

Opioid Use Disorder Education and Treatment ECHO Series

Session 5 – Overlap of Addiction and Chronic Pain

January 18, 2022

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Family Medicine and Addiction Physicians



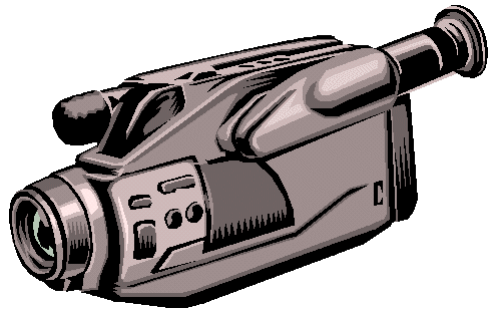
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0

Announcements



1



SESSIONS ARE RECORDED



YES, THERE'S *FREE* CME

Attendance

- Please chat us the names of people on ECHO if there are multiple people in your room!
- “Re-name” your self so we know who’s here!
- Please turn your video on!
 - Human connection!
 - And we do NOT care if you are eating!



4

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Case Presentations!

The ECHO model is based on case-based learning! The case presentation form is on the MAFP website and on the announcements email!

BUT feel free to present in any de-identified format!

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5

Upcoming Tuesday ECHO Sessions

- **Tuesday, February 1, 2022:** Addiction Screening and Treatment Basics
- **Tuesday, February 15, 2022:** In-depth Look at MOUD Treatment Options
- **Tuesday, March 1, 2022:** Prescribing to Your First MAT/MOUD Patient (Induction/Micro-induction)
- **Tuesday, March 15, 2022:** Infectious Disease Complications

Upcoming Wednesday ECHO Sessions

- **Wednesday, January 19, 2022:** ?
- **Wednesday, January 26, 2022:** Negative Consequences of anti-depressant Medications Part 1 Dr. Cole Pueringer
- **Wednesday, February 2, 2022:** Negative Consequences of anti-depressant Medications Part 1 Dr. Cole Pueringer

COVID19 ECHO

Visit the MAFP website to register

- **Thursday, January 20:**
Testing Options and Limitations
- **Thursday, January 27:**
COVID and Kids



“The Addiction Connection Podcast”

**Weekly addiction
topics- Tuesday
release day!**

www.buzzsprout.com/954034

(Or anywhere you get your podcasts!)

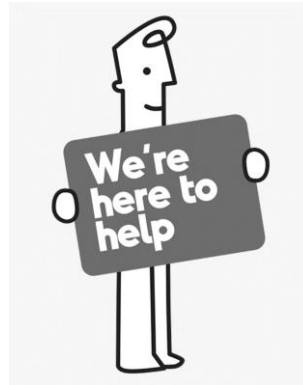
Email us questions:

theaddictionconnectionpodcast@gmail.com



Technical Assistance

- **We are ALWAYS here for you!**
 - Program implementation
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 - Anything!
- **Call us anytime:**
 - Heather Bell: 320-630-5607
 - Kurt DeVine: 320-630-2507

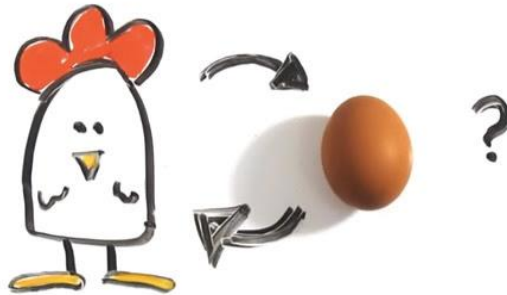


Objectives:

- Describe basic neurobiology that is shared by addiction and chronic pain
- Recognize the comorbidities that are often present in both addiction and chronic pain
- Identify the clinical characteristics which are similar in addiction and chronic pain

Chronic Pain and Opioid Use Disorders Overlap

- The relationship between chronic pain and opioid use disorders (OUD) is COMPLEX



12

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Chronic Pain and Opioid Use Disorders Overlap cont.

- Chronic pain may predate opioid use and OUD
- Chronic pain may also develop after onset of opioid use and OUD (as in the case of opioid hyperalgesia – to be discussed later)

13

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Chronic Pain and Opioid Use Disorders Overlap cont.

- OUD and chronic pain are both commonly complicated by mental health diagnoses, such as:
 - Depression
 - Bipolar disorder
 - Schizophrenia

14

14

Chronic Pain and Opioid Use Disorders Overlap cont.

- Study by Hser et al.
 - Chronic pain among patients with opioid use disorder: results from EMR data



15

15

Chronic Pain and Opioid Use Disorders Overlap cont.

- Broke up patients into four groups
 1. No chronic pain with OUD
 2. OUD prior to pain
 3. OUD and pain at the same time
 4. Chronic pain prior to OUD



16

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Chronic Pain and Opioid Use Disorders Overlap cont.

- Of the 4.6 million patients in the system, 5,307 in the study cohort had a diagnosis of an OUD
- One criticism of the study is that a majority of patients were male, white, and had private insurance

17

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Chronic Pain and Opioid Use Disorders Overlap cont.

- Results of study
 - 64.4% of patients with OUD had chronic pain conditions
 - 61% of this group had pain prior to OUD diagnosis



18

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Chronic Pain and Opioid Use Disorders Overlap cont.

- Results of study cont.
 - Patients with OUD prior to developing pain were more likely to have another SUD
 - Patients with OUD first also, as you might suspect, had the highest rates of HIV and Hepatitis C



19

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Chronic Pain and Opioid Use Disorders Overlap

- Results of study
 - Interestingly, patients who developed chronic pain first had significantly higher rates of:
 - Mental disorders
 - Heart disease
 - Respiratory disease
 - Sleep disorders
 - Cancer
 - Diabetes



20

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Chronic Pain and Opioid Use Disorders Overlap cont.

- OUD prior to chronic pain
 - Highest prevalence of ETOH, cocaine and other drug use
 - Highest incidence of alcohol or drug induced disorders

Alcohol intoxication
- intoxication delirium
Alcohol withdrawal
- withdrawal delirium
Alcohol-induced persisting dementia
Alcohol-induced persisting amnesic disorder
Alcohol-induced psychotic disorder, with delusion
Alcohol-induced psychotic disorder, with hallucination
Alcohol-induced mood disorders
Alcohol-induced anxiety disorders
Alcohol-induced sexual dysfunctions
Alcohol-induced sleep disorders

21

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Chronic Pain and Opioid Use Disorders Overlap cont.

- Results of study
 - When pain developed prior to or simultaneously with OUD, these patients had:
 - The highest rates of sedative, hypnotic, and anxiolytic use
 - The lowest rates of ETOH, cannabis, amphetamine, cocaine, and hallucinogen use



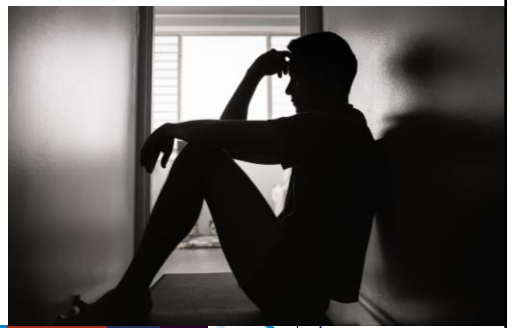
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22

Chronic Pain and Opioid Use Disorders Overlap cont.

- Results of study
 - 70% of the entire sample had co-morbid mental health disorders
 - Lowest prevalence was in patients with OUD alone



23



23

Chronic Pain and Opioid Use Disorders Overlap

- An aside:
 - A state of enhanced pain sensitization in patients who are on chronic opioid therapy



24

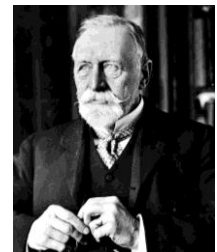
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Chronic Pain and Opioid Use Disorders Overlap cont.

- An aside:
 - First described by Thomas Clifford Albutt in 1870 when he stated: “At such times I have certainly felt it a great responsibility to say that pain, which I know is an evil, is less injurious than morphine, which may be an evil. Does morphine encourage the very pain it pretends to relieve?”



25

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CHRONIC PAIN- CHRONIC BRAIN

Mechanisms of Chronic Pain and Addiction

NEURON 2015 – ELMAN AND BORSOOK

Let's lay some groundwork...



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Chronic Pain

- “Chronic pain is considered by some to be a CNS disease”



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Chronic Pain cont.

- Both pain and addiction disorders are characterized by similar issues
 - Impaired hedonic capacity
 - Compulsive drug seeking
 - High stress



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Chronic Pain cont.

- What drives this?
 - Reward deficiency
 - Impaired inhibitory control (loss of frontal lobe)
 - Incentive sensitization
 - Aberrant learning
 - Antireward allostatic neuroadaptations

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Chronic Pain cont.

- How big of an issue is chronic pain?
 - 120 million Americans affected
 - Economic impact about \$600 BILLION
 - Loss of productivity
 - Medical expenses
 - Disability



30

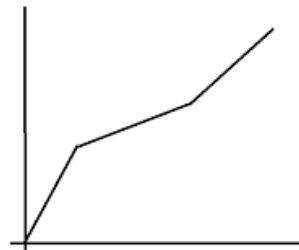
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Chronic Pain cont.

- Things to consider:
 - The numbers are increasing steadily
 - Analgesics (including opioids) are ineffective about 70% of the time in pooled analysis of placebo-controlled trials



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Chronic Pain cont.

- Terms to understand
 - Reward - integrated set of pleasurable and motivation processes occurring at both a conscious and unconscious level



32

32

Chronic Pain cont.

- Terms to understand
 - In contrast, pleasure represents a variety of positive affective states supporting satisfaction of immediate needs (food, water, sex) and social behaviors (attachment and so on)



33

33

Chronic Pain cont.

- Pleasure is distinct from euphoria
 - Euphoria is a more specific affective state of well being, self confidence and sociability



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Chronic Pain cont.

- Can we use addiction neurobiology to understand chronic pain?



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Chronic Pain cont.

- No clinical studies directly link chronic pain and addiction but...a cumulative body of evidence suggests two ideas



36

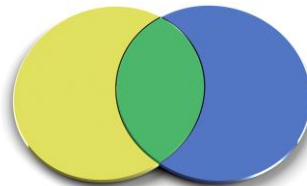
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Chronic Pain cont.

1. There is substantial overlap between brain regions that are engaged by ongoing pain, its onset, its offset, addictive drugs, and analgesic drugs.



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Chronic Pain cont.

2. Predisposition for addictive behavior is ingrained in pain neuropathology because of neural changes that are comparable to long term substance use – even in the absence of prior substance use.



38

38

Chronic Pain cont.

- Bottom line
 - The relationship between chronic pain and addiction may be explained by partly shared neural systems

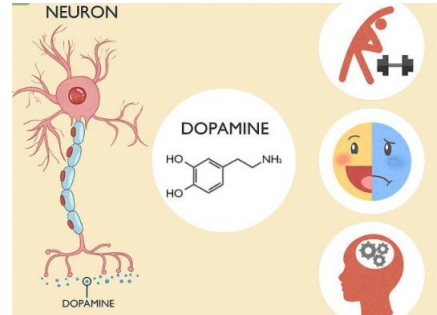


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39

Chronic Pain cont.

- And further...
 - Both chronic pain and addiction are associated with dopaminergic surges in reward motivation and learning centers



40

40

Chronic Pain cont.

- As a wrap up, let's go through the similarities of clinical characteristics of pain and addiction

What are the implications?

41

41

Pain Clinical Characteristics

| DSM-5 SUD Criteria | Clinical Characteristics of Pain |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Tolerance | Pain tolerance develops in athletes, victims of torture. There is also an interesting rewarding effect of pain discontinuation |

Pain Clinical Characteristics cont.

| DSM-5 SUD Criteria | Clinical Characteristics of Pain |
|----------------------------------------------------------------------------------|----------------------------------|
| Giving up or reducing important social, occupational, or recreational activities | Also a hallmark of chronic pain |

Pain Clinical Characteristics cont.

| DSM-5 SUD Criteria | Clinical Characteristics of Pain |
|-----------------------------------------------------|------------------------------------|
| Craving or strong desire or urge to use a substance | Pain motivates to seek pain relief |

Pain Clinical Characteristics cont.

| DSM-5 SUD Criteria | Clinical Characteristics of Pain |
|---------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Taking a substance in larger amount and for a longer period than intended | Compulsive seeking of opioids is driven by the desire to ameliorate inadequately treated pain |

Pain Clinical Characteristics cont.

| DSM-5 SUD Criteria | Clinical Characteristics of Pain |
|---------------------|---------------------------------------------------------------------------------------------------------------|
| Withdrawal symptoms | Pain patients often develop increased stress, arousal and anxiety which plays a key role in pain exacerbation |

Pain Clinical Characteristics cont.

| DSM-5 SUD Criteria | Clinical Characteristics of Pain |
|------------------------------------------|-----------------------------------------------------------|
| Taking a substance to relieve withdrawal | Self inflicting pain to improve negative affective states |

Pain Clinical Characteristics cont.

| DSM-5 SUD Criteria | Clinical Characteristics of Pain |
|--------------------------------------------------------|----------------------------------|
| Continue use despite knowledge of adverse consequences | Pain relief can be exhilarating |

Chronic Pain cont.

- So, if pain and addiction share a common neurobiological foundation, there could be significant implications in treatment and monitoring.

Chronic Pain cont.

- For example:
 - Exposure to addictive substances may predispose a patient to development of chronic pain
 - Development of a chronic painful condition may increase the risk of a substance use disorder

References

- Hser YI, Mooney LJ, Saxon AJ, Miotto K, Bell DS, Huang D. Chronic pain among patients with opioid use disorder: Results from electronic health records data. *J Subst Abuse Treat.* 2017 Jun;77:26-30. doi: 10.1016/j.jsat.2017.03.006. Epub 2017 Mar 9. PMID: 28476267; PMCID: PMC5424616.
- Elman I, Borsook D. Common Brain Mechanisms of Chronic Pain and Addiction. *Neuron.* 2016 Jan 6;89(1):11-36. doi: 10.1016/j.neuron.2015.11.027. PMID: 26748087.

Poll Questions

1. Are you currently prescribing buprenorphine for opioid use disorder?
 - YES
 - NO
2. If yes, what is the approximate number of patients you are treating with buprenorphine?

52



52

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Podcast:
The Addiction
Connection

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53