

Pain management with non-opioid substances with addictive potential **Cannabis, Ketamine, & Kratom**

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David Geffen
School of Medicine

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Semel Charitable Foundation

Abuse liability of 'non-traditional' analgesics: *Cannabis, Ketamine, Kratom*

- Regulatory status and access
- Use rates and evidence of analgesic effects
- Use rates and evidence for SUDs
- Abuse potential
- Unknowns and public health priorities



CANNABIS



Cannabis regulatory status and access

- Cannabis* is federally illegal (**Schedule I**)
- Each state has different laws, products
- No unifying body regulating production, sales
- Pain = qualifying condition in all states
- Opioid / Substance use disorder = in 4 states
- NOT FDA approved for pain or SUD



Diverse chemical constituents and modes of use



Smoked

Preroll / Joint



Blunt



Topical



Vaporized

Vaporizer



Vap-pen



Oral

Candy



Baked Goods



Medical Prep



Cannabis for Chronic Pain



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- 30% of chronic pain patients use cannabis

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- 30% of chronic pain patients use cannabis
- Preclinical and clinical studies suggest that THC and other CB1 receptor agonists may be helpful for some types of chronic pain
- Other cannabis constituents may also be helpful, but need more data

Cannabis for SUD



- 41% of patients in buprenorphine treatment for OUD use cannabis (past 30 days)

Cannabis for SUD



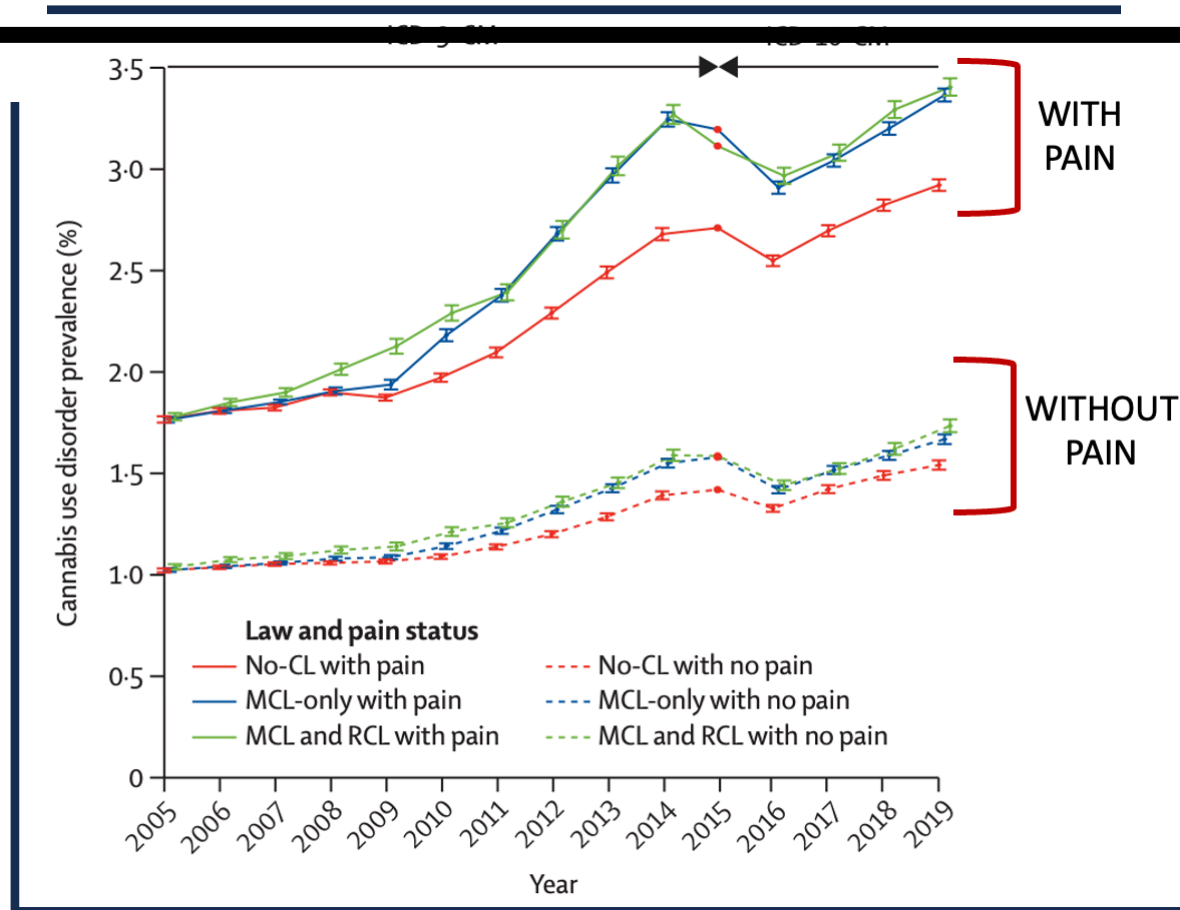
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Cannabis for SUD



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- 5 - 27% of people using medical cannabis endorse use for substance use disorder
- Signals for THC / CB1 agonists to reduce withdrawal (CUD, OUD)
- Other cannabis constituents (CBD) may also provide signal for SUD

CUD prevalence by legal status among patients with and without pain



CUD prevalence by legal status among patients with and without pain



Little is known regarding cannabis use for pain and substance use disorders: Patterns, products, people

Problematic cannabis use may be an issue; unknown whether withdrawal leads to continued use

Unknowns: safety, efficacy, product diversity, at risk populations

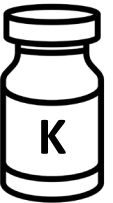


KETAMINE



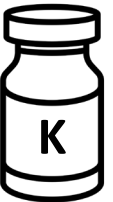
Ketamine regulatory status and access

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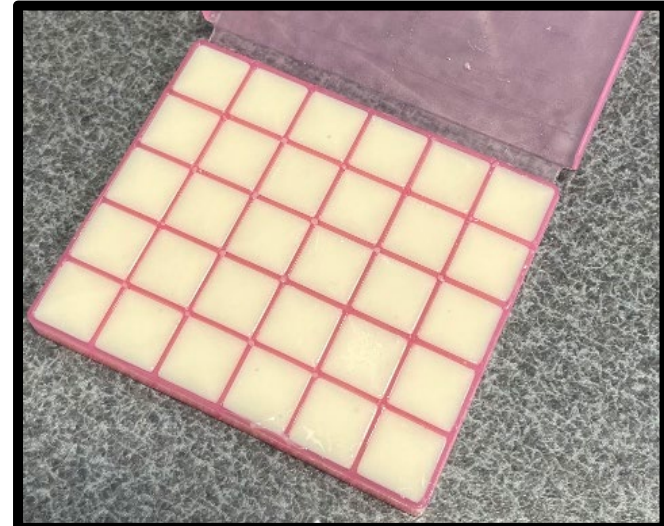
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IV / IM administration



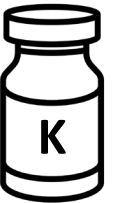
Oral Disintegrating Tablets



Lozenges

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Ketamine seizures increasing

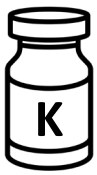
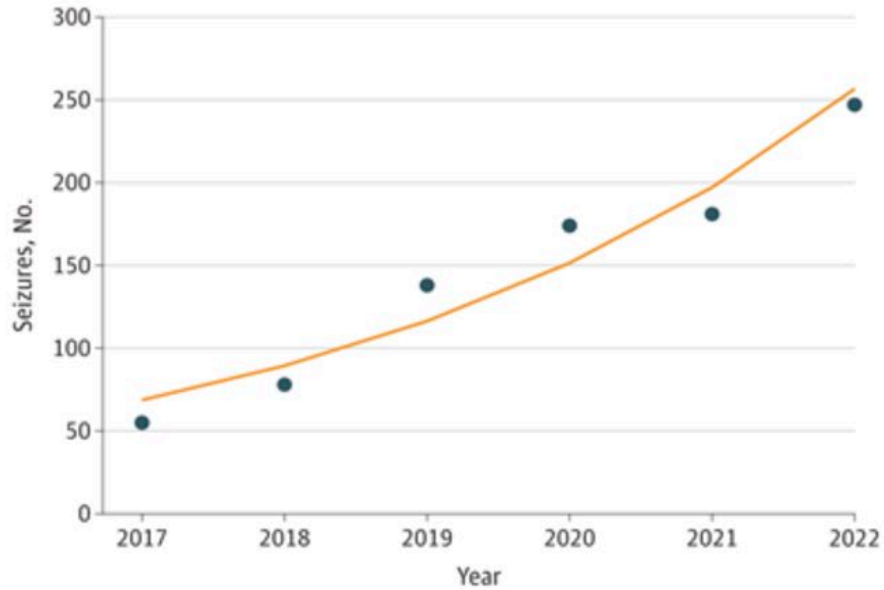
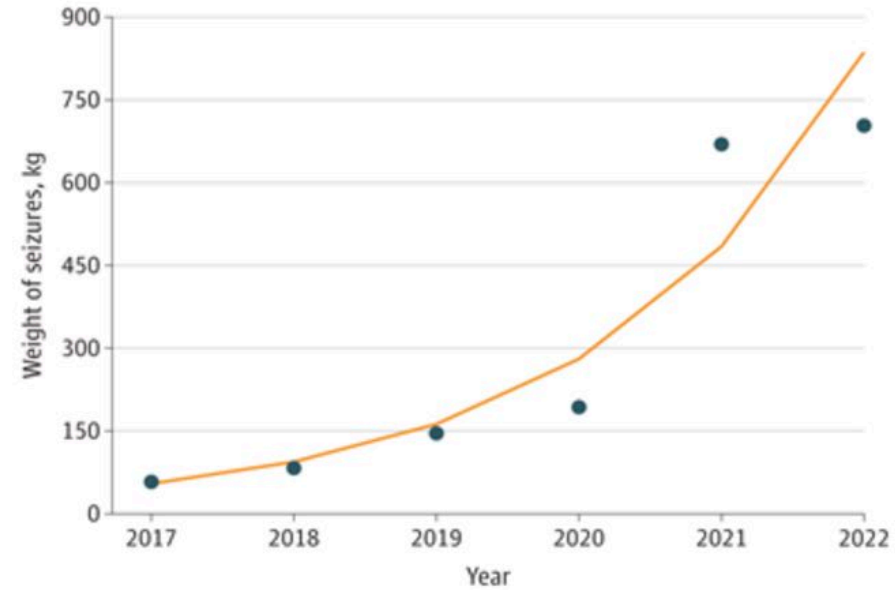


Figure. Trends in Ketamine Seizures in the US From 2017 to 2022

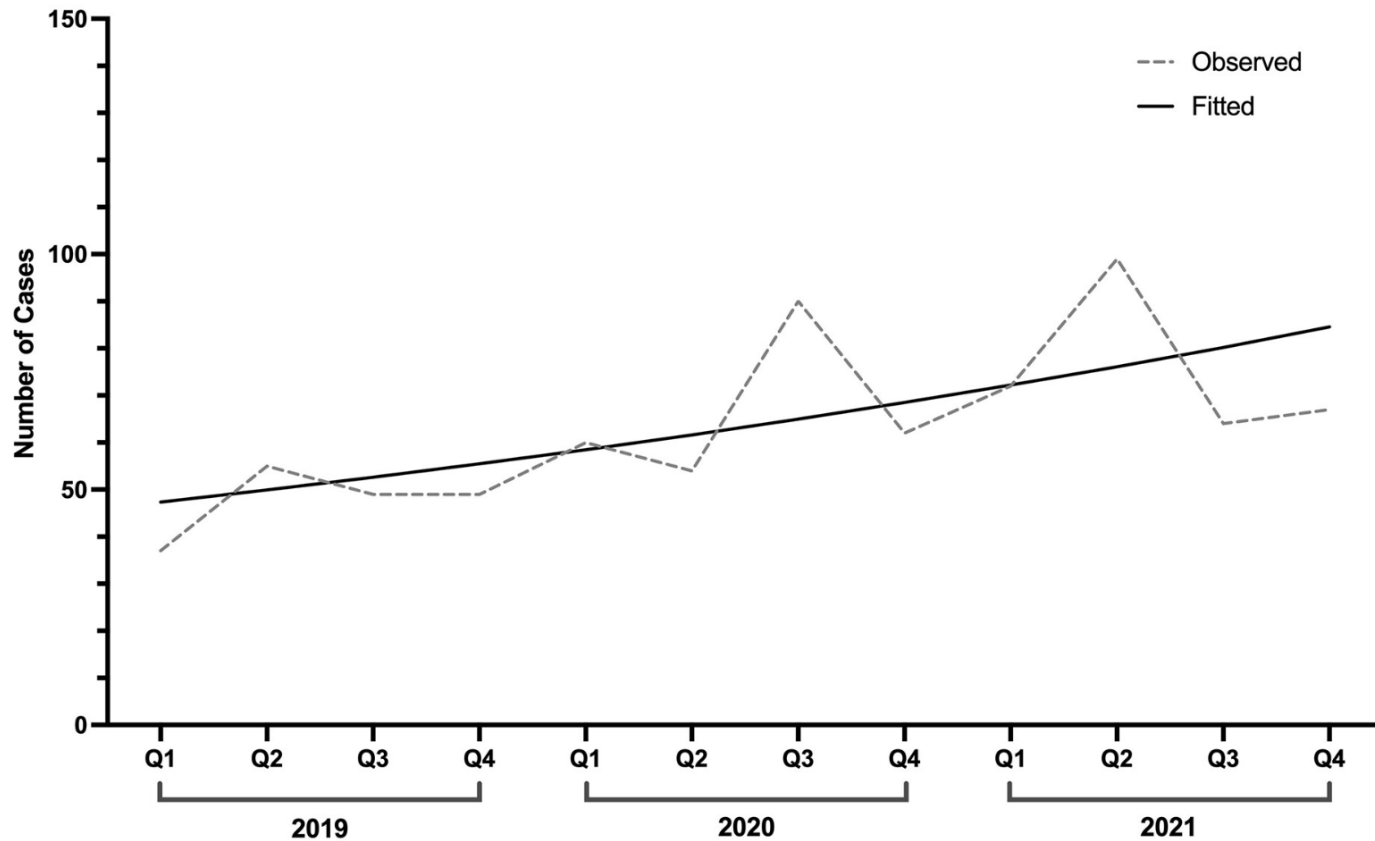
A Number of seizures over time



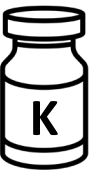
B Weight of seizures over time



Increase in ketamine poison control cases



Potential of Ketamine for Pain



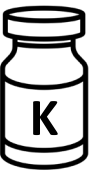
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Potential of Ketamine for Pain



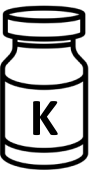
- Positive signal for IV ketamine for chronic pain with favorable safety profile
- Less is known regarding oral and intranasal routes, take-home medication, specific populations, etc

Potential of Ketamine for SUD



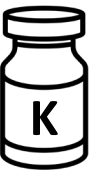
- Signals for ketamine to be helpful for cocaine, opioid, and alcohol use disorder

Potential of Ketamine for SUD



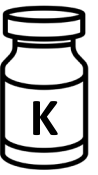
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- **Unknowns:** safety, efficacy, product diversity, at risk populations

KRATOM



Kratom regulatory stats and access



- Kratom products are derived from a tree (*Mitragyna speciosa*) native to Southeast Asia, available as powders, pills, extracts, leaves

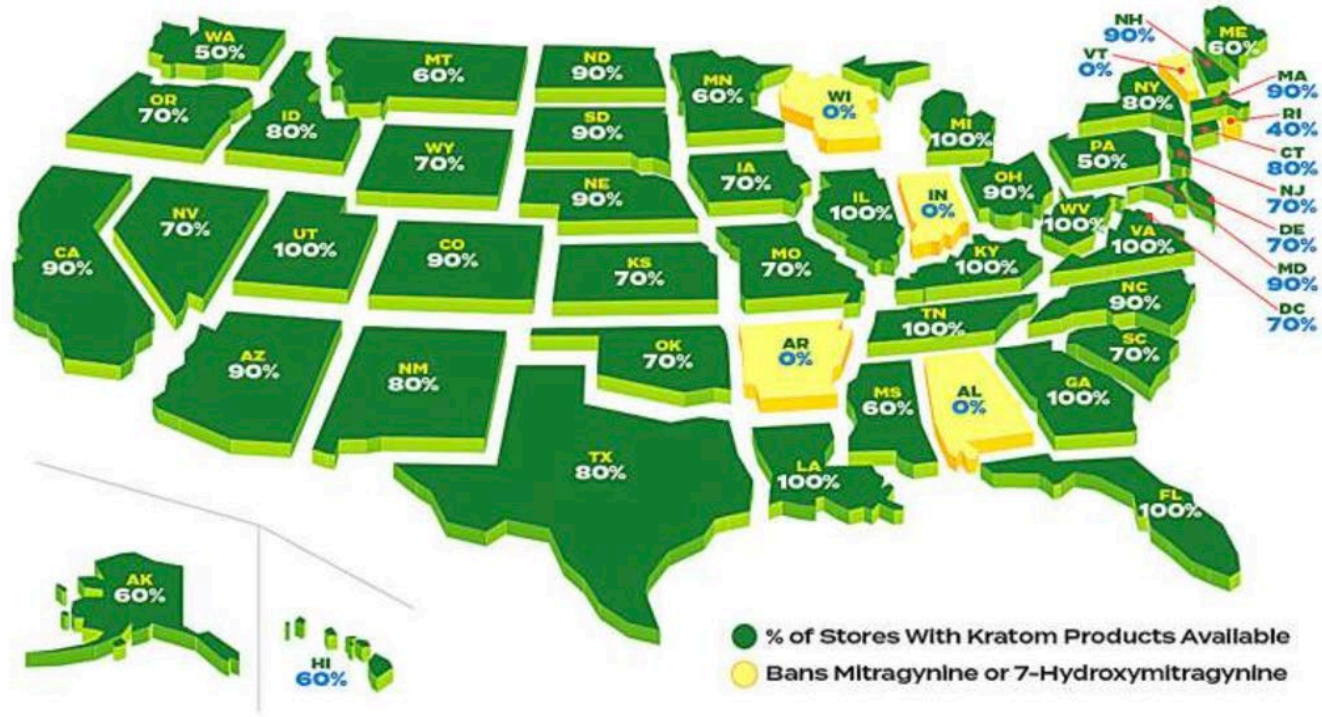


Kratom regulatory stats and access



- Kratom products available as powders, pills, extracts, leaves
- Not scheduled in the US but not regulated

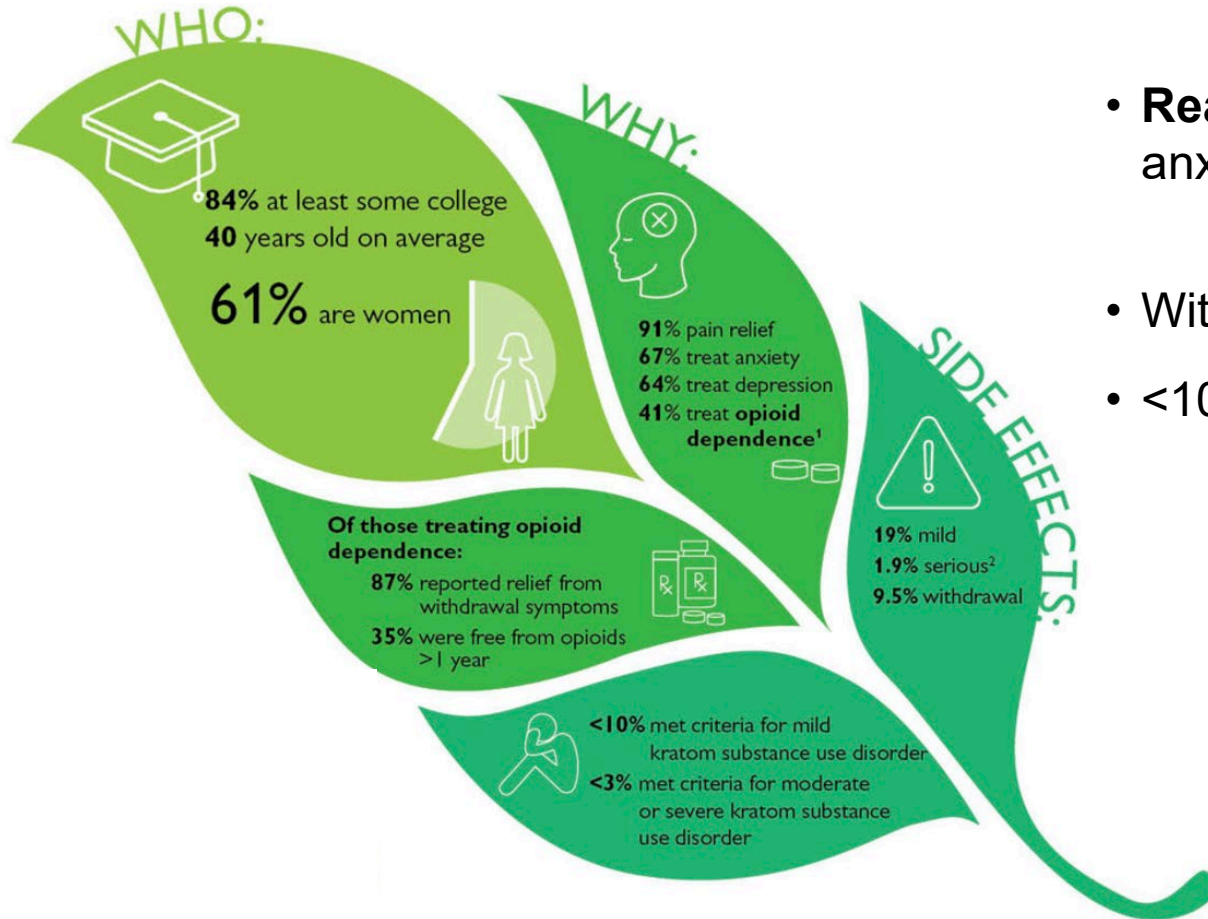
Kratom regulatory stats and access: 5 states ban kratom sales



Rosshiem et al., 2024

<https://medicalxpress.com/news/2024-11-federal-kratom-readily.html>

Survey of People who use Kratom



- **Reasons for use** = pain, anxiety, depression, opioid
- Withdrawal cited as side effect
- <10% met criteria for mild SUD

Kratom regulatory stats and access



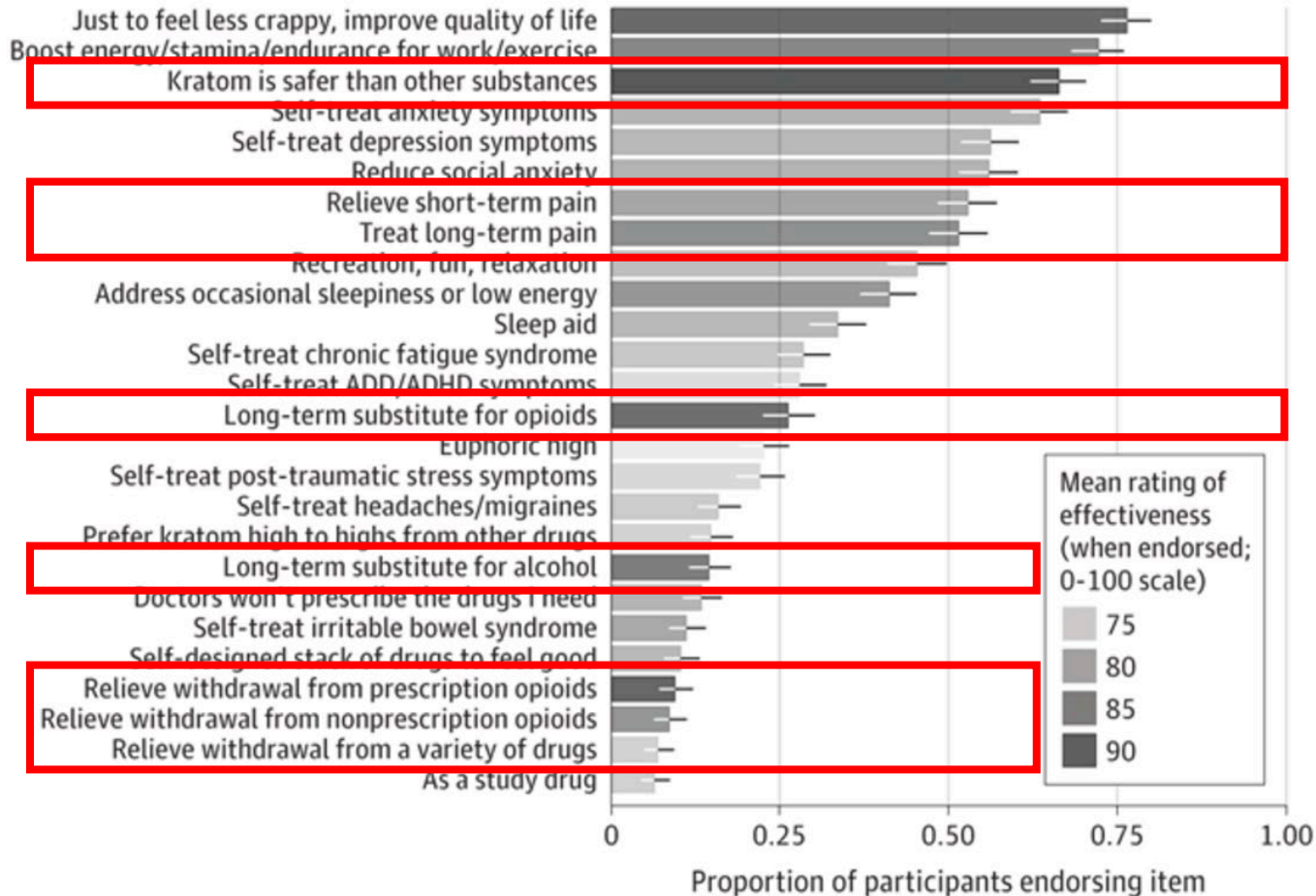
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- Used for pain, anxiety, depression and SUDs (opioid withdrawal)

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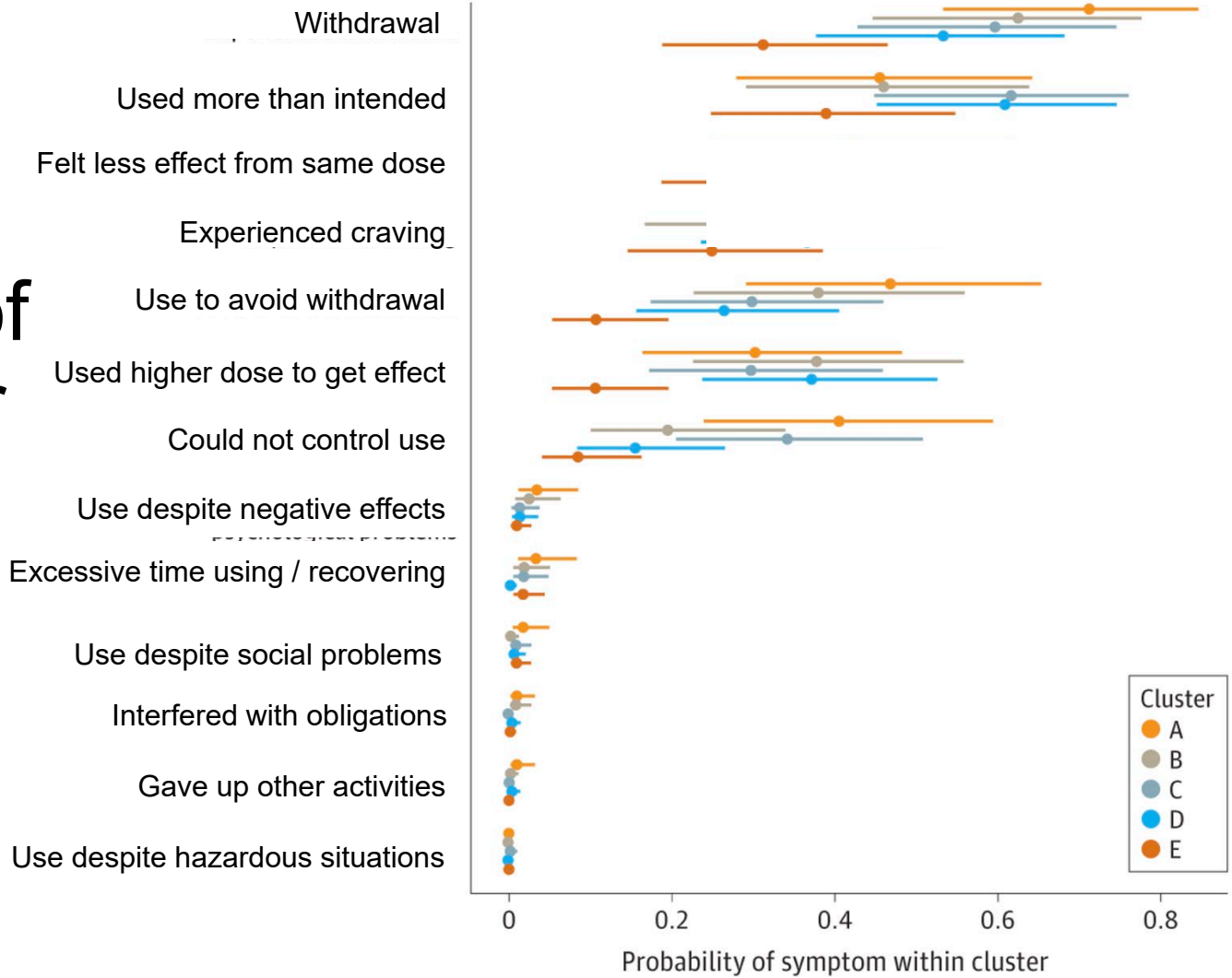


- Kratom products available as powders, pills, extracts, leaves
- Not scheduled in the US but not regulated
- Used for pain, anxiety, depression and SUDs (opioid withdrawal)
- Not FDA approved for any indication, supplement or food additive

Motivations for Use and Effectiveness



Prevalence of Use Disorder Symptoms



Kratom for Chronic pain (and SUD)



- Kratom use for pain and opioid use has not been systematically studied: Patterns, products, people
- Potential for benefits but adverse effects are documented
- Problematic kratom use is an issue and withdrawal may lead to continued use
- **Unknowns:** safety, efficacy, product diversity, at risk populations

Unknowns and Public Health Priorities

- Not regulated products
- Wide-scale use for pain and SUD



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- Therapeutic potential



Unknowns and Public Health Priorities

- Not regulated products
- Wide-scale use for pain and SUD
- Therapeutic potential
- **Unknowns:** Rates / patterns of use, adverse effects , therapeutic effects, vulnerability of population with SUD, motivation for use



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