Sleep Quality Impact on Total Wellness & SUD

WELCOME

- General etiquette is appreciated during class.
- Breaks taken as needed- honor system.
- For online course, video is required to "face to face" credit.
- Two-Day format, approximately 3 hours each day.
- After Day Two, course eval will be shared, certificates generated by ADAD.

General Agenda

- Pre test
- Review of wellness dimensions
- Review of ASAM dimensions
- Key terms related to sleep quality
- Ways to track/improve sleep quality
- Post test
- Discussion / resources / networking

Getting to know each other:

- Dave Sprouse
 - LMHC,NCC, CSAC, CCS,
 - Prior Clinical Director-MAT/OP Comprehensive Care Setting
 - 20 years of healthcare experience, 15 years healthcare management experience
 - Currently in private practice only: 24 To Life, LLC
 - 808-400-6156 <u>TwentyFourToLife@outlook.com</u>
 - Contracted primarily with Xplor Counseling, LLC <u>www.xplorcounseling.com</u>
 - <u>Dsprouse@xplorcounseling.com</u>

Introduce your self to the group:

- Name
- * Affiliation
- Experience
- Other things we should know about you

Pre-Test

- Let's explore what we know prior to the presentation:
 - It is just a status check.
 - It helps us identify areas to spend more time on.
 - It is not your determining factor to get your certificate today.
 - You will take a post-test after the day's material is presented.
 - Complete the paper pre-test on your own. (for in-person only)
 - We will discuss as a group after each person is done.
 - Take a few minutes to write in your answer.
 - Feel free to take notes on this paper as we review the answers as a group.

Eight Dimensions of Wellness visual aid

EMOTIONAL

Coping effectively with life and creating satisfying relationships

ENVIRONMENTAL

Good health by occupying pleasant, stimulating environments that support well-being

INTELLECTUAL

Recognizing creative abilities and finding ways to expand knowledge and skills

PHYSICAL

Recognizing the need for physical activity, diet, sleep and nutrition

Adapted from Swarbrick, M. (2006). A Wellness Approach. Psychiatric Rehabilitation Journal, 29(4), 311–314.

WELLNESS

OCCUPATIONAL

Personal satisfaction and enrichment derived from one's work

FINANCIAL

Satisfaction with current and future financial situations

SOCIAL

Developing a sense of connection, belonging, and a well-developed support system

SPIRITUAL

Expanding our sense of purpose and meaning in life

Dimensions of Wellness-Text form

- **Emotional**—Coping effectively with life
- Environmental—environments that support well-being
- Financial—Satisfaction with financial situations
- Intellectual—finding ways to expand knowledge and skills
- Occupational—Personal satisfaction from one's work
- Physical—need for physical activity, healthy foods, and sleep
- **Social**—belonging, and a well-developed support system
- **Spiritual**—Expanding a sense of purpose and meaning in life

Wellness overview:

- Notice interconnectivity.
- Discuss how these areas connect and influence each other.
- Discuss how sleep quality is a variable in wellness.
- https://www.youtube.com/watch?v=tDzQdRvLAfM

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AT A GLANCE: THE SIX DIMENSIONS OF MULTIDIMENSIONAL ASSESSMENT ASAM's criteria uses six dimensions to create a holistic, biopsychosocial assessment of an individual to be used for service planning and treatment across all services and levels of care. The six dimensions are: Acute Intoxication and/or Withdrawal Potential **DIMENSION 1** Exploring an individual's past and current experiences of substance use and withdrawal **Biomedical Conditions and Complications DIMENSION 2** Exploring an individual's health history and current physical condition Emotional, Behavioral, or Cognitive Conditions and Complications **DIMENSION 3** Exploring an individual's thoughts, emotions, and mental health issues Readiness to Change **DIMENSION 4** Exploring an individual's readiness and interest in changing Relapse, Continued Use, or Continued Problem Potential DIMENSION 5 Exploring an individual's unique relationship with relapse or continued use or problems Recovery/Living Environment DIMENSION 6 Exploring an individual's recovery or living situation, and the

surrounding people, places, and things

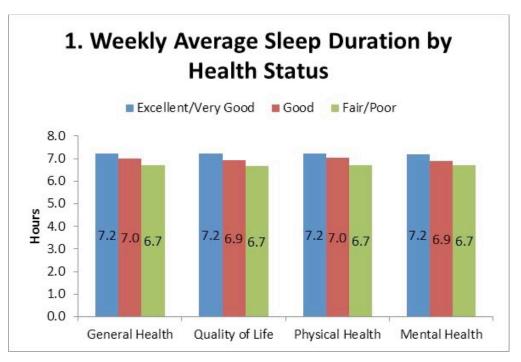
- Discuss each dimension
- Key items in each to include in a well-rounded counseling session?
- Where do you think sleep concerns would be best placed?

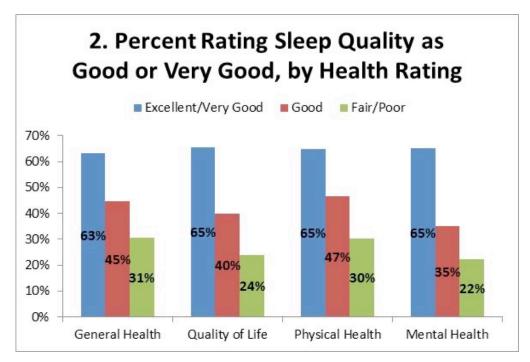
ASAM Dimensions: Text

- D1: Intoxication/Withdrawal
- D2: Biomedical
- D3: Emotional
- D4: Treatment Acceptance
- D₅: Relapse
- D6: Environment

The Need to Know:

• Why pay attention to sleep quality: correlations/causations





Source: National Sleep Foundation-

https://www.sleep foundation.org/professionals/sleep-america-polls/2015-sleep-and-pain and the professional states of the profe

More on the need to know:

- Today, the problem of too little sleep, and the quest for more of it, is as acute as ever:
- 27 percent of people in a new Consumer Reports survey of 4,023 U.S. adults said they had trouble falling asleep or staying asleep most nights,
- 68 percent—or an estimated 164 million Americans—struggled with sleep at least once a week.
 - Source: Consumer Report 2016
 - https://www.consumerreports.org/sleep/why-americans-cant-sleep/

How did we get here? Discussion time

• Increased technology ?

• Struggling economy?

Working more ?

• Synthetics ?

Response to poor sleep:

- Americans spent an estimated \$41 billion on sleep aids and remedies in 2015
- Forty-one percent of people who use over-the-counter sleep aids reported taking them for a year or longer, and 48 percent use the drugs several times per week.
- Continued sleep shortages contribute to depression, heart disease, lowered immunity, obesity, and type 2 diabetes, among other illnesses
 - Source: Consumer Report 2016 https://www.consumerreports.org/sleep/why-americans-cant-sleep/

Need to know continued:

- This trend poses many health risks. A host of studies and reports has linked insufficient sleep to depression, ADHD, obesity, Type 2 diabetes, cardiovascular disease, cancer, and Alzheimer's.
- Back in 2014, the CDC labeled sleep deprivation a public health epidemic—with over 70 million adults suffering from a sleep disorder.
- Sleeplessness is also connected to other severe consequences: The National Highway Traffic Safety Administration estimates that drowsy driving causes 1,550 deaths and 40,000 injuries annually in the United States.
 - Source: Forbes, 2017 https://www.forbes.com/sites/neilhowe/2017/08/18/america-the-sleep-deprived/#6670c851a385

Let's talk money:

- "Sleep deprivation costs the U.S. economy as much as \$411 billion in lost productivity every year" RAND, 2017 (https://www.rand.org/blog/rand-review/2017/03/the-costs-of-poor-sleep-are-staggering.html)
- Pain increased with poor sleep: headache, fibromyalgia rates. So does fatigue and cognitive distortions.
 - Finan, P. H., Goodin, B. R., & Smith, M. T. (2013). The association of sleep and pain: an update and a path forward. The journal of pain: official journal of the American Pain Society, 14(12), 1539–1552. doi:10.1016/j.jpain.2013.08.007
- The cost of healthcare has been on the rise since 2000...
- "ill defined" categories have been the highest grower (items that include colds, preventive care, and uncategorized items)
- Endocrine disorders, infectious disease and mental health disorders round out the top 4 highest growing categories of healthcare costs since 2000
 - $\bullet \quad https://www.healthsystemtracker.org/chart-collection/much-u-s-spend-treat-different-diseases/\#item-start$

Clinical application:

- Group activity:
- Split the group in half, form 2 groups
 - Group 1 to my left
 - show how poor sleep impacts dimensions of wellness (SAMHSA)
- Group 2 to my right
 - show which ASAM dimensions can be impacted by poor sleep (and briefly how)
 - > Abbreviations and short-hand are fine as long as you can explain it.
 - > We will discuss as a group in a few minutes.



Action stage:

- We now know / were reminded; sleep is critical to total wellness.
- As such, it is an important part of our jobs as helping professionals.
- Now let's break down some key terms and components of sleep to increase or fine-tune ability to conceptualize a sleep quality scenario.
- Then we can offer support to those we serve to increase sleep quality, lower medical problems, and perhaps save their lives.

Sleep environment (Bedroom environment)

- We use the example of a bedroom and assume (for us today) that we all sleep there (we know some of our clients have different scenarios, consider this when assessing and counseling).
 - Consider the senses:
 - Pair up, take one sense each, discuss how it can impact the environment or sleep status overall)
 - we will share as a large group after
 - Site, Smell, Hearing, Taste, Touch



Review of suggestions for sleep environment

- WIFI permitting:
 - Sleep Foundation web page
 - https://www.sleepfoundation.org/bedroom-environment/taste
 - Interactive page
 - Review suggestions and key factors per sense as it relates to bedroom environment.

Sleep Debt

- "also known as sleep deficit, describes the cumulative effect of a person not having sufficient sleep. It's important for people to understand that a large sleep debt can well lead to physical and/or mental fatigue"-American Sleep Association.
- Compare this to a financial debt
 - Gets bigger and harder to repay the later the bill becomes
 - We lack the capacity to pay back in lump sum
 - Take a long time

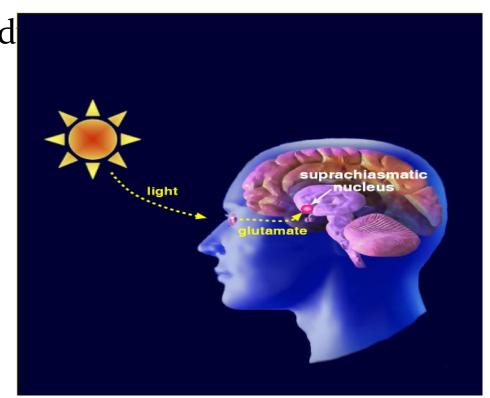
Basic sleep mechanics:

- The body summons sleep in two ways:
 - Boosting circulating levels of the neurotransmitter adenosine
 - Adenosine is partly a by-product of the cells' energy expenditure
 - acts like a dimmer switch, turning down many of the processes associated with wakefulness, such as attention, memory, and reactions to physical stimuli
 - As brain levels of adenosine mount, we feel drowsier
 - What does this suggest about recommended daily activity?
 - 2. Sending signals from the circadian clock, which controls the body's daily rhythms.
 - not just the pattern of sleeping and waking during the 24-hour cycle, but also fluctuations in body temperature, blood pressure, and levels of digestive enzymes and various hormones

• Source: Harvard Health Publishing- https://www.health.harvard.edu/womens-health/repaying-your-sleep-debt

THE SCN (Suprachiasmatic Nucleus)

- Within the hypothalamus sits the SCN, the body's central pacemaker (or master clock).
- Light is the predominant controller of the bod
- Highly influenced by the input of light.
- Think about technology use.....
- Think about those who are blind..



Select sleep disorders

- Non-24: sleep-wake disorder (disrupted circadian rhythm)
 - http://www.non-24.com/
- $\bullet \ \ Sleep\ Apnea- {\it https://www.sleepapnea.com/diagnosis/about-sleep-apnea/linear-linear$
- Restless Leg Syndrome https://www.ninds.nih.gov/Disorders/Patient-Caregiver-Education/Fact-Sheets/Restless-Legs-Syndrome-Fact-Sheet
- Narcolepsy-https://www.sleepfoundation.org/articles/narcolepsy
- Insomnia-Very generalized, it helps to investigate further.
- Discuss causes, multiple factors in sleep ability and quality:
 - Many sleep disorders are aided by improving sleep hygiene.
 - https://www.sleepfoundation.org/insomnia/what-causes-insomnia

What to do about poor sleep:

- Sleep hygiene corrects most sleep difficulties
- Medical interventions is sometimes needed
- Seeing the Dr. is a good thing
 - They can refer for sleep study
 - Involves sleeping in a medical facility for one night in most cases
 - Painless
 - Generates an extensive report on many variables to conceptualize the case
 - Brain waves
 - Chin muscle activity
 - Heart rate
 - Breathing
 - Oxygen levels
 - Leg movements

Sleep Hygiene tips from the CDC

- https://www.cdc.gov/sleep/about_sleep/sleep_hygiene.html
- Be consistent. Go to bed at the same time each night and get up at the same time each morning, including on the weekends
- Make sure your bedroom is quiet, dark, relaxing, and as a comfortable temperature (environment)
- Remove electronic devices, such as TVs, computers, and smart phones, from the bedroom (remember SCN)
- Avoid large meals, caffeine, and alcohol before bedtime
- Get some exercise. Being physically active during the day can help you fall asleep more easily at night. (remember adenosine)

Relationship to SUD

- SUD clients 5 to 10 times more likely to have sleep disorders
 - https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2766287/
- high school students who reported getting less than 8 hours of sleep per night were significantly more likely than those who slept 8 hours or more to be current users of tobacco (22% vs. 15%), alcohol (46% vs. 34%), and marijuana (23% vs. 17%) and lifetime users of illicit drugs (16% vs. 11%)
 - https://www.centeronaddiction.org/the-buzz-blog/sleep-deprived-teens-are-increased-risk-substance-use

Consider your own clients:

- You've probably heard about sleep or fatigue (or both) being a factor in the client's substance use
 - Examples:
 - "I can't sleep unless I have a little heroin".
 - "I cant sleep without Ambien".
 - "I have to do a little ice to get going in the morning".
 - "I do a couple hits on the joint each night to fall asleep".

Sleep deprivation and fatigue:

- It is unpleasant to be fatigued and sleep deprived
- Many may feel desperate in this scenario and turn to illicit drugs or abuse OTC or Rx medications.
- Consider drugs that may be abused
 - Two groups
 - Use the board
 - Name as many drugs/substances that you can think of that a person may use/abuse in response to inability to sleep or being fatigue:

Ethical discussion:

- Bob is a 22 year old male who is in Tx for opiate use disorder. He is in an MAT/OP setting taking methadone.
- Methadone corrected opiate withdrawal and his opiate use has been eliminated.
- Bob continues to report trouble sleeping, has Rx Alprazolam.
- Bob stated he got this from his Dr./ said he had anxiety.
- Bob stated he just uses it to go to sleep and tells the Dr. his anxiety is not better.
 - Any concerns from an SUD Tx perspective?
 - Ethical concerns?

Common Drugs of Abuse

- Will highlight select drugs of abuse.
- Not "all".
- Recall symptoms of intoxication and withdrawal as we discuss each.

Opiates / Opioids
Common Reasons for continued illicit use/abuse

• "Rush", Drowsiness, "come down", pain, opiate withdrawal, to sleep

Routes of administration

- Oral, sniff, smoke, inject.
 - Sometimes mixed with stimulants and called "speed ball"
 - Very dangerous to cardiac health in particular
 - (drugabuse.gov)

Opiates / Opioids

- morphine
 - extended release: MS Contin®
- codeine
- hydrocodone
 - combined with Tylenol: Vicodin®, Norco Lortab®
- oxycodone
 - extended release: OxyContin®
 - combined with Tylenol: Percocet[®]
- meperidine (Demerol®)
- hydromorphone (Dilaudid®)
- tramadol (Ultram®)
- fentanyl





Notes on Opioid Withdrawal

Subjective (self-report)

- Joint/muscle aches
- Insomnia
- Nausea/vomiting
- Diarrhea
- Anxiety

Objective (observable)

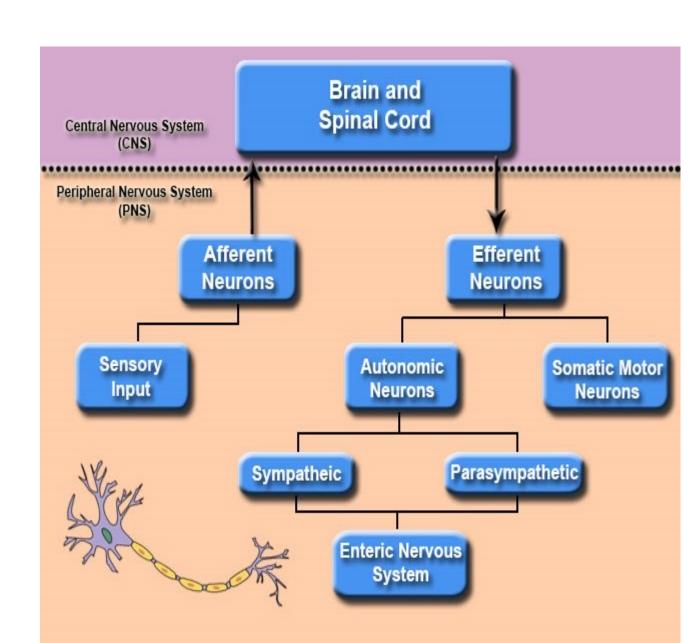
- Runny nose
- Watery eyes
- Sweating
- Yawning
- Goosebumps
- Dilated pupils
- Restlessness

CNS Depressants Review of nervous system

Review of nervous system organization to understand importance and medical relevance.

• Include:

- Benzodiazepines (Xanax, lorazepam, etc.)
- Barbiturates (phenobarbital, fiorinol, etc.)
- Sleep medications (Ambien, Lunesta, etc.)
- Muscle relaxants: Cyclobenzaprine (Flexeril)
- Often taken in pill form



Stimulants

- Highly neurotoxic- how much of our body needs functioning nerves?
- Produce a high associated with energy and euphoria.
 - Misused often with mismanaged sleep and medical conditions
- Route of administration include; smoking, pills, sniffing, injection.
 - Examples include:
 - Methamphetamine
 - Cocaine
 - Prescription stimulants are also abused: Adderall, methylphenidate, etc.
 - Schedule II
 - (drugabuse.gov)

Cannabis

- Schedule I at federal level
- Often used/abused for cited reasons such as
 - Pain, nausea, anxiety, etc.
 - Some <u>claim</u> it helps with opiate withdrawal
 - Let's consider the science of opiate receptors and cannabinoid receptors in the brain
- Routes of administration include:
 - Edibles, smoking, brewed into teas
 - CBD comes from the cannabis plant.
 - As such, it can contain THC, which is still illegal as it comes from a Schedule I drug/plant

Over The Counter Medications • Many OTC medicines are abuse.

- Despite not needing an Rx for OTC medicines, they are **still dangerous** when misused and abused.
- Examples include
 - Tylenol- mild analgesic, overused for pain
 - Aspirin- mild analgesic, overused for pain
 - Ibuprofen- mild analgesic but is overused for pain
 - Loperamide- used for diarrhea; abused in bulk for opiate-like high
 - Benadryl- is an antihistamine, but is abused as a sleep aid
 - Nyquil- abused as a sleep aid
 - Sudafed- is intended for minor cold Sx, but is abused as a stimulant

Select Medication Categories with indications and risks

- Benzodiazepines
 - Often used to treat anxiety, seizure and sometimes sleep disorders.
 - Includes Alprazolam (Xanax), Clonazepam, Lorazepam, Valium,
- Schedule IV
- Risks:
 - Can be habit forming
 - Withdrawal can be severe and include seizures
 - Very dangerous in combination with other respiratory depressants (such as opiates)

Opioids + Benzos

- Methadone can cause sedation and respiratory depression. Combined with other drugs that cause also sedation and respiratory depression --> doubly dangerous
- Benzodiazepines medications used to treat anxiety
 - Combination with opioids causes increased risk of respiratory depression and death
 - Risk of overdose death with opioids + benzos may be 10 times higher than with opioids alone
 - Can potentiate effects of opioids:
 can be a way to make methadone dose feel stronger

Opiates / Opioids

- Most are Schedule II
- Used to treat sever pain (comes in pills, IV, patches, injection)
- Includes
 - morphine, hydrocodone combined with Tylenol: Vicodin[®], Norco[®], Lortab[®]
 - Oxycodone, extended release: OxyContin®, combined with Tylenol: Percocet®
 - meperidine (Demerol®), hydromorphone (Dilaudid®), tramadol (Ultram®)
 - fentanyl
- Risks:
 - High tolerance and dependence risk
 - Respiratory depression, Overdose risk.
 - Not to be taken in conjunction with other respiratory depressants.

Stimulants

- Schedule II
- Include
 - Methylphenidate (Ritalin), amphetamine salts.
- Can be prescribed to treat ADHD and narcolepsy
- Prescribed in pill form
- Risks
 - Dependence, tolerance
 - Heart arrhythmia
 - High abused potential in clients with sleep disorders or poor time management or other medical conditions.

Decongestants

- Can be bought OTC or prescribed
- Use to treat cold symptoms such as congestion
- Produced in pill / gel cap form and sometimes liquid.
- Include:
 - Dextromethorphan, Sudafed (Pseudoephedrine), Robitussin
 - Can include guaifenesin which can also have stimulant effect and dehydration, dizziness, fatigue.
- Risks:
 - Depending on ingredients, can have stimulant effect which can lead to abuse.
 - Can have psychological symptoms if taken in high doses

Antihistamine

- Use to treat allergic conditions such as itchiness, watery eyes, etc.
- Can be prescribed or OTC.
- Common Trade name is Benadryl (Diphenhydramine)
- Promethazine also falls into this category
 - Used to be standard treatment for nausea
 - Has sedating effect, risk of abuse and misuse
 - Zofran is used more instead now without drowsiness

- Risks:
 - Can be abused as sleep aid
 - Respiratory depression risk

Ethics Discussion

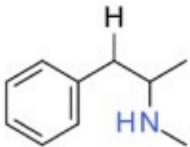
- Cannabis
 - Schedule I per DEA.
 - Some states allow medicinal use, such as Hawaii.
 - Chronic pain, nausea, anxiety treatment.
 - Claims of treating opiate withdrawal
 - Some states allow recreational use.
 - How does this challenge the field of substance abuse counseling?
 - How does this challenge the field of medicine in general?
 - Medical cannabis card compared to dispensary bypass?
 - Risks and side effects include: memory impairment, body movement impairment, cognitive impairments, psychosis, delusions.

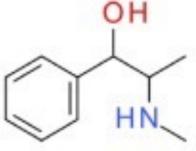
Interpretation of Urine Drug Screen

- UDS is a *screening* test it is not perfect
 - False-positives AND false-negatives can happen.
 - It helps to know what your clients are taking; prescribed, OTC or illicit.
 - Confirmation can be made using GC/MS.
 - There are many versions of tests kits available.
- Can detect drugs down to a certain concentration
 - Drug levels less than the cut-off concentration will not be detected and will show as negative.
 - There is often an extra fee associated with confirmatory testing.

False Positives

- Can occur when another substance is very similar in structure to the drug (a look-alike)
- Pseudoephedrine found in OTC decongestants can sometimes cause false positive for methamphetamine







Methamphetamine

Pseudoephedrine

Testing for Rx drugs

- If a Tx provider is curious about the use of Rx drugs, a lab test can sometimes be ordered.
- Sometimes called a "level".
- A peek and trough can also be done to test compliance with Rx medications.
- These tests are additional and cost extra and require a Physician order. It is rare to see it done since medical is often seen as a separate field from substance Tx.

Post Test Upcoming

- Get into 2 groups again (in person only)
- Jeopardy style- points for correct answer, no minus points for incorrect.
- New spokesperson to choose a question each time
- ** If a team gets 5 in a row correct, other team gets a turn
- Discuss question as a group and provide an answer within 10 seconds.
- Wrong answer results question discarded, and other team gets a turn to choose next question.
- Final jeopardy does come with penalty for wrong answer.
- Put all notes away!!!!!!

Post-Test

Sleep D/O	Drugs/Meds	ASAM	Dimensions of Wellness	Miscellaneous
<u>\$100</u>	<u>\$100</u>	<u>\$100</u>	<u>\$100</u>	<u>\$100</u>
<u>\$200</u>	<u>\$200</u>	<u>\$200</u>	<u>\$200</u>	<u>\$200</u>
<u>\$300</u>	\$300	<u>\$300</u>	\$300	\$300
<u>\$400</u>	\$400	<u>\$400</u>	<u>\$400</u>	<u>\$400</u>
<u>\$500</u>	<u>\$500</u>	<u>\$500</u>	<u>\$500</u>	<u>\$500</u>
<u>Final Jeopardy</u>				

Sleep D/O- 100

• This term is used to describe a general difficulty falling or staying asleep.

Insomnia



Sleep D/O- \$200

This condition involves an increased desire to move the legs or the legs moving on their own during times of attempted sleep.

Restless Leg Syndrome (RLS)



Sleep D/O- \$300

This condition is more common in blind patients and involves difficulty with circadian rhythm.

■ Non-24



Sleep D/O- \$400

This condition involves a person falling asleep randomly when they did not intend to.

Narcolepsy



Sleep D/O- \$500
This condition involves difficulty or cessation of breathing during sleep or attempted sleep. This particular version of the condition involves the brains desperation attempt to gasp/breath to correct this.

Daily double**



Drugs/Meds - \$100

This over the counter item/supplement is used to help with sleep

Melatonin will also accept benadryle



Drugs/Meds-\$200

In the opiate class, abuse of this drug is on the rise. It is sometimes prescribed in patch form for pain. A few granules however can cause death.

Fentanyl



Drugs/Meds - \$300

Zolpidem is the chemical name for a commonly prescribed sleep aid.
What is the more common name of this drug?

Ambien



Meds/Drugs - \$400

Some clients abuse Alprazolam in efforts to fall asleep. What is this med truly prescribed for?

Anxiety



Drugs/Meds - \$500

Abuse of this class of drugs is on the rise. It is often used for pain and withdrawal. It can be prescribed for high level pain. Some abuse if for sleep. Name the class of drug.

Opiates



When discussing the client's drug use and relapse scenarios, which ASAM dimension is being assessed?



Inquiring on the client's sleep is part of their medical health. Which ASAM dimension would this pertain to?

2



Symptoms of sleep D/O's can look much like depression. If the client is describing depression and other mood-related items, which ASAM dimension is being discussed?

3



The client tells you their can't sleep at night because it is too noisy at home. In addition to D2, which dimension is being discussed in regards to the clients' environment at home?

6



Client states they have slept better since starting MAT/OP Tx. Aided from D2, which dimension is being assess in regards to being on MAT and the assistance that came with that Tx?

DAILY DOUBLE



Poor sleep often causes mood fluctuations. Which dimension of wellness pertains to fluctuating moods?

Emotional



One of the many symptoms of poor sleep is body pain. Which dimension of wellness fits most with body pain?

Physical



Client stated they have been late for work due to sleeping poorly.
Which dimension so wellness is impacted by missing work?

Occupational or /and financial



Client states they struggle to sleep because the neighbors stay up late drinking and making noise. Which dimension of wellness is directly impacted by this type of living condition?

Environmental



One symptom of sleep deprivation is declined cognitive ability, including memory. Which dimension of wellness is directly suffering when no longer seeking this academic type of activity?

Intellectual



What type of testing can be done to assess a sleep D/O?

Sleep Study



What is the body's rhythm associated with sleep?

Circadian rhythm



One popularly believed cause of RLS is the lack of _____ which can be easily replenished by including it in the diet.

Iron



Mixing opiates and benzo's are is very dangerous. What is the primary medical concern in this case? Not just OD/ death but think of what leads to it.
TRIPLE POINT QUESTION

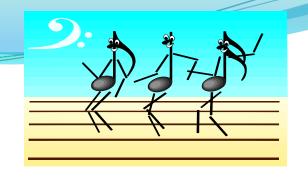
Respiratory depression



Name the anatomical structure that sense light and triggers the brain to keep us awake? Abbreviation is acceptable.

SCN





Final Jeopardy

Caffeine is used to stay awake by many. This has a stimulation effect by blocking the ______receptors in the brain which prevents sleepiness.

Adenosine



Final notes

- We learned / refreshed a lot of material today; good job!
- I hope this helps us all apply more knowledge to our comprehensive care efforts for our clients.
- If you like this course, let me now and I'll schedule it again.
- If you like my style, check out my webpage for more of my CE events.
- I am also developing distance education courses.
- Please complete the evaluation, let loose on suggestions for improvement, it only helps me design better courses.
- Take a card, leave a card; let's network, stay in touch.

How to reach me:

- TwentyFourToLife@Outlook.Com (business)
 - 808-400-6156
 - CE events (Check ADAD calendar first though for events that may be cheaper)
 - Clinical Supervision
 - Private Practice Counseling
 - www.24ToLifeLLC.com
- Xplor Counseling- Assistant Director
 - <u>Dsprouse@xplorcounseling.com</u>
 - Assistant Director as of October 2021.