tolerate them well.

Nonpharmacologic Treatment

Resolve barriers to sleep (e.g., symptoms, medications, worry). If symptoms hinder sleep, treat the symptoms (e.g., headache or cough). Next, consider if medications that disrupt sleep can be withdrawn or replaced. If pain interrupts sleep, improve pain management. If noise is a problem (e.g. in hospitals), consider ear plugs or sound machines. Educate the patient about healthy sleep habits, regular exercise, and elimination of alcohol, caffeine and smoking before bedtime. Stress management or relaxation therapy is useful for reducing anxiety (12). Hypnosis tapes or self-hypnosis can improve sleep. Some people find herbal remedies (e.g., chamomile tea, valerian root, and melatonin) and essential oils (lavender) helpful. Others like warm milk and foods containing tryptophan such as peanuts that help them fall asleep. Literature and resources on healthy sleep habits are useful for many patients.

Progressive relaxation

About 23% of adults with insomnia use relaxation and breathing techniques (Bertisch, 2012). (see Case example in Figure 1) When anxiety or worry interferes with sleep, the patient can learn to use progressive relaxation – to tense and relax muscle groups to gradually relax. The nurse can teach these techniques and some patients will appreciate a book or DVD recording to guide relaxation. Often one starts at the top of the head and systematically focuses on that body part and briefly tenses and relaxes it. When this technique is used properly, it reduces tension and relaxes the patient and improves sleep. Research shows that relaxation improves falling asleep, the quality of sleep and restful sleep [9]. Researchers reported that use of progressive relaxation has led to an 80% decrease of sleep medications. This technique is for the nurse to teach and easy to learn and effectively reduces insomnia.

Mindfulness

Mindfulness (MBSR) is a state of consciousness that is growing in popularity as a method of reducing stress, insomnia and other conditions [10,11]. It focuses awareness in the present moment and focuses one's complete attention. It can combine mindfulness meditation and yoga and is easy to learn and use to reduce stress and thoughts that interfere with sleep quality. The mind is a powerful factor in stress and mindfulness can improve blood pressure and emotional reactivity and it offers a way to relate and take control over life. MBSR has improved sleep outcomes. The nurse can teach or the patient can learn mindfulness online, in books or DVDs.

Hypnosis

Hypnosis is focused attention that creates an inner calm, relaxation, and trance that can alleviate symptoms (e.g., insomnia, anxiety, fear and distress). A trance state naturally occurs when one becomes totally engrossed in a film or game and ignores time and the environment. During a hypnotic trance, suggestions can encourage relaxing and restful sleep and the ability to sleep soundly and ignore distractions. While its medical uses are not completely known, hypnosis offers benefits in insomnia, anxiety, pain relief, anesthesia, and fatigue [6,12]. Hypnosis led to a significant improvement in sleep for those with fibromyalgia [12]. Patients can learn to use self-hypnosis to control insomnia and anxiety. The National Institutes of Health have approved hypnosis as one relaxation method for insomnia. A skilled hypnotist, self-help instructions, and DVDs can provide education or guide hypnosis. Nurses can seek training in hypnosis or refer the patient to other educational resources.

Acupressure

Acupressure is an alternative technique where a finger or body pressure is applied to pressure points, meridians, or energy channels in the body to realign the chakras. Evidence supports the treatment of chronic insomnia with acupressure [13]. Some wrist bands exist for sale that offer pressure on this point. When meridians and the flow of energy become blocked, then imbalance or illness can occur. The goal is to restore health and balance by applying pressure to specific points. Individuals can learn the pressure points that are associated with insomnia or other imbalances and use gentle pressure on these points to relieve symptoms and improve well being. For example, the HT7 wrist, shimen acupressure point is located on the bottom of your foot. If you were to draw a line from both of your ankle bones to the sole of

your foot, the point is where these lines overlap at the midline of the sole (just above the heel of the foot). It's the most tender spot in this area. Pressure on this point can alleviate insomnia. Various written and online instructions and classes exist to teach acupressure.

Cognitive behavioral therapy

Cognitive behavioral therapy (CBT) helps improve sleep by changing irrational thoughts, assumptions, and negative beliefs about sleep and negative thinking patterns and can be done online (e.g., I have to sleep soundly for 8 hours or I will be exhausted) [11,14]. CBT challenges negative beliefs and assumptions about sleep that trigger anxiety, fear, and worry that disrupt sleep. CBT can be used with other approaches (e.g., relaxation) to reduce sleep latency (time to get to sleep) and sleep efficiency. Cognitive restructuring uses guided discovery (e.g., keeping a neutral stance, not interpreting, using Socratic questioning, and allowing the patient to uncover the meaning in the situation) and to uncover core beliefs about sleep. Patients consider the advantages and disadvantages of the belief and asks if it works as a guiding strategy in life.

In this theory, a negative view of the world and automatic and negative thinking patterns (e.g., the future is bleak, the world is barren, and the self is worthless disrupt mood and normal functioning such as sleep) [15]. CBT can help the patient dispel an irrational fear can be so strong that it interferes with treatment and quality of life. After identifying the thoughts that preceded insomnia, patients can learn to control these thoughts by distraction, discussion, or relaxation. Cognitive treatment focuses on here-and-now, problem solving, and rational thinking and can help people meet psychological, educational, and social support needs. It may include homework assignments to identify their irrational thoughts and assumptions about sleep. In many settings, nurses can refer patients to psychology or social work for CBT classes or treatments.

Pharmacologic Treatment

Short term treatment often involves benzodiazepines Zolpidem (Ambien) 10 orally at bedtime and elderly patients typically start at a half dose or Zaleplon (Sonata) 5-10 mg orally at bedtime. Melatonin is produced in the dark hours and may be helpful. Benzodiazepines (e.g. temazepam (Restoril), flurazepam (Dalmane) VERY long acting, triazolam (Halcion), estazolam (ProSom, Eurodin), lorazepam (Ativan), and clonazepam (Klonopin) are commonly prescribed. Short acting benzodiazepines such as Halcion and used with caution as they are addictive. For long term treatment, antihistamines, sedating antidepressants (e.g., trazodone, mirtazapine (Remeron), paroxetine (Paxil) can be useful if the patient is also depressed. These medications are discontinued gradually to avoid rebound insomnia. Clinicians need to be mindful of the potential for tolerance, dependence, and withdrawal with benzodiazepines. If the patient has a history of substance abuse or mental illness, clinicians will be wise to consult with a psychiatrist. The nurse will want to educate patients about when to take the drugs, side effects, and the potential impact on gait and balance particularly for elderly patients. If the symptoms are secondary to a psychiatric disorder (e.g., mood disorder or anxiety) nurses can refer to a psychiatrist or advanced practice psychiatric nurse. Patients with sleep apnea (e.g. heavy snoring) require referral to a sleep specialist. Antihistamines are not usually helpful for long term treatment as people develop tolerance or have side effects drug.

Follow up appointments should be weekly for short term problems to monitor treatment effectiveness, compliance and tolerance potential. Side effects of these drugs require monitoring to see if the patient experiences any dizziness, impaired balance, fall risk, confusion, or other symptoms. Elderly patients should take these drugs starting at a half dose and before bedtime to avoid excessive daytime sleepiness. Fall risk is important so discuss this thoroughly and have the patient discontinue the drug if gait or balance is impaired.

If the insomnia occurs for longer than a month, consider consultation or referral. Nurses are well positioned to educate patients about healthy sleep habits and to recommend non-pharmacological strategies. In many clinical settings patients report difficulty sleeping and the nurse can help them improve sleep hygiene and understand the various treatments available. Untreated insomnia can lead to chronic fatigue or decreased activity and unmanaged sleep apnea can be fatal. Nurses can use the information about sleep hygiene and insomnia treatments to help their patients and themselves improve the quality of sleep.

Conclusion

Insomnia is a common problem for many Americans and can range from a brief to chronic disorder. It is a common problem for shift workers, travelers, and those with pain and anxiety. While many people self-medicate their insomnia with OTC pills, they need evaluation for medical or mental health causes of the problem and education about sleep hygiene and other non-pharmacological treatments available. Nurses who detect insomnia can evaluate the symptoms, educate the person about sleep hygiene and non-pharmacological treatments and refer the patient for further evaluation and management. Without treatment, insomnia can impair the quality of life and pose dangers if the person drives or operates machinery. Encouraging patients to try mindfulness or other complimentary therapies as well as CBT and sleep hygiene is helpful.

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