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Putting MAT back into Rehabilitation

Disclosures

- I am employed by Courage Kenny Rehabilitation Institute, part of Allina Health, & the Institute for Chronic Pain
- Otherwise, I have no conflicts of interest regarding relevant financial interests in making this presentation and my presentation does not include discussion of the above-named employers, or an unlabeled use of a commercial product, or an investigational use not yet approved for any purpose.

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Objectives

- Participants will acquire an understanding that while treatment of OUD has made signficant progress in recent years, it is still in its infancy and often pursued without a concomitant rehabilitation.

- The participant will understand how OUD, like other forms of addictions, are a multifactorial condition that is the product of neuroplastic changes.

- Learning based therapies, such as rehabilitation and psychotherapies, target the CNS to produce neuroplastic changes that are therapeutic for many conditions, including addictions such as OUD.

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Zeitgeist of Medication-Assisted Treatment (MAT) 1.0

- It's about saving lives
- It's about downstream problems of long-term opioid management for pain
  - These problems won't end soon, even if all opioids for pain stopped today (and they haven't)

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Zeitgeist of Medication-Assisted Treatment (MAT) 1.0

- It's about saving lives
- It's about downstream problems of long-term opioid management for pain that won't end soon, even if all opioids for pain stopped tomorrow (and they haven't)
- So there is a sense of urgency, do something now

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Zeitgeist of MAT 1.0 (contd)

- This urgency, and the actions taken by the field because of it, is furthering a split between opioid use disorder (OUD) treatment and most other forms of substance use disorder (SUD) treatment that has existed for some time
- Traditional SUD tx vs methadone maintenance
  - Both interdisciplinary, but one focused on abstinence and the other maintenance
- Office-based buprenorphine
  - Single modality, maintenance
- Split: pharmacological interventions treat addiction, while rehabilitative interventions treat comorbid conditions (eg, anxiety, trauma, depression)

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Zeitgeist of MAT 1.0 (contd)

- Increasing sentiment that no other modality is helpful or needed, besides MAT for OUD
  - Increasing discussion that traditional SUD tx 'doesn't work'
  - MAT is changing to simply MT, despite limited research findings (other than it saves lives)
- Abstinence doesn't work and as such is contraindicated

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Is anyone else uneasy with this state of affairs?

- Whether because it's all-hands-on-deck-to-save-lives now or by design, we act to save lives today, but place pts on a trajectory that lasts a lifetime
  - What is our plan for a lifetime? And is it realistic?
  - Is it good enough? Should we be satisfied with single modality maintenance?
    - Especially when we have no treatment that is highly effective

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Is anyone else uneasy with this state of affairs?

- Saving lives today puts pts on a lifelong trajectory…
- Only a single modality is necessary belief:
  - How do we ensure against a repetition of the opioid hubris of the 90's?
  - We don't consider single modality treatment advisable or optimal in any other multifactorial, biopsychosocial health condition
    - Chronic pain, heart disease, diabetes, depression, etc.

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Is anyone else uneasy with this state of affairs?

- Saving lives today puts pts on a lifelong trajectory…
- Only a single modality is necessary belief…
- Belief that abstinence is contraindicated:
  - Lessons from pain rehab -- we routinely taper high-dose opioid pts who have been on opioids for years
    - Data indicate that pts continue to do well even years after taper
      - Suggesting that long-term exposure to opioids can neuroplastically wind the brain to become opioid dependent, but can be neuroplastically unwound in some patients via a slow taper and the distress tolerance training of pain rehabilitation (more to come on that!)
  - This the same at risk population, albeit upstream from the flow, that are put on MAT

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My Argument for MAT 2.0

- We should strive for a model of care that is
  - Interdisciplinary, reflecting the biopsychosocial condition that addiction is
  - Even in the absence of strong findings on the effectiveness of SUD treatments
  - Informed by science of addiction, human attachments/relationships and neuroplasticity
  - Engages the therapies of rehabilitation that focus on neuroplasticity, particularly in its distress tolerance training, and in its relationship building aspects
  - Thoughtfully allows for the full spectrum of trajectories from abstinence to slow reductions of MAT to full MAT maintenance

High-level Overview of OUD

- Risk factors are multifactorial and biopsychosocial:
  - Congenital & acquired constitutional vulnerabilities; premorbid & concurrent trauma, anxiety, depression & centralized pain at time of exposure; other SUD's at time of exposure; dose, route & duration of exposure
- These factors are entrained in limbic system, nucleus accumbens (Nac), ventral tegmental area (VTA), & prefrontal cortex (PFC):
  - all involving aspects of fight-or-flight, reward (both approach and avoid), motivation, cognition
- Progression: reward based motivation is not to attain a positive experience, but to avoid an aversive experience
  - Repeated pairing of unpleasant experiences with exogenous opioid-induced avoidance leads to increasing inability to tolerate other unpleasant experiences, aversive experiences (to pain, negative mood states, opioid withdrawal, life itself without opioids)
  - Leads to a persistently reactive limbic system
  - Impairs decision-making fostering an automaticity of the pairing between aversive experience and behavioral use
  - Repetitive exogenous opioid use biopsychosocially disrupts the main catalyst for releasing endogenous opioids (i.e., attachments & interactions with others), and social isolation results
  - These experiences are neuroplastically entrained or wound in the brain to produce addiction

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Normal Functioning Endogenous Opioid Systems

- Constitutional & repeated good-enough attachments entrains the endogenous opioid system & ensures it's sufficiently functioning
- Repetitive reparation and forms of solace by other people at needed times are internalized and humans develop the abilities to self-soothe and tolerate distress and/or functionally seek out and obtain social attachments necessary to obtain distress tolerance
- This is what's missing in OUD: exogenous opioids have high-jacked the endogenous opioid system

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Psychology of OUD

- Creating a lived experience
  - Increasingly intolerant urge experiences (in the form of withdrawal, pain , stress – experiences engaging the limbic system)
  - Highly reactive limbic system
  - Compulsive, automaticity of responding to these experiences with avoidant use behaviors
  - Disrupting normal relationships leading to social isolation
- There is no longer a perceiving subject of these experiences that can reflect on and choose effective responses that engage the endogenous opioid system to self-soothe
  - Low positive mood states, fear-based perceiving subject who lacks the abilities to entertain different possible responses to aversive stimuli other than the automatic response of avoidant use behaviors (“have to”, “can’t”, when questioned respond “you crazy?”)
  - Generalizing to increasing numbers of experiences leading to beliefs that it is impossible to experience life in all its pain and messiness without opioids

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Lessons from Pain Rehab

- What does rehabilitation do? It's a systematic training course to neuroplastically alter the nervous system in a beneficial manner
  - SCI
  - TBI
  - CVA
  - Pain
  - Substance use disorders: https://www.youtube.com/watch?v=gUjMNyfu_ak

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Lessons from Pain Rehab

- What does pain rehab do? It systematically re-engages the endogenous opioid system and patients come to acquire the abilities to tolerate pain, withdrawal, urges to use, etc., and move on with life
  - A therapeutic alliance providing a sense of comfort in being socially understood and positively regarded (universal to all treatments)
  - Explain the psychophysiology of the experiences of pain, stress, dependency and enlist patients in a systematic training course, or rehabilitation, that's informed by neuroplasticity; pts understand that they are neuroplastically changing their nervous systems
  - Engage pts in behaviorally down-regulating limbic systems thus producing increasing degrees of solace, but also slows down lived experiences leading to…
  - Engage pts in a cognitive training course to increase distress tolerance to differentiate the stimulus from the response, foster capacities to choose responses to unpleasant stimuli, and habituate to having unpleasant experiences and still functionally live in the world (pre-frontal & frontal lobe training)
  - Engage patients in a course of re-engaging in socially pleasant and supportive experiences (re-kindling endogenous dopaminergic and opioid systems)
  - Graded exposure to pain, withdrawal, and other unpleasantnesses of life via a well-timed, gradual taper of exogenous opioids

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Lessons from Pain Rehab (contd)

- Through these systematic training courses, patients come to:
  - de-couple the aversive stimulus from its compulsive behavioral response
  - create thoughtful space to entertain different responses
  - foster solace and comfort naturally
  - to overcome fear-based living and become empowered
  - learn to remain functionally engaged in life with unpleasant experiences of pain and urges to use
  - over time, these experience become either increasingly infrequent or increasingly experienced as less and less compelling, even background noise

- In other words, they are neuroplastically unwinding pain and opioid dependency

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MAT 2.0: Putting MAT back into Rehab

- Couldn't we do something similar for OUD?
- Shouldn't we at least try?
- When traditional SUD tx succeeds, it is much the same process:
  - Go from a lived experience of "How could I ever live without ____?" marked by compulsive use & social isolation
  - To fostering the capacity to have an unpleasant experience of urge to use, tolerate it, and choose a different response though persistent training and repetition
  - Engaging in a social network and pleasurable sober experiences
  - Resulting in a lived experience of increasingly infrequent urges & increasingly tolerable urges while remaining functionally engaged in life

- What they do is neuroplastically unwind an addiction

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Model OUD Rehabilitation Program

- Provision of MAT along with rehabilitation that borrows from neuroplastically-informed rehabilitation of other conditions
- Dependent on patient characteristics, MAT might involve life-long maintenance, periodic lowering of doses, or abstinence
- Involves:
  - A therapeutic alliance providing reparation and other socially comforting experiences
  - Explain the psychophysiology of addiction and enlist patients in a systematic training course to neuroplastically change their nervous systems to whatever extent possible
  - Engage pts in behaviorally down-regulating limbic systems thus producing increasing degrees of solace, but also slows down lived experiences so…
  - Engage pts in a cognitive training course to increase distress tolerance, foster capacities to choose responses to unpleasant stimuli, and habituate to having unpleasant experiences and still functionally live in the world without using (pre-frontal & frontal lobe training)
  - Engage patients in a course of re-engaging in socially pleasant and supportive experiences (re-kindling endogenous dopaminergic and opioid systems)
  - Graded exposure to the unpleasantnesses of life via a well-timed, gradual reductions/taper of exogenous opioids
- Notice that this model doesn't involve the MN Model or the Self-Medication Hypothesis (though could incorporate some aspects of them)
- Notice too MAT might be more palatable to pts earlier in the trajectory of their recovery than is rehabilitation, thus rehabilitation might not be offered/encouraged for patients on MAT until ready

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Thank you!