



SALVADOR DALÍ *Sleep*

Sleep and Sleep Disorders in Women

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Objectives

- Learn about sleep and sleep problems in women across the lifespan
- Outline the most important sleep disorders in women
- Discuss clinical significance of sleep disorders in women

Why is it important to learn about sleep disorders?

- Very frequent complaints
- Leading symptoms
- Quality of life
- Severe consequences

- Co-morbidity with medical and psychiatric disorders

Prognostic factor? Precipitating factor?

- Public health relevance

Sleep: bridge between
somatic and psychological
functioning,

with significant social
influences

Frequent and important sleep disorders

- Sleep- related movement disorders
 - Restless legs syndrome
 - Periodic limb movements in sleep
- Sleep- related breathing disorders
 - Sleep apnoe
- Insomnia(s)

ICSD- 2, - 8 major categories

- Insomnia
- Sleep related breathing disorders
- Hypersomnias of central origin
- Circadian rhythm sleep disorders
- Parasomnias
- Sleep related movement disorders
- Isolated symptoms and normal variants
- Other sleep disorders

Gender differences in the prevalence of sleep disorders

Women
Insomnias
Parasomnias: nightmares, sleep-related eating disorders
Sleep-related movement disorders: RLS

Man
Hypersomnias: narcolepsy, Kleine-Levin sy.
Ciircadian rhythm disorders
Parasomnias: REM-sleep behav. disorders., sleep paralysis, sleepwalking, night terror, enuresis nocturna
Sleep-related breathing disorders
Sleep-related movement disorders: PLMS, bruxism

EXCLUSIVE: MOQTADA AL-SADR SPEAKS



Newsweek

May 8, 2006

NewsweekInternational.com

HEALTH
FOR LIFE



Why Women Can't Sleep

PLUS

- Pregnancy & Depression
- HPV: A 'Cancer Shot'?
- What to Do About Menopause

ILLUSTRATION BY F. SCOTT SCHAFER

With Harvard Medical School

Sleep disruption in women – a bio-psychosocial problem

- Objective vs. subjective gender differences
- Hormonal influences
- Menses, pregnancy, menopause
- Mental disorders
- Social factors, children, elderly

Sleep Disorders in Women

NSF Poll (1998)



- 31 % report daytime effects of sleep disturbance; 1/4 of women report significant daytime sleepiness;
- 74 % report sleeping < 8 hours / night
- 27 % report impaired job performance
- 24 % impaired ability to care for family
- 14 % reported falling asleep while driving

Sleep Disorders in Women: NSF Poll (1998)

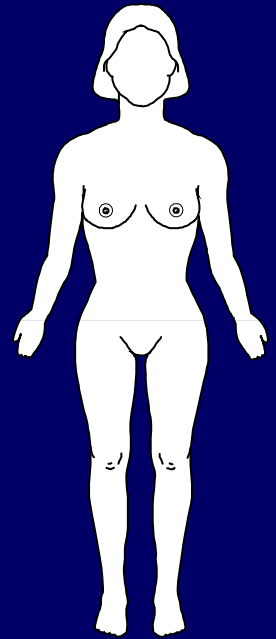
- 53% often / always experienced insomnia during previous month
- 13% used prescription sleep meds
- 8% used alcohol for sleep

Hormonal Effects on Sleep

- Inconsistent reported effects on SWS
- Sleep architecture changes dependent upon exogenous vs endogenous hormones

Hormonal effects

- ESTROGEN
 - ↑ REM
 - ↑ Total sleep time
 - ↓ sleep latency, nighttime awakenings
- PROGESTERON:
 - NREM
 - Benzodiazepine-like effect
 - Sedativ effect
 - ↓ sleep latency, awakenings



Menstrual period and sleep

- Large individual differences: 15% of woman vulnerable
- Impact on body temperature
- Circadian changes (like “jet lag”)
- Pain, discomfort
- Mood, PMS

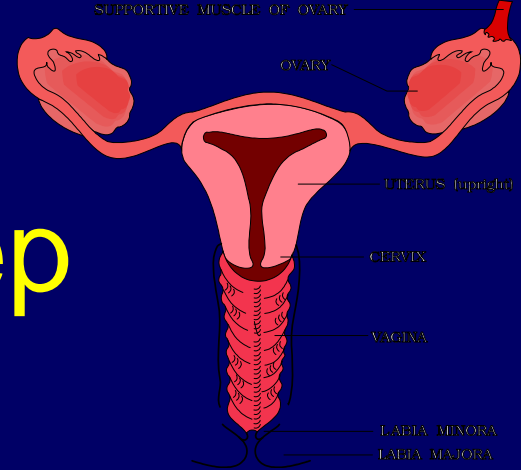
Sleep and the Menstrual Cycle

- Overall: Increase in subjective sleep complaints late luteal phase:

↑ SOL, WASO = ↓ SE, EDS

- *But* insomniacs do not have menstrual cycle-related differences in SOL, SE
- Dysmenorrhea associated with decreased SE

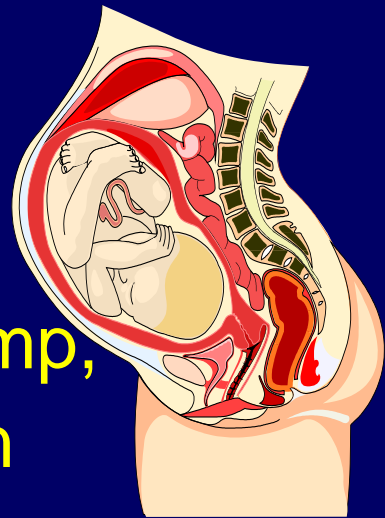
PMS and Sleep



- Excessive daytime sleepiness correlated with PMS symptoms (bloating, cramps, etc); sleep onset and maintenance insomnia
- Changes in sleep architecture: ↓SWS (persists), ↓REM, ↑SOL, ↑WASO = ↓SE
- Menstruation-linked periodic hypersomnia:
 - Begins around time of menarche
 - Recurrent 6 - 10 day episodes of EDS

Sleep and Pregnancy

- Increase in subjective sleep complaints
changes in sleep architecture
- Etiologic factors include:
 - Endocrine changes:
 - Progesterone: ↑ fatigue, ↑ body temp,
↑ respiratory rate, frequent urination
? role prolactin, cortisol
 - Physiologic changes:
 - ↑ abdominal mass, ↑ vascular load



Sleep in Pregnancy: Changes in Sleep

ARCHITECTURE

- Initial changes 12 weeks; ↑ 3rd trimester & early postpartum weeks
- Slight decrease REM
- + / - Decreased SWS
- Decreased SE
- Increased WASO

Sleep in Pregnancy: Changes in Sleep (cont.)

CLINICAL

- First trimester fatigue, sleepiness
- Poorer sleep quality
- Insomnia (maintenance)
- Increased daytime sleepiness
- 97% of women fail to sleep through night third trimester

Sleep and Pregnancy: Primary Sleep Disorders: Snoring, OSA

- Etiology multifactorial, eg. ↓ O₂ sat in supine position; ↑ CO₂ related to hyperventilation / increased tidal volume; nasal congestion
- 30% women report onset of snoring in pregnancy (second trimester)
- ↑ snoring associated with fetal outcomes, preeclampsia

Sleep and Pregnancy: Primary Sleep Disorders: RLS/PLMD

- Restless Legs Syndrome/ Periodic Limb Movement Disorder: may be associated Fe deficiency anemia, diabetes, uremia; symptoms usually subside postpartum
- 15-20% women develop RLS in third trimester
- More prev after multiple pregnancies

Sleep and Pregnancy: Other Issues

- Sleep problems associated with pregnancy complications: Preeclampsia, nocturnal backache / leg cramps, GER
- Sleep and fetal risk:
 - ? association of sleep deprivation and premature labor;
 - snoring associated with FGR, ↓ Apgars, 43% snorers vs 22% non-snorers fetal complications

Postpartum Sleep

- 30% new mothers report disturbed sleep
- SE in first 2-4 weeks lower than third trimester; average 2 hrs WASO
- First-time mothers' sleep most disturbed
- Women with premature infants have ↓ TST, ↑ WASO, alterations melatonin, cortisol

Postpartum Depression and Sleep

- Studies reporting nighttime labor & sleep disruptions (3rd trimester) associated with depressed mood after childbirth
- Sleep/wake patterns associated with depressed mood, emotional lability across postpartum period
- Shortened REM latencies associated with depressed mood

Sleep and Menopause



- Increase in SOL; 20% report sleeping < 6 hrs
- Difficulty in sleep maintenance
- Role of nocturnal “hot flashes”: more frequent arousals/ awakenings (q8 vs 18 min), ↓ SE, increased SWS
- Social changes, other medical problems

Sleep and Menopause

- OSA: increased prevalence and severity post-menopausal
- HRT may improve SE; OSA symptoms
- Insomnia may become conditioned despite hormone replacement therapy; role of various replacement protocols



Symptoms of OSA

- Loud snoring
- Breathing pauses
- Excessive daytime sleepiness
- Non-restorative sleep
- Dry mouth and headaches

Upon awakening



Neuropsychological symptoms

- Cognitive problems
- Irritability, short fuse
- Depression
- Anxieties



Symptoms of OSA in women

Symptoms

Assoc. Clinical features

- Depression
- Insomnia
- Palpitation
- Daytime tiredness
- Tension
- Morning headaches

- Hypothyreosis
- Anxieties
- Nightmares
- Sleep-related hallucinations
- RLS

Sleep Disorders in Women: Insomnia

- Results in significant direct and indirect health care costs
- Prevalence: NSF poll (1995)
 - 49% adult US population occasional;
 - 12% chronic
- 1.5 - 2X more common in women



Medical disorders

- Endocrine disorders, POS
- Breast cancer
- Diabetes? – gender differences?
- Cardiovascular disorders (menopause)
- Aging
- Iatrogenic sleep disorders: medications, hospitalization

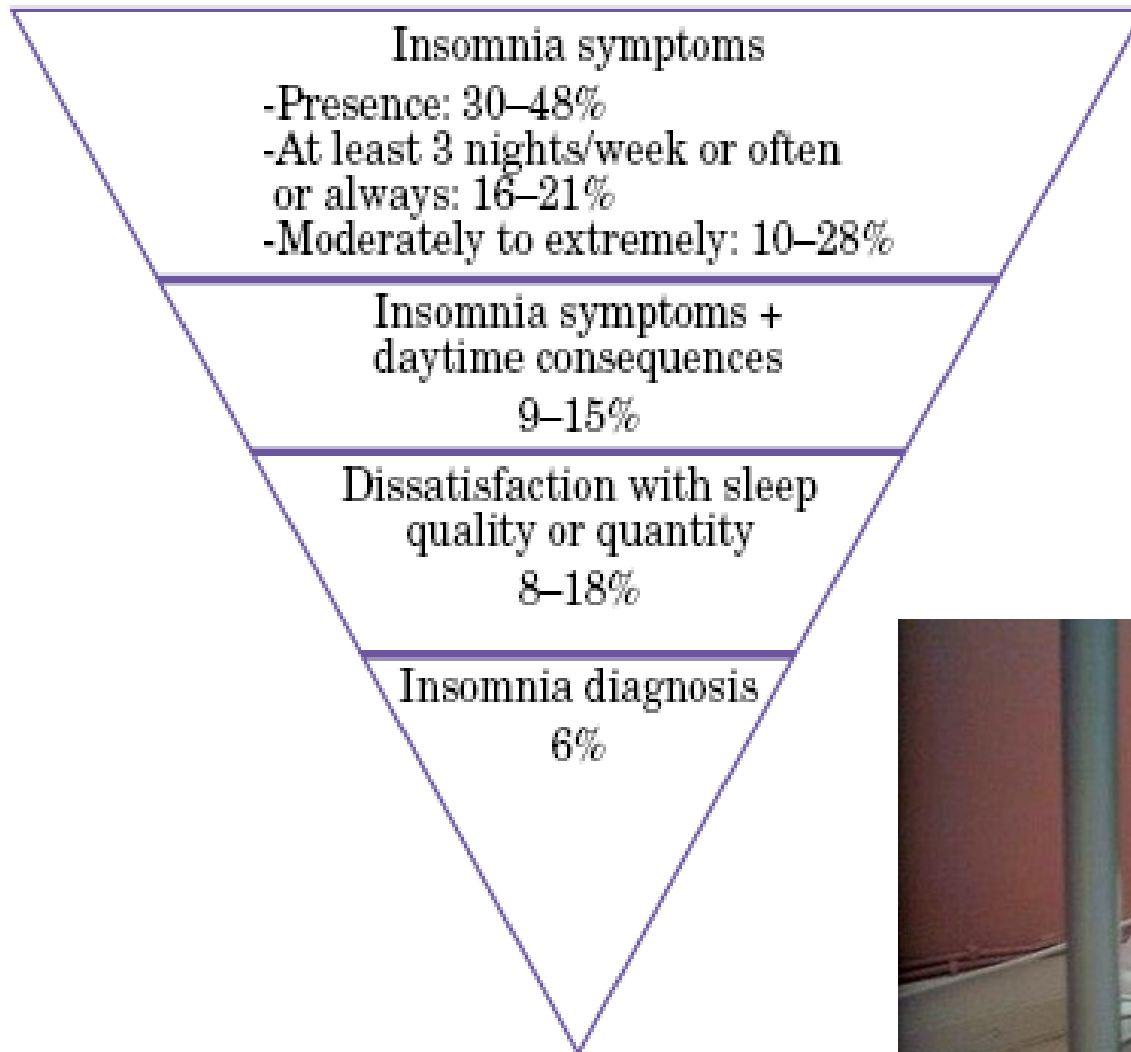
Significance of insomnia

- Individual effects: nighttime, daytime symptoms and quality of life. Mortality?
- Societal effect: impact on relationships and social life, socio-economical costs (burden of illness)

Epidemiology

- Until recently, lack of large studies
- Development of valid screening tools
- Major sleep disorders: insomnia and apnoe
- Gender differences: woman ins, man apnoe? Special populations: elderly,
- Every 3-4. adult has a sleep problem?
- Everyone will have a sleep problem???

Prevalence of insomnia symptoms



Meta-analysis of the prevalence of insomnia

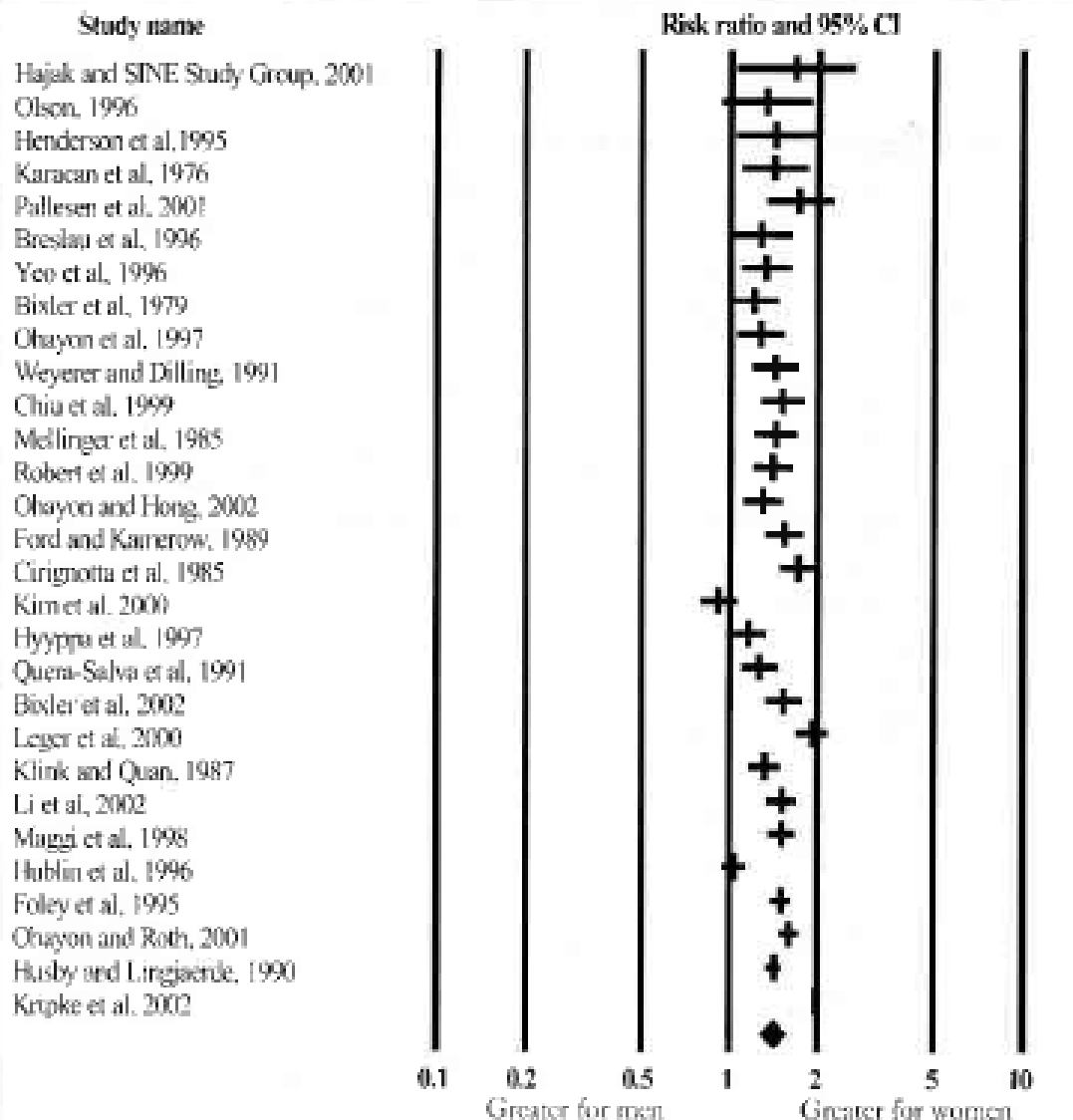


Figure 1—Forest plot of risk ratio (random-effects model) among 29 studies to compare the prevalence of insomnia between men and women.
 *These studies are listed according to their weights (from low to high)
 The black box at the bottom is the overall risk ratio.

Zhang, 2006

Psychophysiological insomnia

- Learned /conditional/primer insomnia
- 15 % of chronic insomniacs
- Chronic anxiety with somatization
- Associations which interfere with sleep
- Difficulties falling asleep
- No other DSM diagnosis
- Often comorbid with other (psycho)somatic conditions and drug abuse

Insomnia and depression

- Leading symptom of depression
- PSG features of depression
- WHO Collaborative Study (Üstün et al, 1996): 26 000 pt 27 % sleep complaint, half of them mental health problem
- Breslau et al (1996): 1000 pt, longitudinal study. 2 weeks of insomnia is a predictor of major depression

„Snoring Spouse Syndrome”

- women 22%, men 7% reported sleep disruption because of snoring of spouse
- Insomnia
- Morning headaches
- Daytime sleepiness

(NSF 2000)