Cognitive Behavioural and Chronotherapeutic Interventions for Insomnia

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- What is insomnia?
- Treatment of insomnia
- Models of implementation

What is insomnia? - ICD-10 diagnoses

- F51.01 Primary Insomnia
- F51.02 Adjustment Insomnia
- F51.03 Paradoxical Insomnia
- F51.04 Chronic insomnia**
- F51.05 Insomnia due to other mental disorder
- F51.8 Other sleep disorders not due to a substance or known physiological condition
- G47.0 Insomnia unspecified
- G47.01 Insomnia due to medical condition

Primary vs. Secondary Insomnia

- In 20-25% of cases insomnia exists in isolation and is the primary disorder (perpetuating dimension only)
- Usually there is some secondary relationship with a 'primary' condition (precipitating dimension only)
  - Psychiatric illness: depression, anxiety
  - Medical illness: chronic pain
  - Medications with alerting effects

Primary vs. Secondary Insomnia

- However, treating the 'primary' condition often does not improve sleep
- Insomnia develops a degree of independence over time
- Now thought of as a *comorbid* disorder rather than secondary

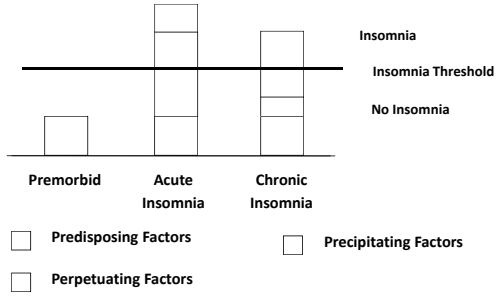
What is insomnia? DSM-5 Insomnia Disorder

- Dissatisfaction with sleep quality or quantity (difficulty initiating or maintaining sleep)
  - Despite adequate opportunity
  - At least 3 times per week for >3 months
- The sleep disturbance causes clinically significant distress or impairment in functioning
- Sleep disturbance is not better explained by and does not occur exclusively during the course of another sleep, medical, or psychiatric disorder or as the result of a substance

What is insomnia?

- Episodic (acute) insomnia
  - Duration >1 month but <3 months
  - 25-35% of population
- Chronic insomnia
  - Duration >3 months
  - 10-15% of population

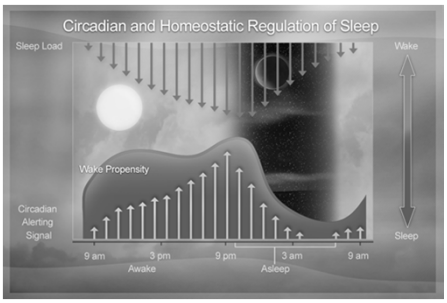
Behavioral model of insomnia



Key dimensions of insomnia

- Dimension 1: Precipitating factors: to what extent are the 'triggers' still present?
- Dimension 2: Perpetuating factors: what factors are maintaining the insomnia?

Insomnia and the 2-process model of sleep regulation



(Borbely et al 1982)

Insomnia and the 2-process model

- Homeostatic sleep drive (Process S)
  - During wakefulness a drive for sleep builds up that is discharged during sleep
  - As sleep drive increases, so do subjective feelings of sleepiness
  - Can be weakened by behaviors: napping, excessive time in bed, etc.

Insomnia and the 2-process model

- Circadian rhythms (Process C)
  - Strength of rhythms can be weak (e.g. irregular sleep schedule)
  - Misalignment is often overlooked in the assessment of insomnia
  - Delayed sleep phase most common
  - Clues that there is a delayed phase component
    - Sleep onset is faster if bedtime is later
    - Tend to go to sleep later on weekends / vacations

Insomnia and the 2-process model

- Does the insomnia occur if they follow their circadian tendency?
- Diagnosis of circadian rhythm sleep disorder vs. insomnia with circadian tendencies
  - Delayed sleep phase syndrome
  - Advanced sleep phase syndrome

Process W: conditioned hyperarousal

- Manifestations of hyperarousal
  - Somatic
  - Emotional
  - Cognitive
  - Cortical

What is insomnia?

- Begins due to precipitating factors
- Maintained by perpetuating factors
  - Conditioned hyperarousal
  - Inadequate buildup of sleep drive
  - Weak or misaligned circadian rhythms
  - Behavioral and cognitive factors

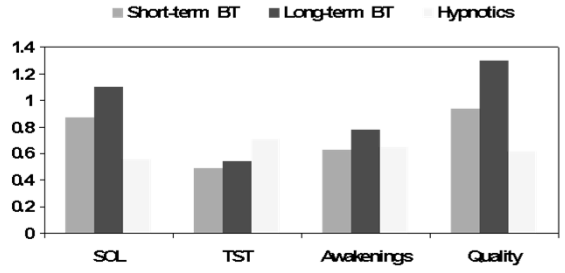
Treatment of insomnia

- Sleep medications
  - Pros: widely available, many medications to choose from, demonstrated, rapid efficacy
  - Cons: often not effective, potential for side effects or drug-drug interactions, tolerance, requires long-term use

Treatment of insomnia

- Cognitive behavioural treatment of insomnia (CBT-I)
  - Stimulus control
  - Sleep restriction
  - Cognitive strategies
  - De-arousal techniques
  - Sleep hygiene

Efficacy of behavioral[1] and hypnotic[2] treatments

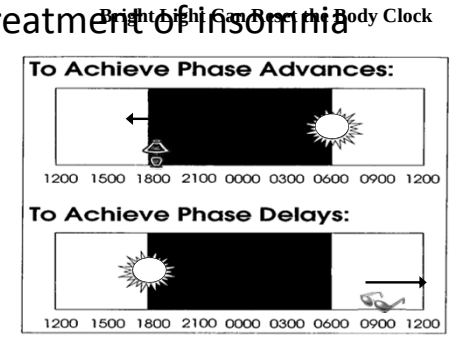


([1]Murtagh & Greenwood, 1995; [2]Nowell et al., 1997)

Treatment of insomnia

- Chronotherapeutic interventions
  - Setting a regular sleep/wake schedule
  - Engaging in other activities in a routine (e.g. meals, physical activity)
  - Light therapy
  - Melatonin
    - Hypnotic or chronobiotic?

Treatment of insomnia



Treatment of insomnia

- CBT-I is considered the gold standard treatment
  - Better long-term outcomes
- Problems
  - Lack of awareness that it exists
  - Lack of trained providers
  - Not always clear how to implement
  - Volume of patients

Models of implementation

- Increase number of trained providers
  - Training in graduate school (e.g. externships)
  - Post-doctoral fellowships
  - Clinical workshops
  - Clinical supervision/consultation
- Who can learn to deliver CBT-I?

<u>Important to keep CBT-I in sleep medicine</u>

Models of implementation

- Group CBT-I
  - Individual intake
  - 6-8 patients per group
  - 90-minute weekly sessions
  - NOT just a psychoeducation group
    - Group process critical

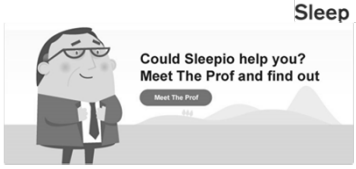
Models of implementation

- Group CBT-I
  - Pros:
    - More efficient means of delivery
    - Added interpersonal elements of treatment
    - Demonstrated efficacy (Koffel et al, 2014)
  - Cons:
    - Less ability to tailor treatment
    - Group dynamic not always positive!

Models of implementation

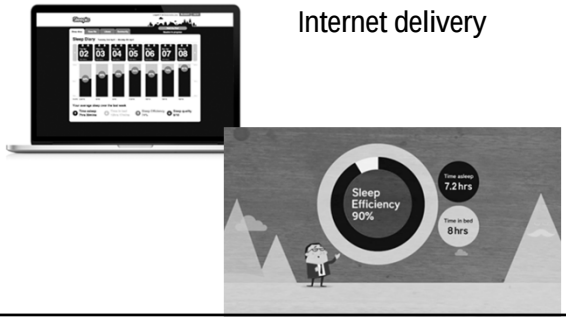
- Internet delivery

SHUTi™
Sleep Healthy Using the Internet



Models of implementation

Internet delivery



Models of implementation

- Internet delivery
  - Not just self-help materials online
  - Highly interactive
  - Sleep diaries kept online
  - Treatment components delivered using multimedia approaches

Models of implementation

- Internet delivery
  - Pros:
    - Widely available
    - Self-paced
  - Cons:
    - Lack of assessment / triaging
    - Limited provider oversight

Models of implementation

- Telemedicine
  - Use of video equipment to deliver treatment remotely
  - Can be either individual or group
  - Otherwise the same as in-person treatment

Models of implementation

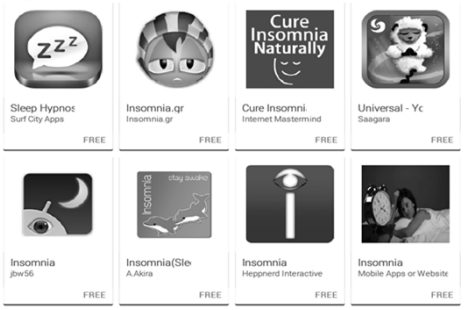
- Telemedicine

Models of implementation

- Telemedicine
  - Unique issues:
    - Cross-border licensing: where is the clinical encounter occurring?
    - Safety: SI / HI
    - Privacy / information security

Models of implementation

- Mobile applications

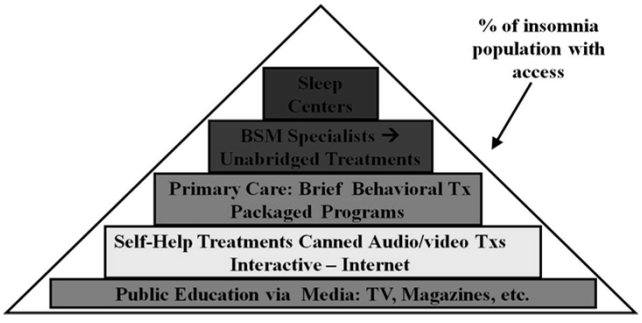


Models of implementation

Models of implementation

- Mobile applications
  - Pros:
    - Access
    - With individuals all day
  - Cons:
    - No assessment of comorbidities
    - Entirely untested

Stepped care model



Courtesy of Jack Edinger

Summary

- Insomnia is a highly prevalent sleep disorder that poses a significant public health burden
- There are several options for treating insomnia
  - CBT-I is the optimal front line approach
- Implementation can be through a variety of means to increase access and provide comprehensive sleep medicine services