

Insomnia in the Elderly

Henry Olders, MD, FRCPC

14 May 1998

Insomnia in the elderly is endemic, distressing, unhealthy, dangerous, and expensive

Epidemiology

Gallup poll: 700 with difficulty sleeping, 300 no difficulty

Occasional insomnia: 27% of Americans

Regular, chronic sleep problem: 9%

72% of insomniacs wake up feeling drowsy or tired, 67% wake up in the middle of the night, 57% report difficulty going back to sleep after waking up, and 56% have initial difficulty falling asleep.

40% of insomniacs self-medicate with either alcohol or OTC medications.

Psychological impact

From the Gallup poll

Chronic insomniacs particularly report impaired ability to concentrate during the day, memory problems, poorer ability to copy with minor irritations, poorer capacity to perform needed tasks during the day, less enjoyment in family and social relationships, and feel less well physically.

Other studies

Insomniacs have more chronic psychological distress. In a general practice setting, 56% of insomniacs were significantly dissatisfied with life; 40% described themselves as anxious, oversensitive, emotionally labile and having many problems. Depression and anxiety are frequent.

Effects on health

Persistent insomnia is both a risk factor for and a precursor of major depression.

Chronic insomnia treated with sleeping pills may increase death rates. A study published in this month's issue of *Biological Psychiatry* reports that people who use sleeping pills daily are 29% more likely to die during a six-year follow-up period, compared to non-users, after controlling for 31 risk factors, such as age, exercise, smoking, heart disease, and cancer. This increased risk is similar to the risk due to smoking one to two packs of cigarettes per day.

Dangerousness

Long-term insomniacs have 2.5 times more automobile accidents than good sleepers do. Sedative-hypnotic users visit emergency rooms more often; if elderly, they have a significantly increased risk of hip fracture.

Costs

Insomniacs utilize health resources more, take more sick leave, are more likely to have substance abuse disorder, and of course take medications to help sleep, some of which impair next-day performance. 16.5% of Dutch elderly use sedative-hypnotics regularly.

Review of costs of insomnia in U.S., including costs of medical treatment and drugs, reduced productivity, increased absenteeism, accidents, hospitalization, psychological distress, and alcohol consumption: approx. \$100 billion annually.

As individuals age, changes in sleep patterns may make insomnia more likely

- Shorter sleep
- Lower sleep efficiency
- Less slow wave sleep, which may affect how the individual perceives the quality of their sleep
- More awakenings
- More stage 1 sleep
- Retirement, medical illness, boredom may be rationales for a person spending more time in bed.
- Some individuals sleep in order to escape painful emotions such as guilt or depressed mood.

Where insomnia fits (Sleep Disorders in DSM-IV)

Dyssomnias

Primary insomnia

Also called psychophysiological, conditioned, or learned insomnia.

Hypersomnia

Narcolepsy

Breathing-related sleep disorder (eg obstructive sleep apnea)

Circadian rhythm sleep disorder

eg, delayed sleep phase

jet lag

shift work

Dyssomnias not otherwise specified

eg, restless legs syndrome

Idiopathic periodic leg movements (nocturnal myoclonus)

Parasomnias

Nightmare disorder

Sleep terror disorder

Sleepwalking disorder

Differential Diagnosis

Comorbid psychiatric disorders which may trigger or aggravate insomnia:

Mood disorders

Anxiety disorders

Bereavement

Disorders of cognitive impairment (eg dementia, delirium)

Symptoms of medical conditions:

Pain or itching may raise the threshold for sleep

Insomnia induced by medical conditions:

Cardiovascular

COPD

Endocrine and metabolic disorders

Febrile illnesses and infections

Inflammatory bowel disease

Neoplastic disorders

Urinary frequency

Insomnia induced by medications or drugs:

Antidepressants

SSRI's

MAO inhibitors

Antihypertensives

ACE inhibitors

Clonidine

Beta-adrenergic blockers

Propranolol

Atenolol

Pindolol

Diuretics

Methyldopa

Reserpine

Antineoplastic agents

Medroxyprogesterone

Leuprolide acetate

Goserelin acetate

Pentostatin

Daunorubicin

Interferon alpha

Autonomic agents

Anticholinergics

Cholinergic agonists

Cimetidine

Bronchodilators

Terbutaline

Albuterol

Salmeterol

Metaproterenol

CNS stimulants

Amphetamines

Caffeine (OTC products)

Anacin

Excedrin

Cough/cold preparations

Methylphenidate

Nicotine

Sympathomimetics

Theophylline

CNS depressants

Alcohol

Anxiolytics

Hypnotics

Opiates

Decongestants

Phenylpropanolamine

Pseudoephedrine

Hormones

Corticotropin

Cortisone

Oral contraceptives

Progesterone

Thyroid hormone

Others

Digoxin

L-dopa

Evaluation of insomnia

Do not initiate an extensive workup unless reasonably good sleep hygiene measures are in place.

History

Quality of sleep

Time of going to bed

How long to fall asleep

Waking during the night

- Reasons for waking
- Number of times
- How quickly to fall asleep again

Time of waking in the morning

What does the person do after waking?

Time of getting out of bed for the day

Daytime drowsiness/sleepiness

Very important; failure to identify and appropriately refer cases who subsequently have accidents can engender civil, possibly criminal liability.

- How often
- What time of day or evening
- How distressing
- Accidents/near-accidents due to drowsiness

Fatigue/tiredness (differentiated from drowsiness/sleepiness)

- How often
- What time of day or evening
- How distressing
- Impact on life (work, play, relationships)

Daytime naps

- What time of day
- How long
- How often
- How long to fall asleep

Use of sleeping aids

- Prescribed medications (including somebody else's pills)
- OTC drugs
- Alcohol or other substances

Frequency of sleep problems

- Difficulty falling asleep
- Difficulty staying asleep

- Waking too early
- Inability to get up

How distressed by their sleep problem

Sleep habits when younger (when working and doing well)

Use of stimulants (coffee, tea, caffeinated soft drinks)

Attitudes towards sleep

- If you feel sleepy, does that always mean you're not getting enough sleep?
- If you feel fatigued, does that mean you need more sleep?
- If you sleep poorly at night, do you make up for it by sleeping late or by taking a long nap?
- If you've slept poorly, would you go in to work late or call in sick?

Are you depressed?

Sleep Log or Diary

Ask the individual to write down daily, for a period of 2 weeks:

Sleep medications taken

Time into bed

Time of "lights out"

How long to fall asleep

How many awakenings

How many minutes awake

Time of morning waking (after which couldn't sleep)

Time of arising

Time of returning to bed, if applicable

Time of arising for the day

Daytime naps: when, how long

Sleepiness during the day: rate from 1 to 5

Fatigue during the day: rate from 1 to 5

Coffee (# of cups); tea; caffeinated soft drinks

Physical exam, lab tests, consultations

As indicated, based on the differential diagnosis.

Relationship between primary insomnia, fatigue, depression

Insomnia may be caused by trying to sleep too much

Both insomniacs and most insomnia researchers believe that insomnia means insufficient sleep. As a result, insomniacs go to bed earlier, stay in bed later, and nap. Studies show, however, that insomniacs in fact sleep as much as normals, and then underestimate the amount they actually sleep.

Elderly frequently increase their time in bed, even though their sleep need decreases with age. Their attempts to sleep longer may be triggered by illness, by retirement, or simply by boredom. Additionally, unhappy people attempt to escape from distressing feelings by sleeping.

When time in bed exceeds physiologic sleep need, insomnia ensues.

If the person gets excessive REM sleep, eg by sleeping in the morning after sunrise, fatigue or depression may ensue

Because REM sleep follows a diurnal variation, with its peak in the morning at around 8 am (the timing is probably related to sunrise), one can increase total

amount of REM sleep by sleeping late, even if total sleep time is unchanged.

Although REM sleep is essential, too much of it causes feelings of chronic fatigue, and may even cause depression in predisposed individuals.

When insomnia and/or fatigue are interpreted as being symptoms of insufficient sleep, attempts to sleep more result in a vicious circle

Again, many patients as well as researchers confuse sleepiness and fatigue. As a result, fatigue induced by excessive REM sleep is interpreted as meaning the person is not getting enough sleep. As proof, the insomniac cites his or her poor quality sleep, and attempts to deal with the fatigue by trying to sleep even more.

To improve insomnia, spend less time in bed; to improve fatigue or depression, get up earlier

The biggest obstacle to successful outcome is ingrained attitudes

Treatment issues

Sleep hygiene measures

- Arise at the same time each day.
- Limit daily in-bed time to "normal" amount.
- Discontinue use of drugs that act on the central nervous system; eg, caffeine, nicotine, alcohol, and stimulants.
- Avoid daytime napping except when sleep diary indicates a better night's sleep as a result.
- Establish physical fitness with a routine of exercise early in the day, followed by other activity.
- Avoid evening stimulation; substitute either listening to the radio or leisure reading for watching television.
- Try a warm 20-minute body bath or soak near bedtime.
- Eat on a regular schedule; avoid large meals near bedtime.
- Practice an evening relaxation routine.
- Maintain comfortable sleeping conditions.
- Spend no longer than 20 minutes awake in the bed.
- Adjust sleep hours and routine to optimize daily schedule and living situation.

Sleep restriction/sleep compression

Start with the person's own estimate of how many hours of sleep they get in 24 hours; they should then spend only that many hours in bed each night.

Once they have been sleeping well for a week at a given stage, increase the time in bed by a half-hour.

Daytime drowsiness can be relieved by short naps.

Early rising

Symptoms of fatigue or depression can be improved by reducing REM sleep.

Although antidepressants, exercise, psychostimulants, and ECT suppress REM sleep, avoiding sleep after sunrise is an effective, inexpensive, and safe method to decrease REM sleep.

Daytime sleep

Short naps are refreshing, relieve drowsiness, and increase alertness and feelings of wellbeing. Longer naps can induce sluggishness and torpor, and may also impair nighttime sleep.

Approach: when patients feel drowsy or sleepy, they should have a brief nap, ie lie down for not more

than 15 or 20 minutes (a kitchen timer may be useful for waking up). If the person has not fallen asleep after 15 minutes, they do not need a nap; if they fall asleep after 5 or 10 minutes and thus sleep for only a few minutes, they will be able to get going again easily.

Light

The most important cue to adjusting the biological clock is the length of the day/night cycle.

Individuals who are insufficiently exposed to light, especially morning light, may develop delayed sleep phase syndrome. This can occur if people keep their bedrooms dark, or possibly even if windows are small or views obstructed with trees, fences, walls, etc.

Approach: encourage patients to keep their drapes/blinds open at night while they're asleep. When buying or renting housing, look for bedrooms that receive plenty of natural light.

Caffeine

Caffeine may induce its own metabolism, thus individuals who use small amounts, or who use it irregularly, may have more severe and longer-lasting effects, such as insomnia or anxiety, than those who consume larger quantities.

Caffeine acts as a mood elevator: in the ongoing Nurses' Health Study involving about 90,000 nurses in the U.S., those who drank no coffee committed suicide at 2 1/2 times the rate of those who drank 2 or more cups daily.

Approach: encourage consistent caffeine consumption, eg 2 cups coffee daily.

Exercise

Vigorous cardiovascular (ie aerobic) exercise of at least 30 minutes stimulates endorphin production.

Useful treatment for depression and fatigue.

If not engaged in too near bedtime, exercise can also improve sleep.

Hypnotic medications

Benzodiazepines can be dangerous in elderly patients: risk of falls, automobile accidents, cognitive impairment, disinhibition, depression, and dependence.

If you must, prescribe BDZ for a short time only (3 or 4 weeks maximum) and to be taken only 3 or 4 times per week.

For dependent individuals, taper very gradually.

To avoid risk of depression, trazodone (25 or 50 mg hs) is an effective hypnotic, even though relatively ineffective as an antidepressant.

Tricyclic antidepressants

Avoid in elderly: anticholinergic effects impair memory; risk of orthostatic hypotension, effects on the heart

Methylphenidate

When daytime sleepiness, depression, or fatigue are prominent, especially in medically ill patients in whom antidepressants may be problematic, consider methylphenidate.

By inhibiting daytime sleep, the patient may experience better nighttime sleep.

Usual starting dose is 5 mg bid, in the morning and at noon; increase at weekly intervals up to maybe 15 or 20 mg bid (some people reportedly go up to 70 or even 90 mg daily).

SSRI's

May be sedating in some individuals.

Preferred treatment for panic disorder, phobic disorder; if these interfere with sleep, will help insomnia.