Sleep Disorders in Geriatrics

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Presentation Goals

- To recognize the prevalence and impact of treating sleep disorders in the geriatric population
- To become aware of the causes and treatments of sleep disorders
- To understand when to refer for a sleep evaluation and what the results mean
NSF 2003 Annual Poll focused on Sleep in Older Adults
Sleep Problems in Older Adults

Reported Symptoms of Sleep Problems by Age
(at least a few nights a week)

- One or more symptoms of a sleep problem
- One or more symptoms of insomnia
- Difficulty taking a nap
- Wake up feeling refreshed
- Wake up feeling unrefreshed
- Snoring
- Pauses in breathing
- Unpleasant feelings in legs

Sleep Profile (at least a few nights a week) by Self-rated Overall Health
- Sleep less than 6 hours
- Sleep 6 to 8 hours
- Poor sleep quality
- Any diagnosis of a sleep disorder
- Any symptom of insomnia
- Difficulty falling asleep
- Wake up a lot during the night
- Wake up feeling unrefreshed
- Daytime sleepiness
- Snoring or pauses in breathing
- Unpleasant feelings in legs
- Any reported sleep problem

- Excellent/Very good health
- Good health
- Fair/Poor health
Sleep disorders—Common concerns

- “I can’t fall asleep or stay asleep”
- “I’m too sleepy during the day”
- “I’m told I do unusual things in my sleep”
Case Example

- A 75-year-old woman complains of difficulty falling asleep. She goes to bed at 9:00 p.m., lies awake for several hours “thinking about things,” and watching the clock, and then feels that she only dozes lightly and intermittently all night. She experiences a “creepy, crawly” sensation in her legs. She wakes spontaneously at 5:00 a.m.
# SLEEP LOG

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**Sleep disorders—Common concerns**

- “I can’t fall asleep or stay asleep”
  - Psychophysiological Insomnia
  - Inadequate Sleep Hygiene (poor sleep habits)
  - Medications (corticosteroids)
  - Neurologic Disorder (Parkinson’s disease)
  - Psychiatric Disorder (anxiety, depression)
  - Sleep Apnea
  - Restless Legs Syndrome
  - **ASK:** about sleep time/wake time, habits (caffeine, alcohol), loud snoring, creeping/crawling sensations
Insomnia: Diagnosis

- Identify and treat underlying cause
- Medications can be useful for those with acute insomnia, anxiety disorders, and to accompany behavioral treatment
- Long term and sole use of medications not recommended for chronic insomnia
- Polysomnography not indicated unless there is concern of a sleep disorder causing insomnia (e.g., obstructive sleep apnea)
Insomnia: Drug Causes

- Caffeine
- Some antidepressants
- MAO inhibitors
- Bronchodilators
- Stimulants
- Corticosteroids
Psychophysiological Insomnia

- People with this disorder have a few nights of insomnia, perhaps due to some major stressor (death in family, new job, divorce) and then learn behaviors to prevent sleep. These behaviors include:
  - Marked overconcern with the inability to sleep with focused absorption on sleep problem: vicious cycle develops!
  - Associating bedroom with not sleeping (conditioned arousal)
- Psychophysiological insomnia may also lead to:
  - Inadequate sleep hygiene
  - Inappropriate use of stimulants or alcohol to promote sleep
Factors Affecting the Development of Insomnia (Spielman)

- **Perpetuating Factors**
  - Conditioning
  - Substance Abuse
  - Poor Sleep Hygiene

- **Predisposing Factors**
  - Personality
  - Circadian Rhythm
  - Age

- **Precipitating Factors**
  - Situational
  - Medical/Psychiatric
  - Medication-related

- **Insomnia**
Stimulus Control

Stop associating bedroom with activities other than sleep

- Go to bed only when sleepy
- Use bed and bedroom only for sleep (no reading, TV watching, eating, etc.)
- Get out of bed and go into another room when you are

CLOSE TO HOME

FOR CRYIN' OUT LOUD! IT'S FOUR A.M. WILL YOU QUIT READING AND GET TO SLEEP?!!
Sleep Restriction

- ...curtailing the amount of time spent in bed to the actual amount of sleep

  - Many people are so worried about how long it takes them to fall asleep that they go to bed extra early (9 PM bedtime but don’t fall asleep until 1 AM!)
  - Using sleep restriction, these people would go to bed at 11 PM or midnight and fall asleep immediately, thereby breaking the cycle of lying awake in bed worrying about going to sleep.
  - Once the cycle is broken, they can go to bed a few minutes earlier each night until they start feeling more rested.
Sleep Hygiene

- **Sleep hygiene education:**
  - Exercising, but avoiding exercise too close to bedtime
  - Regular bedtime and wake time
  - Avoiding daytime naps
  - Avoiding alcohol, caffeine, cigarettes
  - Appropriate room temperature and noise level
  - Light snack, rather than heavy meal at bedtime
  - Avoid taking problems to bed
Restless Legs Syndrome

A neurologic movement disorder of unknown cause

- Irresistible urge to move the legs, usually due to disagreeable leg sensations (creeping, crawling, termites)
- Worse with inactivity and at night
- Relieved by moving or rubbing legs
- Symptoms may involve arms and occur during the day
- Associated with periodic limb movements of sleep (PLMS) in 80% of cases although polysomnography not usually recommended for diagnosis
- Causes insomnia, disturbed sleep, and daytime sleepiness
Restless Legs Syndrome

- **Hereditary RLS:** Family studies suggest autosomal dominant inheritance, with variable penetrance. Earlier disease onset.

- **Symptomatic RLS is associated with:**
  - Iron deficiency
  - Chronic renal failure
  - Pregnancy
  - Neuropathy
  - Spinal cord disease
  - Peripheral vascular disease
  - **ASK** about anemia, check ferritin (< 50 µg/L) even in absence of anemia is associated with RLS symptoms
Restless Legs Syndrome

- **Etiology:** ??? No animal model, no pathologic lesion, normal cortical potentials and EEG
  - Impaired central dopaminergic transmission demonstrated by PET studies (decreased caudate/putamen 18FDopa uptake)

- **Treatment**
  - Dopamine agonists (e.g., pramipexole- Mirapex)
  - Carbidopa-Levodopa (*Sinemet*)
  - Opioids (e.g., codeine, oxycodone)
  - Benzodiazepines (e.g., clonazepam)
  - Antiepileptic drugs (e.g., gabapentin- *Neurontin*)
Sleep disorders- Common concerns

- “I’m too sleepy during the day”
  - Not enough sleep (sleep deprivation)
  - Sleep is disrupted (sleep apnea, periodic limb movements of sleep, frequent awakenings from medical or neurological disorder)
  - CNS pathology (narcolepsy, idiopathic hypersomnolence)
  - Medications
    ASK: about sleep/wake time, awakenings, loud snoring, leg movements, medical conditions, and medications
Case Example

A 70-year-old man with hypertension and diabetes complains of frequent awakenings and daytime sleepiness, which he attributes to the effects of a stroke he experienced 6 months ago. He is a loud snorer, and awakens with a dry mouth. His body mass index is 31, and he has a small jaw, and family history of loud snoring.
Risk Factors, Symptoms, Outcomes, and Comorbid Conditions of Obstructive Sleep Apnea (OSA) in Adults

Demographic Correlates of Increased OSA Prevalence
- Male Sex
- Age 40-70 y
- Familial Aggregation

Risk Factors
- Established
  - Body Habitus
    - Overweight and Obesity
    - Central Body Fat Distribution
    - Large Neck Girth
    - Craniofacial and Upper Airway Abnormalities
- Suspected
  - Genetics
  - Smoking
  - Menopause
  - Alcohol Use Before Sleep
  - Nighttime Nasal Congestion

Outcomes and/or Comorbid Conditions
- Problems With Daytime Functioning
  - Daytime Sleepiness
  - Motor Vehicle Crashes
  - Psychosocial Problems
  - Decreased Cognitive Function
  - Reduced Quality of Life
- Cardiovascular and Cerebrovascular Disease
  - Hypertension
  - Coronary Artery Disease
  - Myocardial Infarction
  - Congestive Heart Failure
  - Stroke
- Diabetes and the Metabolic Syndrome

Young, JAMA, 2004
Epworth Sleepiness Scale

- Easy to administer in clinic setting, available as form on Vanderbilt’s electronic medical record system
- Asks how likely you are to doze in specific situations, such as riding as a passenger in a car, watching TV, or sitting and talking to someone
- Scale of 0-24, with daytime sleepiness indicated by a score of 10 or greater
Fatigue vs. Sleepiness

- Individuals with daytime sleepiness function best when engaged in stimulating activities, when on their feet, not sedentary.

- Individuals with fatigue function best when resting, not exerting physical energy, in sedentary situations.

- However, sleepiness can make fatigue worse, and sleepiness and fatigue may coexist.
How is OSA treated?

- Continuous positive airway pressure (CPAP)
- Weight loss
- Positional therapy (to get person off back)
- Oral appliances: for mild to moderate OSA
- Surgery: Uvulopalatopharyngoplasty (UPPP), maxillofacial surgery, nasal somnoplasty
Continuous positive airway pressure (CPAP) works by using pressurized air to splint open the upper airway, preventing collapse during sleep.

A titration study in the sleep lab is followed by prescribing CPAP for home use.
Only 40-60% of patients use CPAP every night when adherence is measured with usage meters.
Why don’t people use CPAP?

- Unattractive, feel “old”, “sick”, like “ICU patient”
- Claustrophobia
- Annoying and cumbersome to put on and wear
- Uncomfortable
- No clear benefit to using it
- Poor coping styles
Claustrophobia? Cumbersome?
What do we accomplish in sleep clinic?

- Assess for other sleep disorders which may coexist with sleep apnea (e.g., narcolepsy, insomnia). Treatment of sleep apnea “in a vacuum” without paying attention to these other factors is not as successful.

  ✓ Patient is still sleepy due to narcolepsy, insufficient sleep, poor sleep hygiene, etc. May not use CPAP due to lack of perceived benefit.

  ✓ Patient lies awake at night with CPAP on, unable to fall asleep due to restless legs, psychophysiological insomnia, etc.

- Provide intensive education PRIOR to sleep study and AFTER baseline, before CPAP. Education emphasizes importance of treatment and identifies motivators for patient to use CPAP.
CPAP desensitization

- Done in our weekly CPAP clinic
- Instruct the patient to wear CPAP for incrementally increased periods of time, while awake and relaxed
- CPAP desensitization is ideally performed BEFORE in-lab CPAP titration, although patients may not declare themselves as CPAP intolerant until in-lab titration
Common remediable discomforts

- Mask problems: air leaks, skin irritation, removal of mask unintentionally
- Nasal congestion
- Mouth leaks
- Pressure intolerance
- Machine noise
No benefit, “not worth the bother”

Work with patient to identify motivators:

- Daytime Alertness
- Improvement in Fatigue
- Sense of well-being
- Improvement in irritability
- Improvement in mood
- Improved health
Sleep disorders- Common concerns

- “I’m told I do unusual things in my sleep”

- Parasomnias: disorders in which undesirable physical or mental phenomena occur during sleep
  - NREM arousal disorders (sleepwalking, night terrors)
  - REM sleep behavior disorder (dream-enacting behavior)
  - Rhythmic movement disorder (head banging)
  - Sleep Starts (hypnic jerks)
  - Nocturnal seizures may mimic parasomnias
Case Example

A 63-year-old accountant, who had been in the military, experienced combative sleep behaviors for ten years. A psychiatrist diagnosed post-traumatic stress disorder, but treatment was ineffective. He continued to have early morning spells of kicking, punching, screaming, sitting up and jumping out of bed to attack furniture. In the morning, he recalled dreaming of protecting his family from enemy soldiers.
REM Sleep Behavior Disorder

- Patients “act out their dreams” with punching, kicking, or diving from bed
- Prodrome of sleeptalking, yelling, and limb-twitching may precede symptoms
- Behavior discordant with dreamer’s daytime personality
- Pathophysiology: lack of muscle atonia during REM sleep and disinhibition of brainstem centers
REM Sleep Behavior Disorder-Associated Conditions

- Parkinson’s disease and Parkinsonian Syndromes
- Dementia, especially Diffuse Lewy Body Disease
- Narcolepsy
- Medications, including tricyclic antidepressants
- Alcohol withdrawal
- Etiology unknown in 50% of patients
- Parkinson’s disease may occur more than 10 years after diagnosis
REM Sleep Behavior Disorder-
Polysomnography

- Many sleep specialists recommend obtaining video-EEG polysomnography in suspected REM sleep behavior disorder. Diff dx includes sleep apnea, arousal disorder, and seizures.
- Can make diagnosis without capturing episode if REM sleep shows persistently elevated tonic chin EMG with excessive chin or limb twitching.
- Videotaping important to document behavior.
- Extended EEG montage important to exclude epileptic seizures.
pt kicking his legs and moving arms pt just hit
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Summary

- Sleep disorders are important contributors to poor health in the geriatric population.
- Sleep disorders are often treatable and can be diagnosed readily by a sleep evaluation and/or polysomnography.
- Take home message: think about sleep disorders in your patients, especially in those with concerns about daytime functioning and overall health.