Cannabis and the Pain Dilemma

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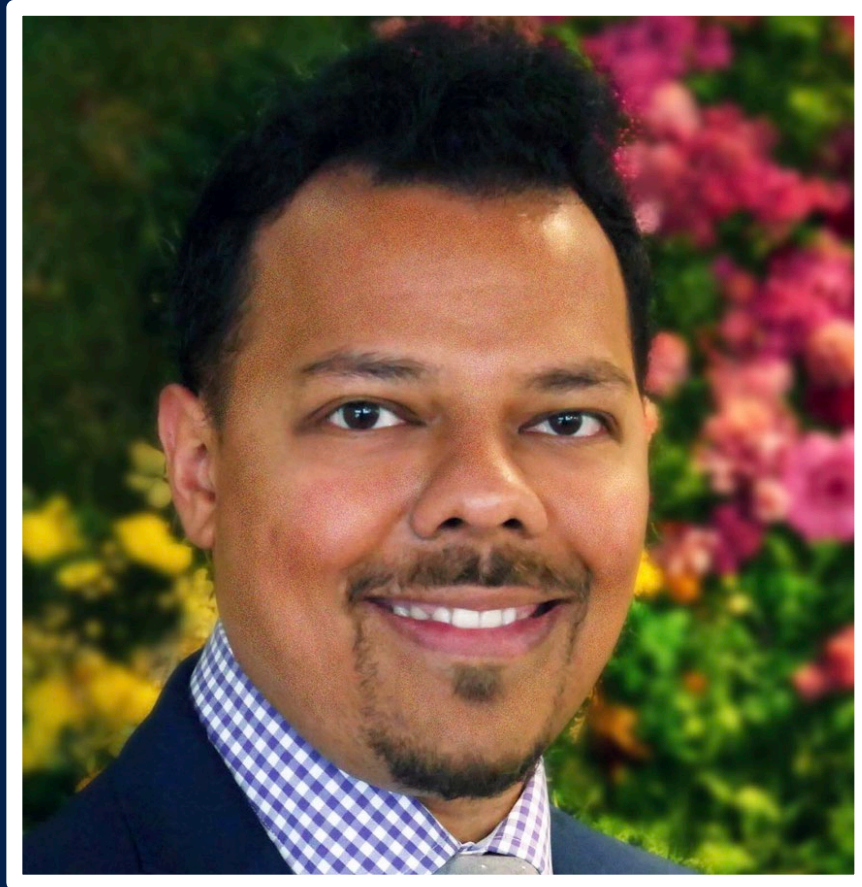Program Director, UCSF Addiction Psychiatry Fellowship
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Disclosure Information

Tauheed Zaman, MD
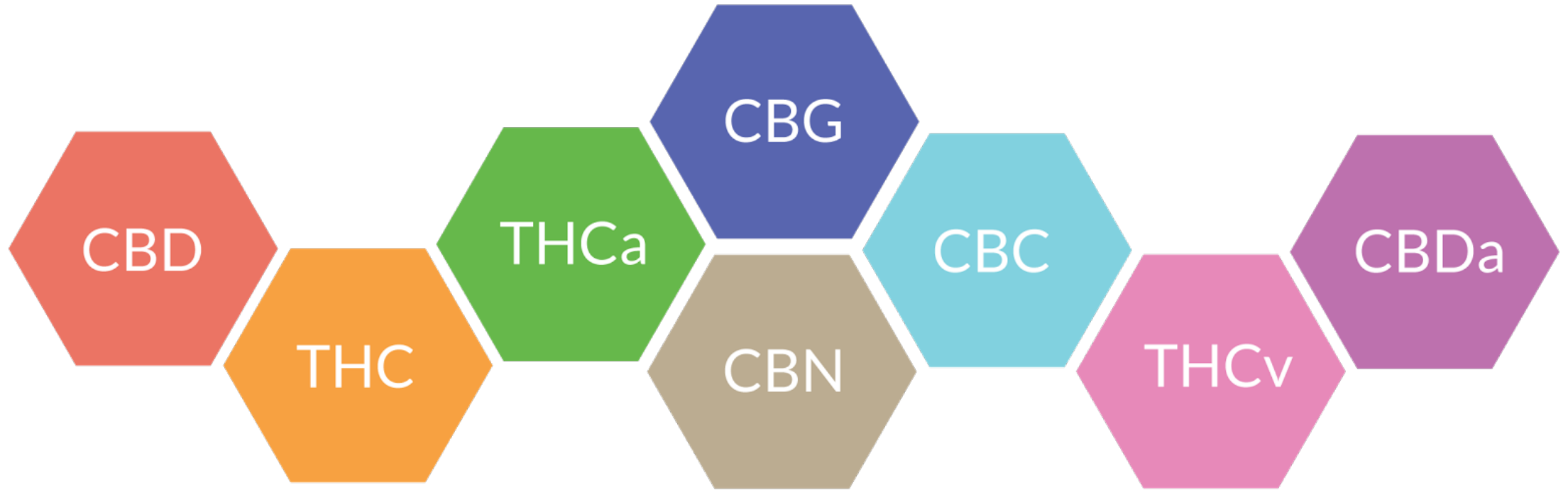
- No disclosures

Session Learning Objectives

At the end of the session, you will be able to:

- Describe perception-evidence gap of cannabinoids for pain.

- List risk stratification factors among patients with pain.

- Discuss pain history, treatment alternatives, and harm reduction.
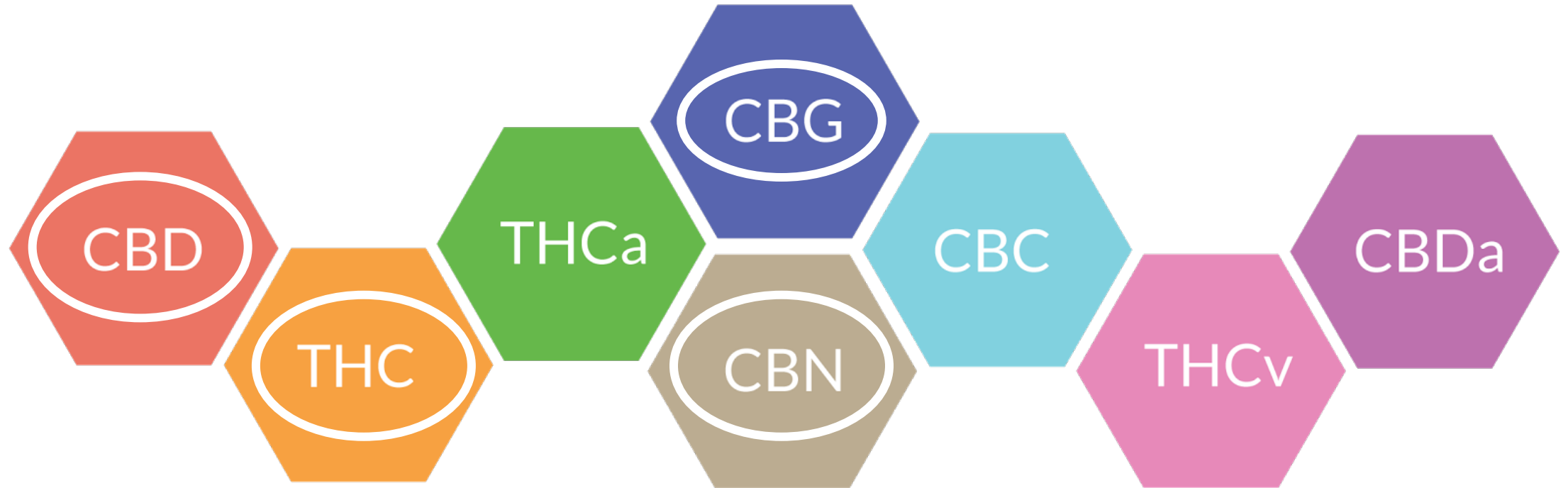
Perceptions of Benefit

- Online survey, n = 9003

- One benefit: 81%

- Pain benefit: **66%**

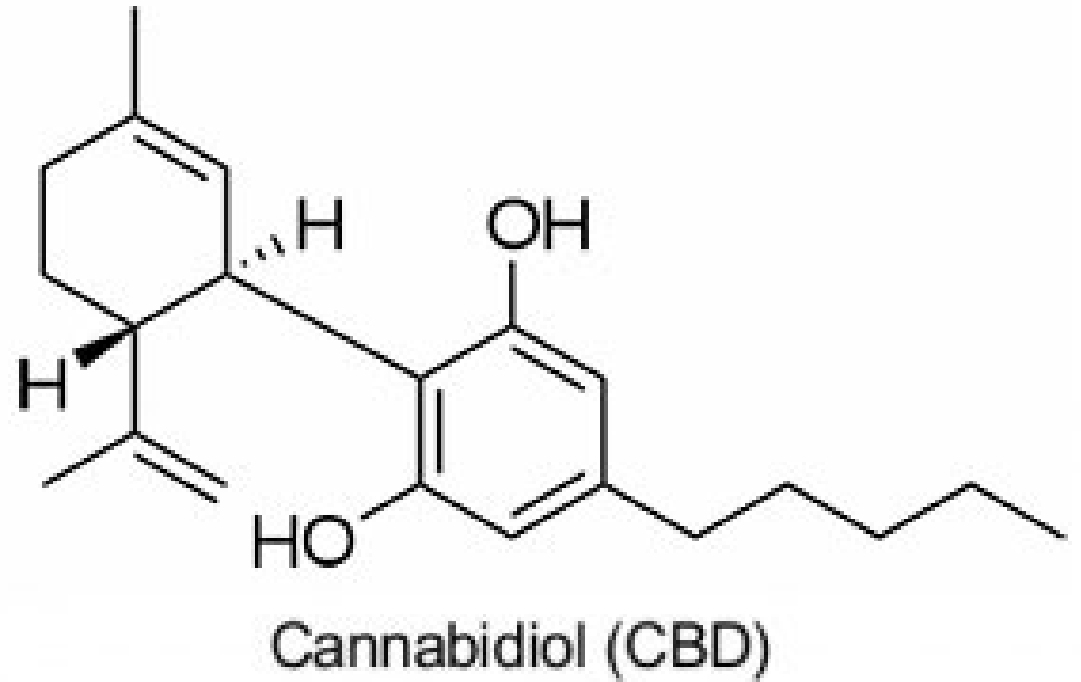- Risks: 91% (legal, addiction, memory)

Keyhani et al, Annals of Internal Medicine, 2018

Cannabis is Not a Monolithic Entity

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Tetrahydrocannabinol (THC)

Cannabidiol (CBD)
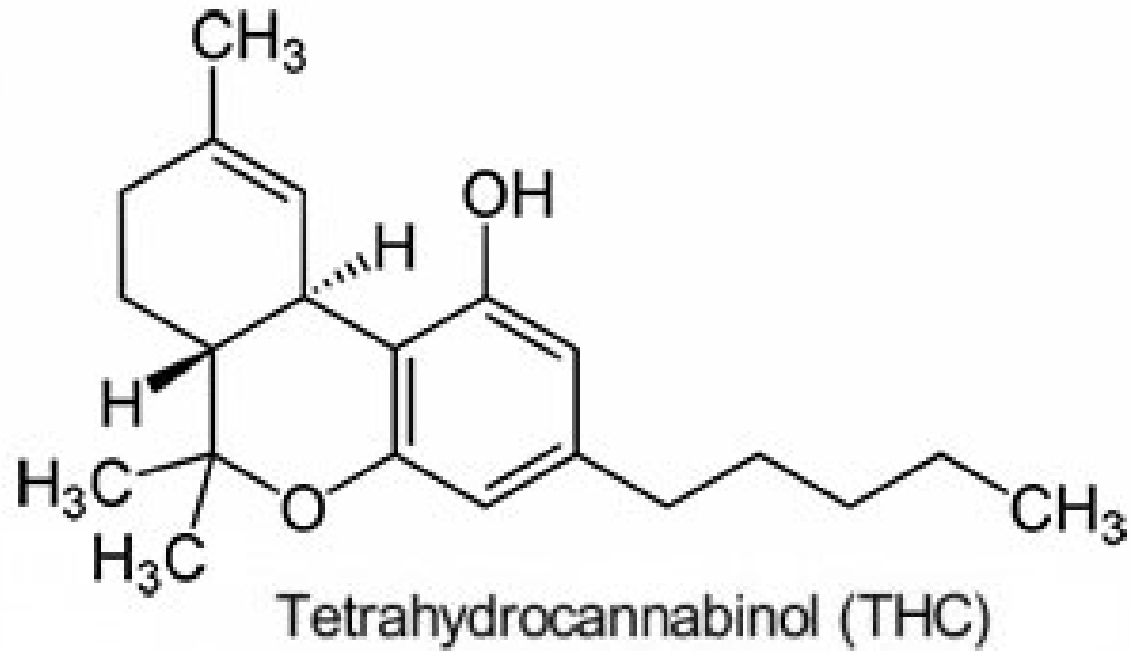
THC: CBD and Change in Pain

- High THC:CBD (>98% THC): -1.25 (-2.09 to -0.71)

- Comparable THC:CBD: -0.54 (-0.95 to -0.19)

- Short-term (1-6mos)

- Primarily neuropathic pain

- Sedation, dizziness

- Heterogeneity, multiple limitations

Cannabinol (CBN)

- Oxidation byproduct of THC

- Less potent than THC

- Marketed for sleep, depression, anxiety, pain

- No rigorous studies

Cannabigerol (CBG)

- Minor molecule (small amounts)

- Precursor to other cannabinoids

- Theorized to have anti-inflammatory properties

- Marketed for pain

- No rigorous studies

Navarro et al, Cannabis and Cannabinoid Res, 2018

Evidence of Benefit

GAP

Perception of Benefit

Evidence of Benefit

↕ GAP

Perception of Benefit

↕ GAP

Evidence of Risk

Facing the Dilemma: Understanding Pain

- Pain is also not a monolithic entity!

Facing the Dilemma: Understanding Pain

- Pain hx: course, characteristics, impairments, goals
- Treatment history:
  - Behavioral
  - Non-opioid analgesics
  - Interventions/procedures
  - Opioids: not first line for chronic pain
 - MOUD (Medications for Opioid Use Disorder)
  - *Cannabis-derived products*

CDC: Non-opioid treatments for chronic pain

Facing the Dilemma: Understanding Pain

PEG Scale Assessing Pain Intensity and Interference (Pain, Enjoyment, General Activity)

**1. What number best describes your pain on average in the past week?**

0	1	2	3	4	5	6	7	8	9	10
No Pain								Pain as bad as you can imagine		
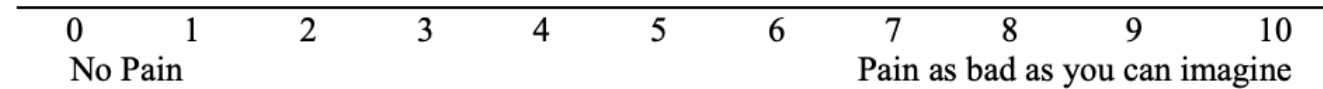
2. What number best describes how, during the past week, pain has interfered with your enjoyment of life?

0	1	2	3	4	5	6	7	8	9	10
	Does not interfere								Completely interferes	
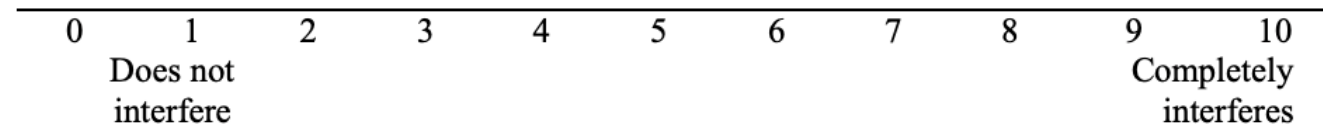
3. What number best describes how, during the past week, pain has interfered with your general activity?

0	1	2	3	4	5	6	7	8	9	10
	Does not interfere								Completely interferes	
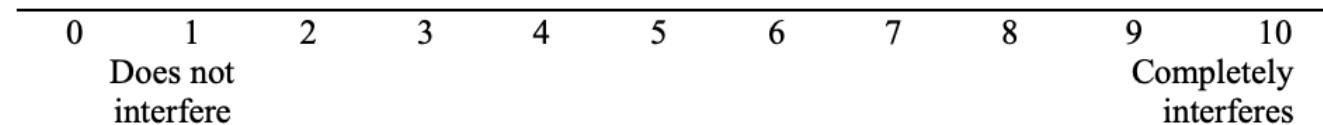
Facing the Dilemma: Risk Stratification

- Personal, family hx of addiction
- Personal, family hx of psychosis
- Mood, anxiety issues affected by cannabis
- Functional impairments
- Medical conditions affected by cannabis

Facing the Dilemma: Risk Stratification

- Avoid early age initiation
- Avoid high frequency (daily or near daily) use
- Choose low-potency THC or balanced THC:CBD ratios
- Abstain from synthetics

- Avoid combustible products, preference to nonsmoking
- Abstain from cannabis-impaired driving
- High-risk populations should avoid use (e.g., psychosis, addictions)
- Track use over time, including metered dosing

Facing the Dilemma: Harm Reduction

I.   Does CBD product meet quality standards?

- Current Good Manufacturing Practices (CGMP) certification from USFDA
- EU, Australiam (AUS), Canadian (CFIA) organic certification
- National Science Foundation (NSF) International certification

II. Does company have independent adverse event reporting program?

III. Product certified organic or ecofarmed?

IV. Products lab tested by to confirm THC <0.3%, no pesticides, heavy metals?

VanDolah et al, Mayo Clin Proc, 2019

Facing the Dilemma: Law and Policy

- Federal law: **Schedule I** substance
- State law: Highly variable
- Local: Healthcare systems vary in policy on recommending cannabis-derived products
- Talk to patient about legal ramifications
- Consult with legal counsel as appropriate

Final Takeaways

- Neither cannabis nor pain are monolithic entities
- Limited/emerging evidence for certain THC:CBD preparations
- No evidence for other cannabinoids
- Perception gap, balanced approach
  - Understand pain (including PEG)
  - Individual risk stratification
  - Harm reduction
  - Remain aware of federal & state laws, local policy

References

1. Keyhani S, Steigerwald S, Ishida J, Vali M, Cerdá M, Hasin D, Dollinger C, Yoo SR, Cohen BE. Risks and Benefits of Marijuana Use: A National Survey of U.S. Adults. Ann Intern Med. 2018 Sep 4;169(5):282-290. doi: 10.7326/M18-0810. Epub 2018 Jul 24. PMID: 30039154; PMCID: PMC6157909.
2. McDonagh MS, Morasco BJ, Wagner J, Ahmed AY, Fu R, Kansagara D, Chou R. Cannabis-Based Products for Chronic Pain : A Systematic Review. Ann Intern Med. 2022 Jun 7. doi: 10.7326/M21-4520. Epub ahead of print. PMID: 35667066.
3. Corroon J. Cannabinol and Sleep: Separating Fact from Fiction. Cannabis Cannabinoid Res. 2021 Oct;6(5):366-371. doi: 10.1089/can.2021.0006. Epub 2021 Aug 31. PMID: 34468204; PMCID: PMC8612407.
4. Navarro G, Varani K, Lillo A, Vincenzi F, Rivas-Santisteban R, Raïch I, Reyes-Resina I, Ferreiro-Vera C, Borea PA, Sánchez de Medina V, Nadal X, Franco R. Pharmacological data of cannabidiol- and cannabigerol-type phytocannabinoids acting on cannabinoid CB1, CB2 and CB1/CB2 heteromer receptors. Pharmacol Res. 2020 Sep;159:104940. doi: 10.1016/j.phrs.2020.104940. Epub 2020 May 26. PMID: 32470563.
5. McDonagh MS, Selph SS, Buckley DI, et al. Nonopioid Pharmacologic Treatments for Chronic Pain [Internet]. Rockville (MD): Agency for Healthcare Research and Quality (US); 2020 Apr. (Comparative Effectiveness Review, No. 228.) Evidence Summary. Available from: https://www.ncbi.nlm.nih.gov/books/NBK556283/
6. Krebs, E. E., Lorenz, K. A., Bair, M. J., Damush, T. M., Wu, J., Sutherland, J. M., Asch, S. M., & Kroenke, K. (2009). Development and initial validation of the PEG, a three-item scale assessing pain intensity and interference. Journal of general internal medicine, 24(6), 733–738. https://doi.org/10.1007/s11606-009-0981-1
7. National Academies of Sciences, Engineering, and Medicine; Health and Medicine Division; Board on Population Health and Public Health Practice; Committee on the Health Effects of Marijuana: An Evidence Review and Research Agenda. The Health Effects of Cannabis and Cannabinoids: The Current State of Evidence and Recommendations for Research. Washington (DC): National Academies Press (US); 2017 Jan 12. Available from: https://www.ncbi.nlm.nih.gov/books/NBK423845/ doi: 10.17226/24625
8. Fischer, B., Russell, C., Sabioni, P., van den Brink, W., Le Foll, B., Hall, W., Rehm, J., & Room, R. (2017). Lower-Risk Cannabis Use Guidelines: A Comprehensive Update of Evidence and Recommendations. American journal of public health, 107(8), e1–e12. https://doi.org/10.2105/AJPH.2017.303818
9. VanDolah, H. J., Bauer, B. A., & Mauck, K. F. (2019). Clinicians' Guide to Cannabidiol and Hemp Oils. Mayo Clinic proceedings, 94(9), 1840–1851. https://doi.org/10.1016/j.mayocp.2019.01.003
10. National Conference of State Legislatures. https://www.ncsl.org/research/civil-and-criminal-justice/marijuana-overview.aspx Accessed July 20th, 2022