

2019

# Reducing Benzodiazepine Use for the Treatment of Insomnia and Supporting Nonpharmacological Therapies

UnChan Pyon

Follow this and additional works at: <https://scholarworks.uvm.edu/fmclerk>



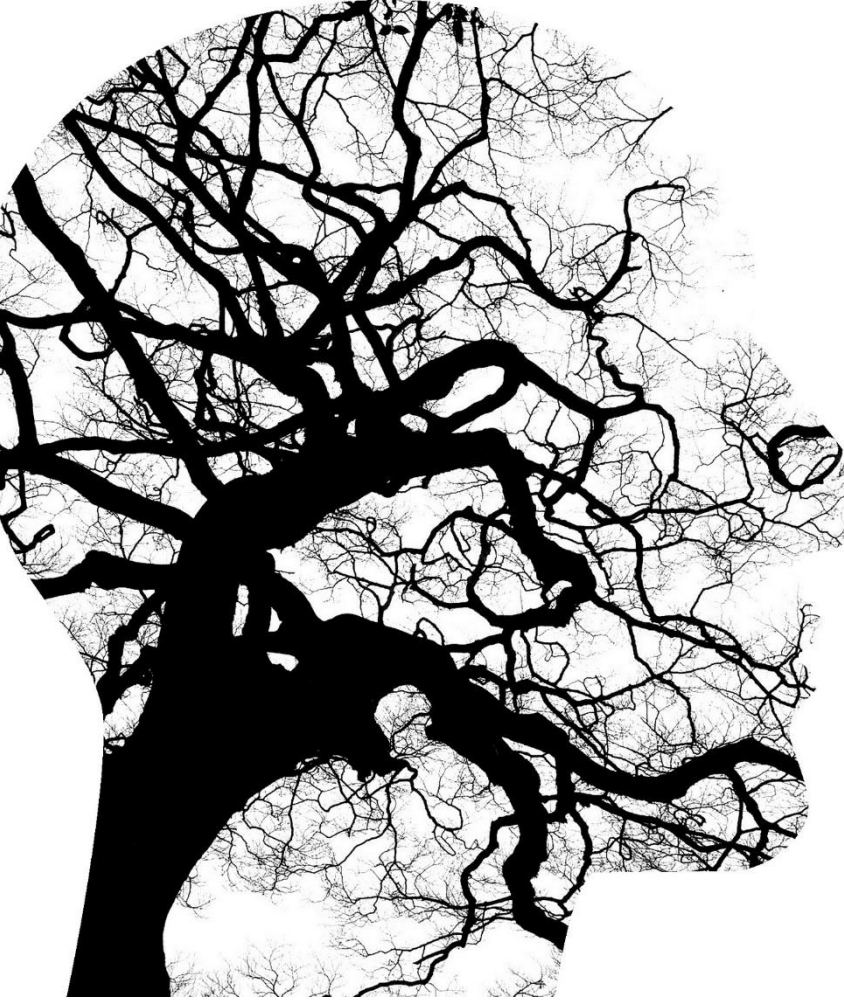
Part of the [Medical Education Commons](#), and the [Primary Care Commons](#)

---

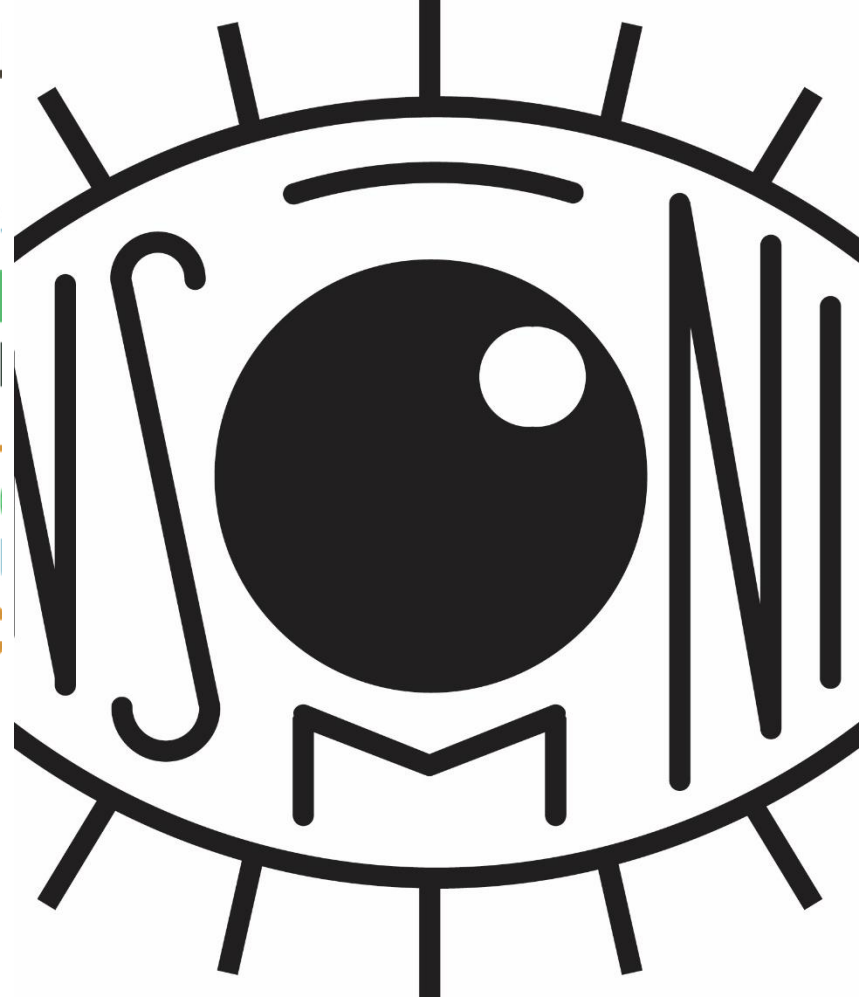
## Recommended Citation

Pyon, UnChan, "Reducing Benzodiazepine Use for the Treatment of Insomnia and Supporting Nonpharmacological Therapies" (2019). *Family Medicine Clerkship Student Projects*. 323.  
<https://scholarworks.uvm.edu/fmclerk/323>

This Book is brought to you for free and open access by the Larner College of Medicine at ScholarWorks @ UVM. It has been accepted for inclusion in Family Medicine Clerkship Student Projects by an authorized administrator of ScholarWorks @ UVM. For more information, please contact [donna.omalley@uvm.edu](mailto:donna.omalley@uvm.edu).



BENEFITS  
RISK  
RESEARCH  
GRIEF  
STIGMA  
WORRIED  
RELATIONSHIPS  
TRAUMA  
IQ  
POSTPARTUM  
SEI  
CRISIS  
P  
SUI  
POST-TRA  
PSYCHOL  
HEALTH  
EM  
DR  
GENETIC  
C  
PHOBIA  
ATTITUDE  
TREATMENT  
UNHAPPY  
GRIEF  
ANXIETY  
BIPOLAR  
STRESS  
SESSION  
LINICAL  
MENTAL



# REDUCING BENZODIAZEPINE USE FOR THE TREATMENT OF INSOMNIA AND SUPPORTING NONPHARMACOLOGICAL THERAPIES

UNCHAN PYON  
FAMILY MEDICINE ROTATION 6, JANUARY 2018  
PROJECT MENTORS: DR. ANUREET GILL, MD; EMILY FRITZ, LCSW

# PROBLEM IDENTIFICATION

- The number of patients who fill out a benzodiazepine prescription has increased from 4.1% to 5.6% between 1996 and 2013 – 2.5% annual increase [1]
- Benzodiazepines are commonly used for the treatment of insomnia
- Insomnia accounts for 5.5 million primary care office visits every year [4]
- Among the elderly (age >65), 42% report difficulty falling and staying asleep. [3]
- The American Geriatrics Society, The American Academy of Sleep Medicine, and the American Academy of Family Physicians all recommend against benzodiazepine use for insomnia, especially in the elderly [4]
- However, the use of benzodiazepines increase with age: 3% of adults ages 18-34; 7.5% of adults ages 51-64; 9% in adults ages > 65. [5]
- Furthermore, one study showed that there was a significant discord in what elderly patients and physicians believed in the risks and benefits of benzodiazepines for insomnia treatment: [3]
  - Elderly patients believed there were more benefits and less risks than what their physicians believed.

# PROBLEM IDENTIFICATION (DANBURY)

- The Primary Care Clinic in Danbury is currently working on a benzodiazepine protocol in order to provide guidelines for providers to take most of their patients off benzodiazepines, in response to this issue.
- A free online CBT training is offered as an alternative treatment for insomnia over benzodiazepines.
- However, many barriers to the online CBT training exist:
  - Patients find it hard to sit through long videos that cannot be skipped, rewind, or reviewed
  - There is a lack of awareness of the online CBT training, the adverse effects of benzodiazepines, and current guidelines recommending against benzodiazepines
  - No formal follow-up with patients on their online CBT training
- Discussions with patients at Danbury Primary Care revealed a surprising low awareness to the adverse effects of benzodiazepines and current guidelines for insomnia treatment.

# PUBLIC HEALTH COST

- It was estimated that the economic cost of insomnia was \$30-35 billion per year in treatment and indirect costs including doctor's visits, prescriptions, accidental risk, and lost workplace productivity. [7]
- One study showed, out of 17,558 patients on benzodiazepines (9,304 of whom were over 59 years old), 1,352 patients suffered 297 injuries which led to hospital admissions, and 2,977 injuries leading to doctor's visits. [2]
  - Injuries were sustained while on a benzodiazepine.
  - The total cost of these visits amounted to \$3.3 million in medical bills.
- Benzodiazepine overdose death rates increased from 0.58 per 100,000 adults to 3.07 per 100,000 adults between 1996 to 2013 – 430% increase. [1]
- Discussions with patients at Danbury Primary Care, revealed that costs of benzos for patients were estimated to be about \$300 annually.

# COMMUNITY PERSPECTIVE ON ISSUE AND SUPPORT

- Patients often use benzos as a more convenient solution to their insomnia than committing to working with an online CBT. Also, patients are often unaware of the recommendations against benzos for insomnia.
  - “Patients, especially elderly patients, rely on benzos as a quick fix for their insomnia”
  - “Increasing awareness on the current recommendations against benzodiazepines use for insomnia in an important community health issue”

Emily Fritz, LCSW

- Patients are not consistently given CBT information, are not followed up on their effectiveness, and often find the training tedious and inconvenient. Also, patients can't skip, fast forward, rewind, or review the training videos, making it time consuming and not user friendly.
  - “We do give out information for the online CBT website, but not consistently. We also do not have a formal way of following up on patients”
  - “There are barriers to the CBT training for patients because the videos can be long and tedious. I myself can't find the time to sit down and go through all the videos.”

Lisa Mello, LPN

# INTERVENTION AND METHODOLOGY

- In order to increase the awareness of the current guidelines for insomnia treatment, a patient information sheet was created to be given to patients being treated with benzodiazepines for insomnia.
- A meta-analysis showed that cognitive behavioral therapy for insomnia was an effective treatment for patients with insomnia. [5]
- It is imperative that patients put in the effort to initiate CBT as a first-line treatment for insomnia.
- However, the online CBT training is tedious, long, and does not provide a user friendly review of the material.
- A handout providing a concise, aesthetically pleasing, easy to read, and informative summary of the online CBT was created to prime patients to the training and to serve as a review reference.
  - Visually engaging material was made using variable typography, implementation of free license vectors and images, and various font types.

## Benzodiazepine Awareness in Insomnia Treatment

- Benzodiazepines such as Xanax (alprazolam), Klonopin (clonazepam), Valium (diazepam), and Ativan (lorazepam) are commonly used for insomnia.
- Many medical organizations now recommend against using benzos for insomnia due to their adverse effects (especially in the elderly) and high abuse potential.
  - ✦ The American Geriatrics Society; The American Academy of Sleep Medicine; The American Academy of Family Physicians
- Some of the adverse effects of benzodiazepines include memory impairment, irritation/agitation, central nervous system depression, addiction, and withdrawal symptoms (increased heart rate and blood pressure, tremors, sweating, insomnia).
- The recommended first-line treatments for insomnia include stimulus control, relaxation training, and cognitive behavioral therapy.
- Nonbenzodiazepine medications with less addictive potential such as melatonin, ramelteon, zolpidem (Ambien), eszopiclone, zaleplon, and doxepin are also available as SHORT-TERM treatments for insomnia.
- Talk to your doctor about alternative treatments for insomnia.

### References:

Craske, Michelle, PhD; "Approach to treating generalized anxiety disorder in adults;" UpToDate

Locke, Amy B., MD; "Diagnosis and Management of Generalized Anxiety Disorder and Panic Disorder in Adults;" *Am Fam Physician*. 2015 May 1;91(9):617-624

Longo, Lance P., M.D.; "Addiction: Part I Benzodiazepines - Side effects, Abuse Risk and Alternatives", *Am Fam Physician*. 2000 Apr 1;61(7):2121-2128.

Matheson, Eric, MD; "Insomnia: Pharmacologic Therapy;" *Am Fam Physician*. 2017 Jul 1;96(1):29-35.

## Keep a sleep diary and keep realistic sleep goals:

- ✓ How long did you sleep last night? (average 6-7 hours)
- ✓ How long did it take for you to fall asleep? (average 20 mins)
- ✓ How many times did you wake up? How long did you stay awake?
- ✓ Estimate the time, and don't look at the clock at night (causes *more anxiety*)
- ✓ Find an **app** on your *smartphone* to help you keep track of your sleep



## "Applied Relaxation"

### ○ Paced Breathing

- ✓ Put your hand on your chest and abdomen
- ✓ *Inhale* and *exhale* slowly allowing your chest and abdomen to rise up and down



### ○ Deep muscle relaxation

- ✓ *Tense* each muscle group for 5 seconds and then *relax* them for 10 seconds
- ✓ Say the word "**relax**" slowly to yourself
- ✓ Move down your body *progressively*



### ○ Imagery-induced relaxation

- ✓ Close your eyes and imagine a **relaxing scene** (beach, lake, backyard)
- ✓ Relax, thinking of the *sights, smells, and sounds* of your image



### ○ Self-hypnosis

- ✓ We have *conscious* and *unconscious* parts of our mind
- ✓ We can reach a state of heightened relaxation or *trance state*
- ✓ Please visit [www.wchn.cobaltcbt.com](http://www.wchn.cobaltcbt.com) or search "self-hypnosis" on the internet to find mp3s with instructions for self-hypnosis



## Practice good sleep habits

### ○ Stimulus control

- ✓ Associate your bedroom with sleep
  - Avoid watching TV, using electronic devices, or reading **IN BED**
  - Do these activities outside of the bedroom (make the bed for *sleep* and *sex* only)
- ✓ If you don't fall asleep within 20-30 mins, **get out of bed** and come back when you're sleepy



### ○ Sleep hygiene

- ✓ Avoid **caffeine** (coffee, teas, soft drinks, chocolate)
- ✓ Avoid **smoking** in the evening (nicotine/nicotine withdrawal contributes to insomnia)
- ✓ Try sleeping in *separate beds* if you have a noisy bed partner or pet
- ✓ Avoid **exercise** 4 hours before bed time
- ✓ Avoid **alcohol** before bed
- ✓ Avoid **naps** after 3:00PM; keep naps < 15 mins.
- ✓ Avoid high fatty, sugary, salty **foods** before bed
- ✓ Avoid drinking too much **liquids** before bed (nocturia)
- ✓ Maintain a comfortable room temperature in a dark room





- **DON'T LOOK AT THE CLOCK!** (causes more anxiety)
- Talk to your doctor about some of your **medications** that may interfere with your sleep



### Cognitive Behavioral Therapy

✓ Change our **thinking patterns** to avoid thoughts that disrupt sleep: *anxiety, frustration, depression*

1. Identify **unhelpful thoughts** about sleep
2. Examine and challenge the **validity** of these thoughts
3. Replace the unhelpful thoughts with **helpful thoughts**



### ○ “So What If...” Technique

- **Defuse** automatic thoughts of “worst-case scenarios”
- Sometimes we can **only control** our reaction to a problem
- Don’t spend too much time thinking about the problem

#### Example:

**Automatic Thought:** “If I don’t sleep tonight I’m going to be too tired to work effectively tomorrow”

**So what if** I’m too tired to work effectively tomorrow?  
 “My boss will be disappointed or frustrated with me”

**So what if** my boss becomes disappointed or frustrated with me?  
 “I will get fired or get in trouble for a *reason beyond my control*”

**So what can** I do to avoid getting in trouble for a reason beyond my control?  
 “I can remind myself this is not my fault and explain to my boss my sleep problem so he/she can *understand my situation better*”

- **Keep your sleep expectations realistic** and **don’t get distraught** or think the worst because of a **poor night’s sleep**

### Mindfulness

- ✓ Insomnia can be caused by **stress**
- ✓ People often use mindfulness to focus on the **“here and now”** to **avoid judgment** of what is happening and **change our harmful perceptions**

#### 1. Observe the experience

- **Notice** what’s happening and what your senses are sensing

#### 2. Describe the experience

- **Put words to** what you are sensing

#### 3. Participate in the experience

- Let yourself go, **accept yourself** and the situation as they are, and **change harmful reactions** to the experience



#### Example:

##### 1. Observe:

*Tense head, tense and tired body, eyes that won’t close, feelings of frustration, anger, and defeat, dark room, sound of the clock, restless legs*

##### 2. Describe:

*I’ve had trouble sleeping lately and I’m frustrated and angry that this is happening to me because it affects my work during the day. I feel like I want to scream because my body will not listen to me.*

##### 3. Participate:

*It is not my fault that I can’t sleep. Many people suffer from insomnia and I am one of those people. Being frustrated and angry will only increase my stress and will not help me relax and fall sleep. Screaming will worsen my stress and will probably wake up my neighbors. It’s okay if I do not get enough sleep tonight. I will stick to what I learned in CBT and simply try again the next night.*

Please refer to the Cobalt CBT website for more information!  
[www.wchn.cobaltcbt.com](http://www.wchn.cobaltcbt.com)

# RESPONSE/RESULTS TO THE INTERVENTION

- Response to the handouts were positive.

- “You did an excellent summary of the CBT online, great work!”
- “Nicely done and love the pics.”

Emily Fritz, LCSW

- “It’s a great idea to make a summary of the online CBT training which many patients have trouble finding the time for.”

Lisa Mello, LPN

- An initial evaluation on the effectiveness of the handouts were implemented by performing brief 2-question surveys on a limited number of insomnia patients
  - Two participants changed their perspectives on benzos after reading the handout: Agree to slightly disagree; Agree to disagree
  - The likelihood of these participants to consider alternative therapies increased 2 points on a 10 point scale
  - The likelihood of completing the CBT training increased 2 points
  - The likelihood of implementing non-pharmacological therapies for insomnia increased by 2.5 points
  - These participants rated the CBT summary handout an average of 9.5/10 in helpfulness.



# EVALUATION OF EFFECTIVENESS AND LIMITATIONS

- A more thorough evaluation of the effectiveness of the intervention can be implemented by increasing the sample size of insomnia patients surveyed.
- Medical students or any of the office staff will perform quick interviews asking 2-question surveys before and after the insomnia patients read the handouts to assess the effectiveness of the handouts in increasing awareness and providing a helpful summary of the CBT training.
- The data collected from the surveys can be compiled and analyzed to assess how effective the handouts were in changing patients' perspective on benzos for insomnia and in motivating patients to use non-pharmacological therapies for insomnia.
- Limitations:
  - There was not enough time during the clerkship to collect data from surveys to assess the effectiveness of the intervention.
  - The sample size in the initial evaluation was only two participants.
  - There was a small population of insomnia patients at Danbury Primary Care, so it is difficult to create an adequate sample size.
  - The limited time during the office visit makes the provider less likely to conduct the survey and review the handout.

# RECOMMENDATIONS FOR FUTURE INTERVENTIONS/PROJECTS

- Future medical students and staff can review these handouts with patients and educate them on benzodiazepine use. They can also collect data on its effectiveness using the surveys implemented.
- There are additional online CBT training offered for depression and anxiety which are equally long, tedious, and inconvenient.
- Future medical students can create similar user-friendly, concise, and visually pleasing summaries of these therapies to serve as a primer and review sheet for patients. Patients should also be encouraged to use these therapies over pharmacologic therapies.
- Similar surveys can be created and implemented to assess their effectiveness.
- Furthermore, there is a lack of follow-up on the completion of these online CBT options. An intervention to formally follow-up and assess the effectiveness and compliance of the online CBT will be another beneficial intervention for insomnia treatment.

# REFERENCES

1. Bachhuber, Marcus A. MD; Increasing Benzodiazepine Prescriptions and Overdose Mortality in the United States, 1996-2013.
2. French, Dustin D.; Outpatient Benzodiazepine Prescribing, Adverse Events, and Costs, *Advances in Patient Safety: From Research to Implementation (Volume 1: Research Findings)*
3. Mah, Leevin; Long term benzodiazepine use for insomnia in patients over the age of 60: discordance of patient and physician perceptions; *BMC Fam Prac.* 2002; 3:9
4. Matheson, Eric, MD; Insomnia: Pharmacologic Therapy; *Am Fam Physician.* 2017 Jul 1;96(1):29-35
5. Olfson, Mark, MD; Benzodiazepine Use in the United States; *JAMA Psychiatry*; Feb 2015, Vol 72, Number 2
6. Trauer JM, Qian MY, Doyle JS, Rajaratnam SM, Cunnington D.; Cognitive behavioral therapy for chronic insomnia: a systematic review and meta-analysis. *Ann Intern Med.* 2015;163(3):191–204.
7. Walsh JK, Engelhardt CL; The direct economic costs of insomnia in the United States for 1995. *Sleep.* 1999 May 1;22 Suppl 2:S386-83

# INFORMED CONSENT

Thank you for agreeing to be interviewed. This project is a requirement for the Family Medicine clerkship. It will be stored on the Dana Library ScholarWorks website. Your name will be attached to your interview and you may be cited directly or indirectly in subsequent unpublished or published work. The interviewer affirms that he/she has explained the nature and purpose of this project. The interviewee affirms that he/she has consented to this interview. Yes  X  / No

If not consenting as above: please add the interviewee names here for the department of Family Medicine information only.

Name:

Emily Fritz, LCSW

Lisa Mello, LPN