

Sleep Hygiene and Behavioural Treatment of Sleep Difficulties

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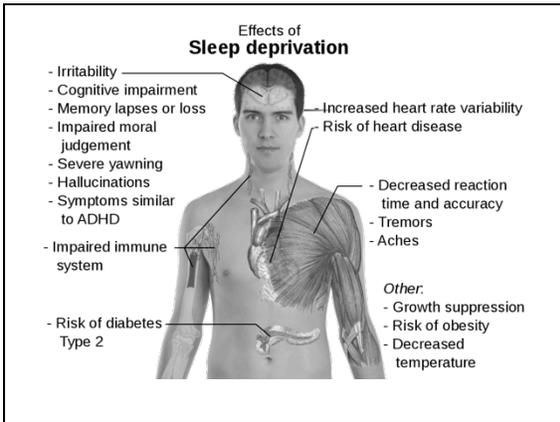


Learning Objectives

- œ Overview of importance of sleep
- œ Learning and Sleep
- œ Development of Insomnia
- œ Behavioural Treatment of Insomnia
- œ Prevention of Insomnia/Sleep Hygiene

Why Sleep?

- Permits growth and rejuvenation of the immune, nervous, skeletal and muscular systems
 - Wound healing
 - Immune system functioning
 - Growth hormone secretion
 - Consolidation of memory
 - Rejuvenation of executive functions (attention and concentration, problem solving, planning, control)
 - Weight regulation



Why Now?

☞ ID and sleep difficulties

☞ People with ID and sleep difficulties present with more daytime serious behaviour problems than those without sleep difficulties

☞ Prevalence of sleep difficulties in people with ID higher than non-ID (rates range from 38-55%) though not many studies

Why Now?

☞ Many people with ID have atypical sleep patterns or use of sleeping space is often different than other adults

☞ Increased risk of medical and psychiatric problems plus increase risk due to environmental factors

Learning and Sleep



- œ Classical Conditioning
- œ Positive and Negative Reinforcement
- œ Sensitization
- œ Habituation
- œ Cognitive factors

Classical Conditioning



- œ A method of learning where responses elicited by one stimulus become can be elicited by another neutral stimulus when the two stimuli are paired
- œ Ivan Pavlov – bell rings – dog salivates

Classical Conditioning



- œ A fundamental mechanism of learning with far reaching influences
- œ Example – classical conditioning of immune system response
- œ Sleep – we associate all the things around us with falling asleep (or staying awake) when they are paired repeatedly

Little Albert



Negative & Positive Reinforcement



☞ Negative reinforcement – any behavioural response that is associated with the termination of an uncomfortable experience is rewarding and will be repeated in the future in similar situations

☞ Shuttle Box – holy leaping labradors!

Negative & Positive Reinforcement



☞ Positive reinforcement – behaviours that have positive consequences are likely to be repeated.

☞ Sleep – when we learn to do something that is associated with removing an obstacle to falling asleep and the positive outcome of having a good night's sleep

☞ Sleep - when items in the sleeping area become associated with not sleeping/distress, behaviours that reduce the irritation or distress will be repeated, and will also serve to reinforce the original association – e.g. turning off the bedside clock

Habituation



- ☞ With repeated application of an uncomfortable experience, the degree of discomfort will lessen provided that the application of the uncomfortable experience is frequent and repetitive – i.e. getting used to something unpleasant
- ☞ Experiment shocking doggies hind legs part II
- ☞ Sleep - Planes flying over your house – trains driving by – traffic noise – other sources of stimulation when in the regular sleep location

Sensitization



- ☞ The opposite of habituation
- ☞ The expectation of experiencing discomfort will decrease the threshold for experiencing discomfort
- ☞ Initial experiment applying electric shock to hind legs of doggies
- ☞ Sleep – when bedtime has become associated with heightened arousal or distress, the person will be even more vulnerable to further irritation once they are in bed – sources of sound, light, physical sensations, etc...
- ☞ Enhances anxiety which further becomes associated with sleeping location and “trying to fall asleep”

Cognitive Factors



- ☞ Beliefs and rules that both guide and are influenced by behaviour
- ☞ Expectations related to sleep based on past experience
- ☞ Emotions that become associated with thoughts and expectations

Learning and Normal Sleep



- ☞ Natural process unfolds
- ☞ Process shaped through associative/classical conditioning – associating environmental cues with sleepiness
- ☞ Negative reinforcement – learn that by doing certain things, obstacles to falling (back) to sleep are removed

Learning and Normal Sleep



- ☞ Positive reinforcement – the experience of a good night's sleep
- ☞ Habituation – getting used to environmental stimulation and falling (back) to sleep in spite of the stimulation
- ☞ Beliefs/rules concerning sleep become internalized and expectations form which permit unhindered falling (back) to sleep

Insomnia



- ☞ Primary Insomnia
- ☞ Secondary Insomnia
- ☞ Sleep Onset Insomnia
- ☞ Middle-of-the-Night Insomnia

Development of Primary Insomnia

- ☞ Developing from:
 - ☞ A period of illness or physical discomfort
 - ☞ A psychiatric difficulty
 - ☞ A period of emotional stress
 - ☞ Ineffective sleep habits
- ☞ Learning can play a significant role in development and maintenance of primary insomnia

Causes of Insomnia

From Wikipedia - <http://en.wikipedia.org/wiki/Insomnia>

Symptoms of insomnia can be caused by or can be co-morbid with:

- ☞ Use of psychoactive drugs or stimulants, including certain medications, herbs, caffeine, nicotine, cocaine, amphetamines, methylphenidate, MDMA and modafinil
- ☞ Use of fluoroquinolone antibiotic drugs, see fluoroquinolone toxicity, associated with more severe and chronic types of insomnia
- ☞ Restless Legs Syndrome, which can cause sleep onset insomnia due to the discomforting sensations felt and the need to move the legs or other body parts to relieve these sensations.

Causes of Insomnia

From Wikipedia - <http://en.wikipedia.org/wiki/Insomnia>

- ☞ Periodic limb movement disorder (PLMD), which occurs during sleep and can cause arousals that the sleeper is unaware of.
- ☞ Pain - An injury or condition that causes pain can preclude an individual from finding a comfortable position in which to fall asleep, and can in addition cause awakening.
- ☞ Hormone shifts such as those that precede menstruation and those during menopause
- ☞ Life events such as fear, stress, anxiety, emotional or mental tension, work problems, financial stress, birth of a child and bereavement.

Causes of Insomnia

From Wikipedia - <http://en.wikipedia.org/wiki/Insomnia>

- ☞ Mental disorders such as bipolar disorder, clinical depression, generalized anxiety disorder, post traumatic stress disorder, schizophrenia, obsessive compulsive disorder, Dementia or Excessive Alcohol intake.
- ☞ Disturbances of the circadian rhythm, such as shift work and jet lag, can cause an inability to sleep at some times of the day and excessive sleepiness at other times of the day. Chronic circadian rhythm disorders are characterized by similar symptoms.

Causes of Insomnia

From Wikipedia - <http://en.wikipedia.org/wiki/Insomnia>

- ☞ Certain neurological disorders, brain lesions, or a history of traumatic brain injury
- ☞ Medical conditions such as hyperthyroidism and rheumatoid arthritis
- ☞ Abuse of over-the counter or prescription sleep aids can produce rebound insomnia

Causes of Insomnia

From Wikipedia - <http://en.wikipedia.org/wiki/Insomnia>

- ☞ Parasomnias, which include such disruptive sleep events as nightmares, sleepwalking, night terrors, violent behavior while sleeping, and REM behavior disorder, in which the physical body moves in response to events within dreams
- ☞ A rare genetic condition can cause a prion-based, permanent and eventually fatal form of insomnia called fatal familial insomnia.
- ☞ Physical exercise. Exercise-induced insomnia is common in athletes, causing prolonged sleep onset latency.

When to Encourage – When to Treat?



- ☞ Degree of interference with daily living activities
- ☞ Distress associated with difficulty falling (back) to sleep
- ☞ Falling asleep during the day in spite of activities

When to Encourage – When to Treat?



- ☞ Complaints about falling to sleep or up frequently in the night with difficulty resettling
- ☞ When sleep difficulties are accompanied by increase in challenging behaviours during the day
- ☞ During periods of illness – awareness of sleep-related behaviour

Behavioural Treatment of Sleep Difficulties



- ☞ Is it really a problem? If so – refer to clinicians.
- ☞ Conduct adequate evaluation of the sleep difficulties
- ☞ Biopsychosocial evaluation
- ☞ Rule out causes and contributing factors
- ☞ If secondary insomnia, treat primary causes and make environmental modifications enhance positive learning
- ☞ If primary insomnia, then primarily behavioural treatment

Behavioural Treatment of Sleep Difficulties



- ☞ Informed consent and the importance of collaboration
- ☞ Apply principles of learning to the problem with falling (back) to sleep
- ☞ Develop awareness of habits around sleep and collect information – self monitoring or with assistance
- ☞ Start using sleep logs to collect baseline and to permit evaluation of progress

Sleep logs

Night of (date): _____

1. Yesterday I did / didn't (circle applicable) have a nag
2. Yesterday I did / didn't take medication to help me sleep
3. Last night, I turned the lights out at _____ am/pm
4. Last night, it took me _____ hour(s) to fall asleep
5. Last night, after I fell asleep, I woke up on one or more occasions for a total of _____ hour(s)
6. Today, I finally woke up at _____ am/pm
7. Today, I finally got out of bed at _____ am/pm
8. Last night, I was asleep for a total of _____ hour(s)
9. Last night, the time I spent in bed (between lights out and finally getting up) was _____ hour(s)

Sleep Logs



Date	Lights Out Time	Time to fall asleep (minutes)	Total time awake in night (minutes)	Time Woke Up	Time Out of Bed	Total Sleeping Time	Total Time In Bed	Sleep Efficiency Rating

Behavioural Treatment of Sleep Difficulties



- ☞ Goal: improve sleep efficiency (the percentage of time in bed spent sleeping)
- ☞ Sleep efficiency cut-off = 85%
- ☞ Stimulus control - counterconditioning
- ☞ Involves following a series of "Rules" to recondition/decondition

Behavioural Treatment of Sleep Difficulties



- ☞ Sleep log completed daily
- ☞ No caffeine after 4:00 p.m. (i.e. coffee, chocolate, caffeinated tea, caffeinated pop)
- ☞ Establishing bedtime rituals (i.e. preparing to go to sleep approximately 1 hour before your predefined bedtime).

Behavioural Treatment of Sleep Difficulties



- ☞ Sleep should be restricted to defined sleeping times (night) – No naps during day
- ☞ Stimulus Control
 - ☞ Bedroom is for sleeping and only sleeping
 - ☞ No time should be spent in bed unless the intention is to sleep (i.e. no book reading, TV watching, etc... in bed)

Behavioural Treatment of Sleep Difficulties



- ☞ Sleep is restricted to the bed – not on couch, comfortable chair, etc...
- ☞ Bedtime is set to significantly later than usual (later than time usually falling asleep)
- ☞ Wake time is set to desired wake time or earlier

Behavioural Treatment of Sleep Difficulties



- ☞ If no sleep by 20 minutes in bed, exit bedroom
- ☞ Engage in quiet activity until sleepy – avoid falling to sleep outside bedroom and don't try to do so
- ☞ Helps to engage in some boring activity that requires attention
- ☞ Same procedure for middle of the night waking

The Art of Falling (Back) to Sleep



- ☞ Try to stay awake
- ☞ Exercises that involve intense concentration
- ☞ Relaxation exercises
- ☞ Meditation

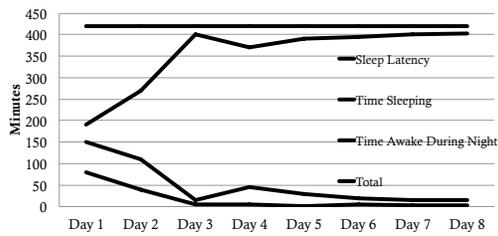
Behavioural Treatment of Sleep Problems – Sleep Log

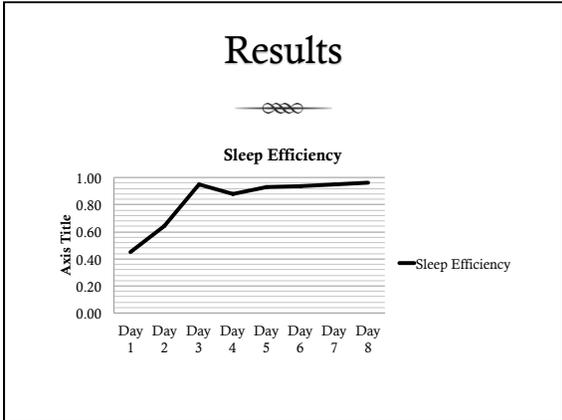
Date	Lights Out Time	Time to fall asleep (minutes)	Total time awake in night (minutes)	Time Woke Up	Time Out of Bed	Total Sleeping Time	Total Time In Bed	Sleep Efficiency Rating
2/10/2010	8:00 p.m.	150	60	5:30 a.m.	8:00 a.m.	6 hrs	12 hrs	50%
8/10/2010	12:00 a.m.	30	30	7:30 a.m.	7:35 a.m.	6.5 hrs	7.58 hrs	85%
15/10/2010	12:00 a.m.	20	15	8:00 a.m.	8:05 a.m.	6.5 hrs	8.1 hrs	92%

Example Results

	Sleep Latency	Time Sleeping	Time Awake During N	Total
Day 1	150	190	80	420
Day 2	110	270	40	420
Day 3	15	400	5	420
Day 4	45	370	5	420
Day 5	30	390	0	420
Day 6	20	395	5	420
Day 7	16	401	3	420
Day 8	15	402	3	420

Example Results





- ### Practical Issues
-
- ☞ Bedroom as “apartment”
 - ☞ Night staffing, sleep staff, SIL
 - ☞ Self-monitoring
 - ☞ Motivation – external vs. intrinsic
 - ☞ Rights and consent

- ### Learning and Prevention of Sleep Difficulties
-
- ☞ Sleep hygiene
 - ☞ To prevent sleep problems
 - ☞ Without referral – common sense guidelines for everyone to follow (with consent)
 - ☞ Everyone’s sleep schedules may be different

Sleep Hygiene Guidelines



- ☞ Avoid sleeping during the day if it interferes with nightly sleep
- ☞ Avoid sleeping anywhere other than your bed and limit other significantly “wakeful” activities in your bedroom
- ☞ Try to stick to a predefined bedtime and waking time – try to avoid significant variations on weekends
- ☞ Maintain a bedtime ritual – a predictable sequence of events that precede sleep

Sleep Hygiene Guidelines



- ☞ No caffeine after 4:00 p.m. (i.e. coffee, chocolate, caffeinated tea, caffeinated pop)
- ☞ Avoid spending time in bed not sleeping
- ☞ At least 85% of the time spent in bed should be spent sleeping – otherwise there is a greater risk for the development of sleep problems

So...



- ☞ Know the history
- ☞ Realistic sleep expectations
- ☞ Flexibility and environmental accommodations
- ☞ Importance of meaningful daytime activities
- ☞ Predictable pre-sleep activities – different for each person

And again...



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