SLEEP AND PAIN

TOP FIVE NON-PHARMACOLOGICAL STRATEGIES FOR YOUR PATIENTS

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UNIVERSITY OF VERMONT MEDICAL CENTER SLEEP PROGRAM

TODAY:

- Interrelatedness Of Insomnia And Chronic Pain
- Efficacy Of Cognitive-Behavioral Therapy (CBT)
- Top 5 CBT Strategies For Treating Insomnia (some for pain)
- Interweave CBT Into Your Practice
- Non-Pharmacological Resources For Your Patients
INSOMNIA:

- One or more of the following:
  - Difficulty initiating sleep
  - Difficulty maintaining sleep
  - Waking up too early
  - Chronic non-restorative or poor-quality sleep

- Insomnia occurs despite opportunity to sleep

- Daytime functional impairment

- (At least: 31 minutes per night, 3 nights a week, 6+ month duration)

*American Academy of Sleep Medicine*
**STAGE 3:** Try out every conceivable sleep position, and even a few inconceivable ones, but never, ever get comfortable.

Did you somehow forget how to be comfortable?

Have you ever actually been comfortable?

You can no longer remember.

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**STAGE 4:** Keep furiously throwing your blankets on and off because your stupid body can’t decide whether it’s hot or cold. Don’t worry, you’ll still be magically covered in sweat either way!

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**STAGE 5:** Since you definitely aren’t sleeping anytime soon, go ahead and make good use of this extra time by dwelling on any past mistakes you’ve made! Ideally this will be something minor you did years ago that no one else but you remembers.

Be sure to blow it WAY out of proportion!

- Man, that was a really insensitive joke I told Katie at that party last year...
- It was a super dumb thing to say and Katie probably hates me now, but I’m too nice to say anything.
- It was the dumbest thing any human has ever said, and every living person hates me.
CHRONIC PAIN:

- Ongoing or recurrent pain...
  - lasting beyond the usual course of acute illness or injury
  - or more than 3 to 6 months

- Adversely affects the individual’s well-being

- Common chronic pain complaints
  - headache, low back pain, cancer pain, arthritis pain, neurogenic pain, psychogenic pain
  - chronic fatigue syndrome, endometriosis, fibromyalgia, inflammatory bowel disease, interstitial cystitis, temporomandibular joint dysfunction

American Chronic Pain Association
CHRONIC PAIN:

- Mind of a healthy person
- Mind of a chronic pain sufferer

CHRONIC INSOMNIA:

- Mind of a healthy person
- Mind of a chronic pain sufferer
BEDFELLOWS: INSOMNIA AND CHRONIC PAIN

People with Chronic Pain
- 67-88% present with sleep complaints (77%)
- 23%

People with Insomnia
- 50% suffer with chronic pain (50%)

Comorbidities:
- Obesity
- Type II Diabetes
- Depression

Researchers want to know:
Unidirectional or Bidirectional

Early longitudinal studies ('92-'01) supported bidirectional:
- Sleep → Pain (4 of 6 studies supported)
- Sleep ← Pain (5 of 6 studies supported)
INSOMNIA AND CHRONIC PAIN

Researchers want to know:
Unidirectional or Bidirectional

Prospective, longitudinal studies (2005-2012) found support for unidirectional:

- **Insomnia** → **Pain**
  - Infrequent tension headaches + insomnia → 12 years → More likely, chronic tension headache
  - Headache-free + insomnia → 11 years → New incident migraine and tension headache
  - Headache + normal sleep → 1 year → Headache remission

- \*Upper back
\*Neck
\*Back of Head
\*Arm Pain
\*Shoulder Pain
\*Knee Pain
\*Ankle Pain
\*Foot Pain
\*Eye Pain

INSOMNIA AND CHRONIC PAIN

Prospective, longitudinal studies (2005-2012) found support for unidirectional:

- **Insomnia** → **Pain**
  - Frequent “sleep problems” → 10 years → More likely develop Fibromyalgia
  - Insomnia → 17 years → Increased risk of chronic musculoskeletal pain
  - “Restorative Sleep” → 15 months → Chronic widespread pain symptom resolution
INSOMNIA AND CHRONIC PAIN - IN SUM

- Insomnia: Increased risk for new-onset chronic pain
  - Worsens long-term prognosis of existing headache and chronic musculoskeletal pain (MSP)
  - Influences daily fluctuations of clinical pain
- Good Sleep: Improves long-term prognosis of headache & MSP

AS A PROVIDER…WHAT TO DO?
HOW TO ADDRESS PATIENTS’ URGENT NEEDS

Diet? Exercise??
Can’t you just operate?
WHAT TOOLS DO YOU HAVE?
In Australia, 90% of primary care visits for insomnia result in hypnotics Rx

CHALLENGE STATUS QUO
6-10% of U.S. adults use hypnotics for insomnia (2010)
Increased use of second generation anti-psychotics
CONSIDER AN ALTERNATIVE:
Cognitive-Behavioral Therapy for Insomnia (CBT-i)

OUTCOMES (Meta-analyses of 60+ studies):
At least 1/3 become normal sleepers
70-80% benefit from treatment

CBT more effective than medications, maintained LT gains

COGNITIVE-BEHAVIORAL THERAPY FOR INSOMNIA (CBT-I)

Meta-analyses show large treatment effects:

- Decreased sleep onset latency by 19 minutes  (23 min, control)
- Decreased duration of awakenings by 26 minutes (36 min, control)
- Increased sleep quality by 10%  (16%, control)
- Increased total sleep time by 7.6 minutes (95 min, control)
CBT-I VS. HYPNOTICS

Recent review shows similar effect sizes in meta-analyses of the “pams” and “Z drugs”

Cognitive-Behavioral Therapy for Insomnia

- alprazolam (Xanax)
- clonazepam (Klonopin)
- diazepam (Valium)
- lorazepam (Ativan)
- zolpidem (Ambien)
- eszopiclone (Lunesta)
- zaleplon (Sonata)

CBT-I

- Requires time & effort
- Limited practitioners
- Patients may resist
- Sustained improvements
- CBT strategies can benefit mood, health

MEDICATION

- Useful for acute insomnia (2-4 weeks)
- Side effects
- Tolerance
- Rebound insomnia - feeds psychological dependence
- Promotes status quo
WHAT IS COGNITIVE-BEHAVIORAL THERAPY?

“What CBT is not:"

1) Education
   - Sleep Cycles
   - Dispel myths about Insomnia
   - 3-P Model
   - Sleep Hygiene
   - Pavlov
   - Role of thoughts
   - Sleep & Alert Drives
   - Role of stress response
   - Benefits of relaxation response

2) Awareness
   - Sleep log
   - Cognitive distortions & DBAS
   - Counterproductive behaviors
   - Role of stress

3) Change (Thoughts & Behavior)
   - Sleep Hygiene
   - Stimulus Control
   - Sleep Restriction
   - Cognitive Restructuring
   - Relaxation Training
   - Stress Management
   - Decrease medication reliance

“I also have trouble sleeping. I don’t understand why. No one I talk to seems to have any trouble falling asleep.”

If you want to make enemies, try to change something.

~Woodrow Wilson
BARRIERS TO CBT-I

- It’s not a quick fix
- Patient has to participate
- Requires getting out of familiar, comfort zone
- May be counter-intuitive (i.e., sleep restriction)
- Belief all options have been unsuccessful
- Last resort, well-entrenched patterns
- External locus of control

COGNITIVE-BEHAVIORAL THERAPY FOR INSOMNIA (CBT-I)

5 PRIMARY COMPONENTS

- Sleep Hygiene
- Relaxation Training
- Stimulus Control
- Sleep Restriction
- Cognitive Restructuring
COGNITIVE-BEHAVIORAL THERAPY FOR INSOMNIA (CBT-I)

BUILDING AWARENESS

### SLEEP LOG

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### Sleep Well Program

- **University of Vermont Medical Center**
- **Sleep Well Program**

- **Today (MM/dd):** 02/02
- **Min’s to fall asleep:** 60
- **Hours of sleep:** 5
- **Hrs in sleep window:** 8
- **Sleep Efficiency:** 63%
- **Day’s stress:** 1
- **Day’s range:** 1
- **Relax Practice (minutes):** 15

- **Use:** A alcohol, N nicotine, M sleep meds, P pain, S screen time, R read

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**Week 1 Averages**: 

<table>
<thead>
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<th>Week</th>
<th>Averages</th>
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</table>
1) SLEEP HYGIENE

- No ‘Magic Bullet’
- Go For Most Obvious
- Explain Rationale
- Sustained “Experiment”
- Patient Choice And Agency
- Multiple Benefits

1) SLEEP HYGIENE

- Clock
- Exercise
- Screen Time
- Pre-Bedtime Routine
- Avoid Stimulants (Physical, Emotional, Mental)
- Reduce Alcohol Use (Explain Why)
2) RELAXATION TRAINING

- Different Strokes For Different Folks
- Explain Neurochemistry And Physiology
- Encourage Guided Techniques
- Patients Can’t Use Common Excuse
- Multiple Benefits

2) SCIENCE OF MEDITATION (PAIN MANAGEMENT BONUSES)

- **Melatonin** - Levels boosted by an average of 98%
- **Oxytocin** - Connection hormone, combats cortisol. Meditators had 50% reduction in cortisol.
- **Endorphins** - Releases natural Painkiller
- **Serotonin** - Happy neurotransmitter. Combats depression.
3) STIMULUS CONTROL

- Explain Classical Conditioning
- Patients Resist, Especially During Vt Winter!
- Emphasize Power Of Sleep-Inducing Associations With Bedroom
- Modify To Bed For One-Room Situations

Main Goal:
Take frustration, Alertness, Restlessness, Anxiety, Mental Stimulation OUT of the bedroom

In Bedroom = “Pleasant and Present”
4) SLEEP RESTRICTION

- Counter-Intuitive
- Educate About Rationale
- Often Decreases Fatigue
- Challenge To Sustain

4) SLEEP RESTRICTION BENEFITS

- Increased Sleep Efficiency =
  - Decreased Fatigue
  - Increased Confidence In Ability To Sleep
  - Decreased Anxiety/Dread/Frustration About Sleep
- Paradoxical Effect
- Positive Results, Average 3 Weeks
5) COGNITIVE RESTRUCTURING

- Most Difficult Via Self-Help
- Effective In Group
- Multiple Benefits
- Dysfunctional Beliefs & Attitudes Scale
  - Misidentifying The Cause Of Insomnia
  - Overemphasizing The Impact Of Poor Sleep
  - Unrealistic Sleep Expectations
  - Faulty Beliefs About What Practices Improve Sleep
  - Lack Of Control And Predictability Over Sleep

Cognitive Restructuring

Cognitive restructuring is a technique that helps to identify and challenge irrational or maladaptive thoughts known as cognitive distortions (Mills, Neis & Dombeck, 2018).

INSOMNIA AND PAIN COMMONALITIES

- Lack Of Predictability
- Lack Of Control

both feed depression, anxiety, & anger
INSOMNIA AND PAIN COMMONALITIES ADDRESSED WITH CBT

Lack Of Predictability
- Sleep Log
- Alert Force/Sleep Drive

Lack Of Control
- Results Are Based On Personal Efforts
- Challenge Beliefs About Medication (External LOC)

INSOMNIA AND PAIN HYBRID TREATMENT RECOMMENDED

CBT-i Effective For Insomnia
- Does Not Fully Address Specifics To Manage Pain

CBT Effective For Pain Management
- Does Not Fully Address Specifics For Insomnia

Overlap in strategies will reinforce and strengthen
RESOURCES

Sleep Program At UVM Medical Center (Insomnia Consult)

Pain Management Program At MindBody Medicine at UVM Medical Center (Dr. Naylor)

Bibliotherapy

The Insomnia Answer

No More Sleepless Nights

A Woman’s Guide To Sleep

There’s an APP for that

Breathe2Relax - created by the military to teach belly breathing

Calm - Includes “sleep stories”

HeadSpace - meditation made simple in 10 minutes a day

Insight Timer - guided meditations and timer

INTERWEAVE NON-PHARMACOLOGICAL STRATEGIES

Easy idea to incorporate...

Stretch idea to incorporate...
CLOSING - A GLIMPSE OF HAIKU

How much can I fit
Into a haiku format
Oh no I'm out of

SLEEP WELL PROGRAM HAIKU

Daydreams of night dreams.
I will sleep better at night.
Pipe dreams in my mind.
SLEEP WELL PROGRAM HAIKU

The clock ticks unseen
elusive sleep comes and goes
The snow continues

SLEEP WELL PROGRAM HAIKU

Tonight I will sleep
without my medications
the whole damn night long (!)
SLEEP WELL PROGRAM HAIKU

Close my eyes, breathe in.
Let go of my day’s events.
Relax, fall asleep…

REFERENCES


Glovinsky and Spielman. The Insomnia Answer. 2006
