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SLEEPING MINDFULLY

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March 2019



Problem Identification

- 30% of adults suffer from insomnia defined as **difficulty falling asleep or staying asleep at least 3 times per week for at least one month (1)**.
 - *Increased prevalence in the elderly who disproportionately suffer from co-morbid diseases*
 - *50% of people over age 55 have some sort of sleep problem*
 - *40% of Americans sleep less than 7 hours per night (1)*.
 - *Women are 1.3 times more likely than man to have insomnia (3)*.
- Sleep mediates immune function, memory consolidation, and mood regulation. It's no surprise that people who suffer from insomnia report decreased quality of life (2).
- Sleep deprivation has been linked to increased whole body inflammation, obesity, heart attack, dementia, and even increased sensitivity to pain (1).
- Daytime consequences include hypersomnolence and decreased job performance.
 - *Also puts others at risk with ↑ risk of car accidents.* (2)

Problem Identification Continued

Why addressing insomnia makes sense:

Insomnia is a disorder of hyperarousal. The hyperarousal lasts throughout the entire day and causes difficulty initiating and maintaining sleep. This state of arousal is currently explained by two theories (10).

1. Cognitive Dysfunction

- I. Worry and rumination about life disrupts sleep. This morphs in to worry about sleeping and consequences of daytime sleepiness that turn into a vicious cycle*

2. Physiologic Factors

- I. Insomnia is due to neuroendocrine and physiologic factors such that people with insomnia have been found to have higher metabolic rates, higher levels of urinary free cortisol excretion, and catecholamines*

Mindfulness is able to work at the **root** of both causes of insomnia. It improves our ability to relax through increasing attentional factors that impart control over autonomic activation and helps reduce ruminative thoughts. (6)

The Public Health Cost of Poor Sleep

- The high prevalence of insomnia means that we spend an extraordinary amount on sleep aids (3).
 - *In 2014, people around the world spent \$58 billion on sleep aids. Projected to climb to 76.7 billion by the end of 2019.*
- Mean total healthcare expenditure is 60% higher in people with insomnia (3).
 - *Direct costs on dollars spent on insomnia treatment, healthcare services, and hospital care are estimated to be nearly \$14 billion (3)*
 - *Indirect costs such as loss of work, damage from accidents, and transportation are close to \$28 billion (3)*
- 40% of insomniacs have co-morbid psychiatric disorders compared with 16.4% of those without (3).
 - *Depression and anxiety are the most common*
 - *It was traditionally thought that insomnia was secondary to psychiatric disorders. In more recent large scale studies in Europe, it has been shown that insomnia more often preceded rather than followed by mood disorders (11).*

Why it matters, especially in Connecticut?

And if you're not already convinced that sleep is important, consider this....

- Brookfield Family Practice resides in Fairfield County, CT which has some of the longest commute times in the entire state (5).
- A local CT newspaper, the CT Mirror, estimates that more and more CT drivers are spending greater than one hour per week driving to work approximated to be about 20% of the residents of Fairfield County (4).
- Although it's unclear how many exactly suffer from insomnia we can estimate close to 30% based on national figures.
- Which means that there are many residents with underlying insomnia who are losing an hour or more of additional sleep every day and are then **getting behind the steering wheel (5)**.
 - *And we know that upwards of 72,000 car crashes each year are attributed to drowsy driving and account for more than 44,000 injuries and up to 6,000 fatalities*
- So even though the many benefits of adequate sleep may be hard to quantify such as mood regulation, decreased risk of dementia, etc, it is paramount to our own well being and the safety of people everywhere (2).

Community Perspective

“Try to find a woman over 50 without a sleeping problem.” – Anonymous Provider MD

Q: Why do you think sleep is so problematic in this age group of women over 50?

A: “It comes at a major time of change and stress in their life. Women are going through menopause which is causing many uncomfortable physiologic changes in their bodies. In addition, most women are working full time and juggling taking care of kids and aging parents. And it’s not just women, but from my practice they seem to disproportionately take on more of these responsibilities. How could you expect them to sleep?”

Q: What has your experience been with providing sleep aids?

A: “I’ve had horrible experiences with drugs like Ambien. I had one patient that said she had a dream that she had fallen down the stairs and woke up with her face black and blue. It wasn’t a dream.”

Q: “Do you see a place for mindfulness in helping treat insomnia and improving sleep?”

A: “Absolutely. I love using mindfulness apps on my phone. I listen to guided meditations on my way home from work and sometimes I use 5 minute emergency guided meditations when I’m stressed or overwhelmed. If I’m able to feel in control of day to day stressors and control normal anxiety, I find it’s much easier for me to sleep at night.”

Answers from Anonymous Provider MD

Community Perspective

“The current reality of our lives is that we are inundated with constant stimulus on our phones, computers, watches, you name it. Having these electronic items can be profoundly distracting in the bedroom and worsen already poor sleep habits. I think mindfulness should have a role in everyone’s life because it would allows us a chance to disconnect. I think it should be the first step for anyone having trouble sleeping.” –Anonymous Provider APRN

Intervention & Methodology

- A handout was made available to patients at Brookfield Family Practice that explains how mindfulness training can improve sleep for mild to moderate insomnia.
 - *Studies have shown that mindfulness is an effective treatment for those suffering from mild to moderate depression (6).*
 - *A JAMA Internal Medicine study in 2015 showed in a RCT setting, 10-30 minutes of mindfulness training could improve quality of sleep with greater effect than standard sleep hygiene protocol. In addition, the mindfulness group also showed a reduction in fatigue, and improvement of depression (6).*
- The handout included information about mindfulness training, why it works for sleep improvement, as well as easy ways to incorporate mindfulness everyday.
- The handout also included information about basic sleep hygiene etiquette and highlighted the value of CBT in insomnia treatment as well as **a special initiative of the Danbury Hospital Foundation offering free CBT modules for patients with insomnia!**

Sleeping mindfully

Just 10 minutes or more of daily mindfulness meditation has been shown to improve sleep, reduce fatigue, and improve symptoms of depression. – JAMA 2015

Easy Ideas to be Mindful

Start with just 5-10 minutes and work your way up from there. You can do it anytime during the day, before bed, or both! Remember the point is to **focus on the present** and momentarily leave your other thoughts and worries aside.

Mindful Yoga. Spend some time practicing your favorite yoga poses. If you need ideas, try searching "bed time yoga" on youtube.

Mindful Walking. Take a walk outside but slower than your normal pace. Take in your surroundings. If your attention drifts, acknowledge it and guide your attention back to walking.

Mindful Coloring. Give yourself a reason to buy one of those fancy adult coloring books and have some fun. Enjoy the moment.

Mindful Journaling. Challenge yourself to write down what you are grateful for or your goals for tomorrow.

Loving Kindness Meditation. This one you'll need the computer for. Just type it into Google and either read aloud or listen to a recording. The purpose is to focus kindness and love unto yourself and others.

Why it works "MINDFULNESS IS SIMPLY A MOMENT TO MOMENT AWARENESS OF ONE'S OWN EXPERIENCE WITHOUT JUDGEMENT" – AMERICAN PSYCHOLOGICAL ASSOCIATION

Insomnia is a disorder of hyperarousal based on overactivation of stress hormones that control our "fight or flight" response as well as cognitive dysfunction that causes us to worry. *Mindfulness gets at the root of both of these problems.* It improves our ability to relax through increasing attentional factors that impart control over our hormonally driven autonomic nervous system and reduces ruminative thoughts.

Phone Apps

They offer guided meditations, talks, sound scapes, and stretches. They even offer dedicated sleep programs. Free for download on IOS or Android.



Insight Timer



Calm



Stop, Breathe
& Think

Sleep Basics

Adapted from the HHS National Institute of Health
"Guide to Healthy Sleep"

- **Have a regular sleep schedule.** We crave habit. Going to sleep at different times of day is a hard adjustment for many people.
- **Don't lie in bed awake.** If after 20 minutes in bed you are still awake or are starting to feel worried, get up and do something relaxing. The anxiety of not being able to sleep makes it so much harder to fall asleep.
- **Try a hot bath before bed.** The drop in body temperature after a bath can help you feel more sleepy and can help you unwind.
- **Have the right sleep environment.** Try to keep the temperature on the cool side and make sure you have a comfortable pillow and mattress. And make sure to turn your clock's face so it is out of view such that you're not watching the clock as you try to sleep.
- **Remember, you're not alone.** 30% of people suffer from insomnia at some point in their life and over 50% over age 55.
- **Exercise Regularly.** Just not too late in the day. Try not to exercise 2-3 hours before bed.
- **Avoid large meals and drinks late at night.** Large meals can cause indigestion that can keep you up and drinking too many fluids at night can lead to frequent awakenings to use the bathroom.
- **Avoid alcoholic drinks before bed.** Although it may initially help relax you, alcohol reduces the amount of REM aka the deep restorative sleep you need.
- **Avoid coffee and nicotine.** Sodas, coffees, and chocolate all contain caffeine which can take up to 8 hours to wear off fully. Nicotine is also a stimulant!
- **Soak up the sun.** Daylight is vital to regulating sleep patterns. Go outside or work in a well lit room with natural light for at least 30 minutes a day.
- **Relax before bed.** Take time to unpack your day no matter how busy. Try light reading, listening to music, mindfulness, or anything you find calming.
- **If you're really struggling talk to your doctor.** They can help you treat an underlying sleep disorder or psychiatric illness.

A Note on Cognitive Behavioral Therapy

- CBT is a mode of therapy that helps you challenge and change unhelpful cognitive distortions about sleep. It also teaches you tools to control negative thoughts and worries that keep you awake and help you develop good sleep habits.
- It has been shown by many well established clinical trials to produce significantly greater sleep improvements compared to no treatment, pharmacologic, and non-pharmacologic treatment.
- These studies also demonstrate long term sleep improvements in sleep up to two years after completion of CBT. – *Clinical Psychology Review*
- If you're interested or fed up with poor sleep, talk to your provider. They are able to share with you a free online CBT module through Danbury Hospital or refer you to a practicing CBT trained therapist or psychiatrist.

"MINDFULNESS IMPROVES SLEEP" – JAMA
INTERNAL MEDICINE

Response

To evaluate perceptions of mindfulness intervention on sleep, I spoke with several patients who had picked up the handout from the waiting room and brought it into the exam room with them. **I included two of the responses I received that seemed to best highlight the type of feedback I was receiving.** Patients were mostly (A) happy to try something that has no cost and is medication free to improve their sleep and (B) saw it as a means of not just helping their sleep, but reigning in their anxiety.

“I’ve been struggling to sleep for years but never bad enough to need medication. I had heard about mindfulness from friends before, but I didn’t know it could help with sleep too. I’m really excited to see doctor’s offices include more information about natural remedies and treatments because I don’t want to take more medication than I have to.” – 63 y.o female patient

“My daughter is a high school student and these days kids have so much on their plate. Sometimes she gets home at 11 PM after sports and other activities. She has a lot of anxiety because of school and all that she does. She doesn’t sleep well either. I think some of the ideas on this handout could really help her relax more. They actually seem like a great activity for us to do together every day, even if it’s just for a few minutes.” – Mom of 14 y.o patient

Limitations & Effectiveness

- Mindfulness is a newer avenue for sleep treatment and research. Although small studies have been done, there are no large scale studies that have compared mindfulness training to common sleep hygiene techniques or CBT.
- Additionally, most of the mindfulness based sleep studies have shown improvement with mainly mild to moderate insomnia but not severe.
- Due to the short time frame of the Family Medicine rotation there was little opportunity to follow patients over time who incorporated mindfulness practice into their daily habits
 - *In addition, mindfulness practice takes time to work into one's daily routine and so any improvements in sleep are not seen immediately*
 - *Moreover, the responses to the handout were qualitative, based on anecdotal remarks from patients from their initial perceptions of mindfulness rather than actual practice.*

Future Intervention

- Currently my handout is being displayed in the waiting area for patients. In the future it would be interesting for the providers to hand it out to patients who specifically express poor sleep as a concern and then follow up with them at their next scheduled appointment. They could fill out an existing PSQI regarding sleep disturbances before they are given the reading material and again at their follow up appointment. This would allow us to track progress.
- Patient summaries are now offered to patients that ask for them. The mention of sleep disturbances could auto trigger the front staff to print handout material along with their clinical summaries. Alternatively it could be converted into a dot phrase.
- Students in the future could create a list of mindfulness resources in the community such as suggestions of various yoga studios, nature preserves, acupuncturists, meditation centers, etc that would be available at the office.
- Staff members that are interested could lead mindfulness sessions for patients once or twice a week at the office as they run various other support groups and nutrition programs

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