



**American Cannabis
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Cannabis for Depression?

A Look at the Evidence

Ariana Ayu, RN, MSc





CANNABIS FOR DEPRESSION?

A Look at the Evidence

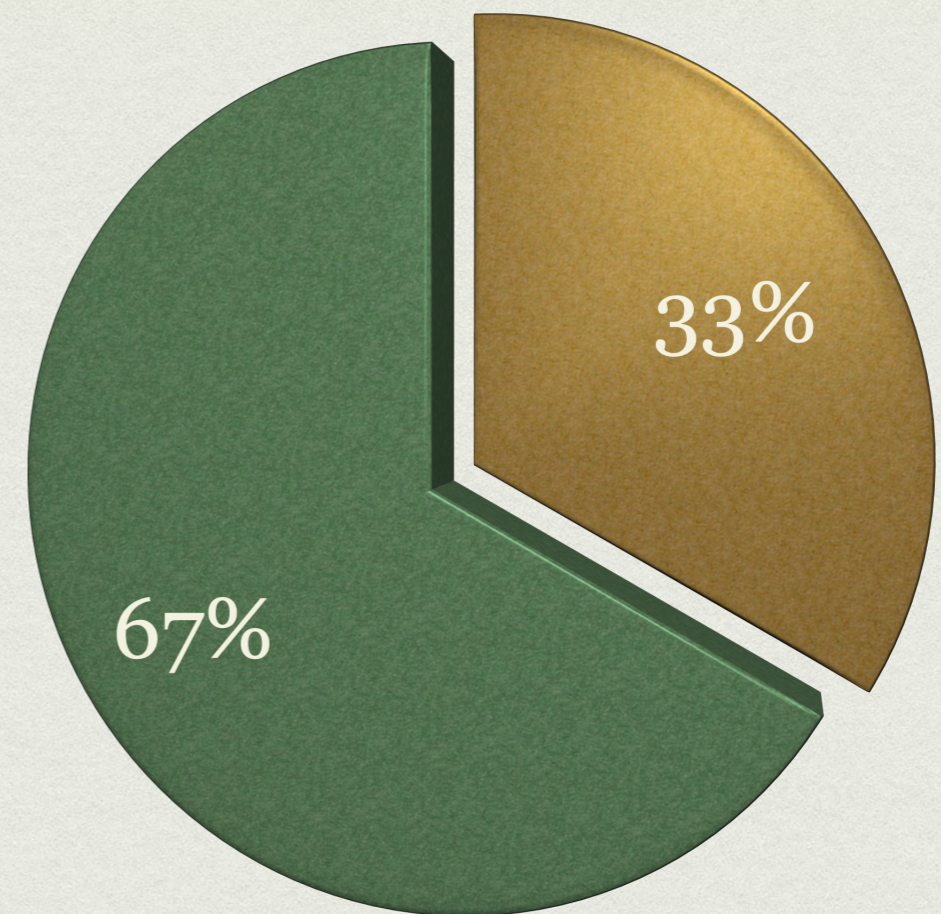


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ONE THIRD OF PATIENTS

- As many as 1/3 of medical cannabis patients say they use cannabis for depression (Backes, 2017), but...
- It is not an approved condition
- The current evidence is inconclusive, and
- Some evidence links heavy cannabis use with Major Depressive Disorder (MDD) (Lucatch et al., 2018; Lowe et al., 2019).



For slides & reference list go to:
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THE EVIDENCE

- Literature Review initially performed July 2020 via pubmed; updated evidence October 2020
- **Parameters for Inclusion**
 - Search terms: “cannabis” “canna*” “marijuana” “treatment” “depression”
 - Published: Jan. 2015 — Oct. 2020
 - Open access, English language
 - Addressed the question: “Is cannabis an effective treatment for depression?”
- Full paper available at: **bit.ly/cn-depression**



ARIANA AYU

FOUNDER, CANNYNURSE.COM

Conflict of Interest Disclosure: No conflict.



- *Registered Nurse*
- *Masters Degree in Advancing Nursing Practice*
- *Integrative Nurse Coach*
- *Medical Cannabis Certificate*





CLINICAL DEPRESSION

- Mood disorder: sadness, apathy, anhedonia
- Score ≥ 10 on the Patient Health Questionnaire-9 (PHQ-9) screening tool (Levis et al., 2019).
- Standard Treatment: antidepressants
 - May not be effective long-term (Cutler et al., 2018)
 - Undesirable side effects include increased suicide risk (Khan et al., 2018; Hayes et al., 2019).

CAUSES OF DEPRESSION

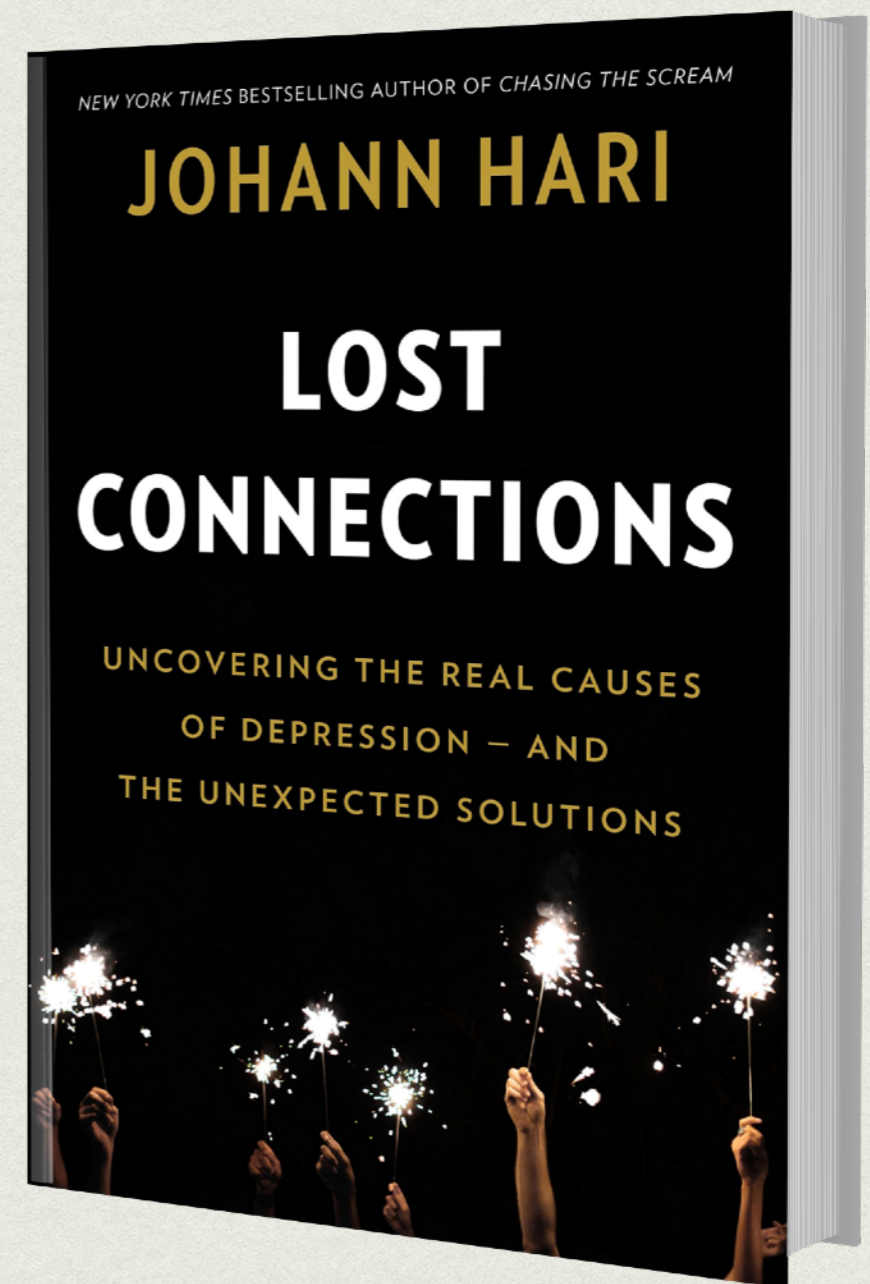
- No universally accepted theory.
- Possible physical/ biological causes include:
 - Decreased hippocampal neurogenesis, neurotransmitter signaling malfunctions, genetic vulnerabilities, problematic epigenetic changes, depression secondary to medical problems, medication side effects (Harvard Health Publishing, 2019)
 - ECS imbalances/ dysregulation (Bluett et al., 2014; Mangieri & Piomelli, 2007)

BIOLOGICAL CAUSES RELATED TO THE E.C.S.

- When AEA reuptake is inhibited, stress coping & mood-related behaviors improve (Mangieri & Piomelli, 2007).
- ECS may act as a link between depression & pain (Fitzgibbon et al., 2016).
- Depression has physical characteristics; direction of causality is unclear (Scherma et al., 2018).

BIOPSYCHOSOCIAL CAUSES OF DEPRESSION

- lack of meaning/ purpose in work
- loneliness
- junk values
- childhood trauma
- loss of status and respect
- being disconnected from nature
- hopelessness about the future





ADULTS WHO SUFFERED CHILDHOOD TRAUMA

- May have similar characteristics to and/or become PTSD
- Dr. Gabor Maté —
 - The event itself isn't what's traumatic; it's the loss of connection to self, truth, or safety.





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THE RESEARCH

- Correlation \neq Causation
- **Bidirectional Associations Between Cannabis Use and Depressive Symptoms From Adolescence Through Early Adulthood Among At-Risk Young Men** (Womack et al., 2016). Gave four theories:
 - Cannabis effect (supported by evidence)
 - Self-medication (limited evidence)
 - Bi-directional association (like a loop)
 - Common factors (shared underlying risk factors)

THE RESEARCH

- Literature Review: **Is cannabis treatment for anxiety, mood, and related disorders ready for prime time?** (Turna et al., 2017) — disappointing (articles out of date)
- Literature Review: **New Perspectives on the Use of Cannabis in the Treatment of Psychiatric Disorders** (Scherma et al., 2018) — mixed results
- Literature Review for NIDA: **Don't Worry, Be Happy: Endocannabinoids and Cannabis at the Intersection of Stress and Reward** (Volkow et al., 2017) — concluded no evidence-base because no RCTs

THE RESEARCH

- A note on RCTs (Randomized Controlled Trials):
 - Considered the “Gold standard” for pharmaceutical interventions (1 uniform chemical constituent) or when 1 simple intervention is being studied.
 - Inappropriate for complex interventions & large number of variables.

THE RESEARCH

- **Patterns of marijuana use among psychiatry patients with depression and its impact on recovery (Bahorik et al., 2017)**
- **Medical and non-medical marijuana use in depression: Longitudinal associations with suicidal ideation, everyday functioning, and psychiatry service utilization (Bahorik et al., 2018).**
- Both were secondary analyses of data from research asking: is Motivational Interviewing (MI) an effective treatment for problematic drug and alcohol use (outpatient psychiatry setting)?

THE RESEARCH

- **Problems with both Bahorik et al. articles (California)**
 - Expectation bias: “**problematic** drug and alcohol use”
 - Addiction recovery outcomes (is the goal to stop using cannabis?)
 - What type of cannabis? Assume high THC/ Type 1 chemovars
- **Bahorik et al., 2017 —**
 - Conclusion #1: Medical cannabis use assoc. with poor physical outcomes... but why? Could this be r/t disease progression?
 - Conclusion #2: Any cannabis use was assoc. with worse depressive symptoms/ functional mental health/ addiction recovery outcomes

THE RESEARCH

- Bahorik et al., 2018 —
 - **Non-users of cannabis**
 - **Medical users**
 - Baseline: worse initial physical/ mental health functioning; no difference at 1-year follow-up
 - **Non-medical users (medical + adult use)**
 - Baseline: fewer visits, worse mental health functioning, greater depression symptoms, more suicidal ideation
 - 1-year Follow-up: less improvement across all domains

THE RESEARCH

- Depression - Pain Comorbidity
- 2 Literature Reviews (Fitzgibbon et al., 2015; Huang et al., 2016 [preclinical]) — **cannabis is effective in depression/pain comorbidity**
- Fitzgibbon et al. — since Sativex (1:1) proved effective, recommend a combination of **THC/CBD**

THE RESEARCH: CBD

- **Beyond the CB₁ Receptor: Is Cannabidiol the Answer for Disorders of Motivation?** (Zlebnik & Cheer, 2016)
- **Conclusion: CBD could be beneficial** in treating depression since it stimulates hippocampal neurogenesis, reduces markers of stress in the autonomic nervous system, and decreases behaviors associated with depression and anxiety.

THE RESEARCH

- **Can marijuana make it better? Prospective effects of marijuana and temperament on risk for anxiety and depression (Grunberg et al., 2015)**
- **A naturalistic examination of the perceived effects of cannabis on negative affect (Cuttler et al., 2018) — Strainprint App**
 - Depression — low THC (<5.5%) : high CBD (>9.5%)
 - Stress — high THC (>26.5%) : high CBD (>11%)

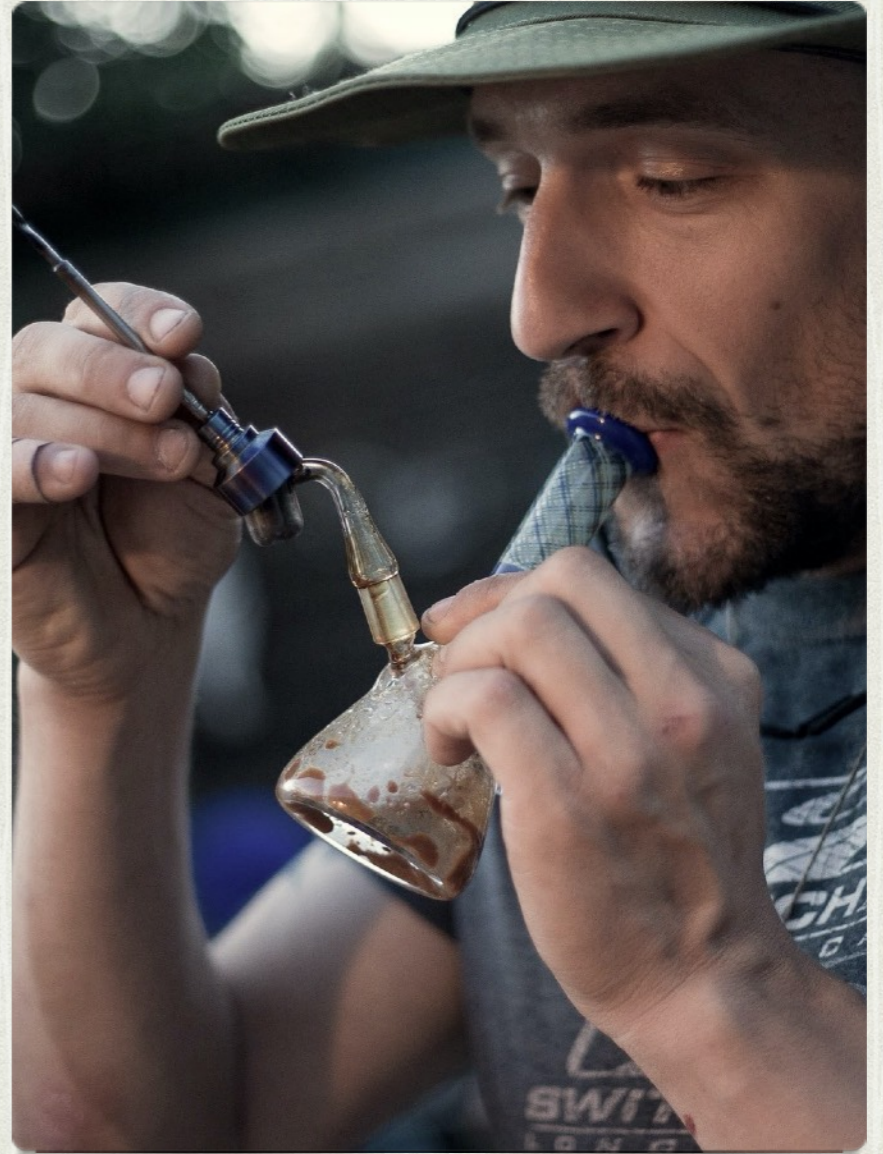
THE RESEARCH

- **Changes in patient health questionnaire (PHQ-9) scores in adults with medical authorization for cannabis (Round et al., 2020)**
 - 11.1% got better; 5.6% got worse
- **The Effectiveness of Cannabis Flower for Immediate Relief from Symptoms of Depression (Li et al., 2020) — Releaf App**
 - 95.8% found short-term relief; avg -3.76 points (0-10)



FUTURE DIRECTIONS

- **Current evidence is inconclusive:**
 - Cannabis may contribute to depression and it may alleviate symptoms for some people.
 - What to do? Therapy + Type 2 (1:1 THC:CBD) or Type 3 (CBD dominant) chemovars
- **An ideal study would include:**
 - Both biological genders, aged 26+
 - Control + 3 intervention groups (gender-balanced)



SAMPLE CAREPLAN

For Depressed Patients who Choose Cannabis

HOLISTIC ASSESSMENT

- Personal Health Record (Dossey et al., 2015)
- Integrative Health & Wellness Assessment (IHWA)
(Dossey et al., 2015)
- PHQ-9 depression screening (Levis, et al., 2019)
- Social History and Lifestyle questionnaire
- In-depth client interview

HOLISTIC CAREPLAN

- Set functional and feeling SMART goals;
- Coaching and/or therapy as needed;
- Evidence-based holistic therapies for depression:
 - Stress reduction (Bluett et al., 2014)
 - Mindfulness (Haller et al., 2019)
 - Meditation (Alsaraireh & Aloush, 2017; Falsafi, 2016; Hofmann et al., 2011; Zeng et al., 2015)

LIFESTYLE MEDICINE

- Whole foods based diet
- Increasing physical activity
- Mindfulness and meditation practices
- Conscious use and/or possible reduction of use of non-therapeutic substances (alcohol/ cigarettes)
- Increasing sleep duration/ quality
- Developing positive & supportive relationships
- Removing/ reducing negative relationships


CANNABIS FOR DEPRESSION?

- Cannabis can be part of a holistic careplan for depression, but evidence does not support it as a stand-alone treatment.
- Can be effective in depression/ pain comorbidity
- Cannabis use has been correlated with worsening depression — likely high THC/ Type 1 chemovars
- CBD has anxiolytic, antidepressant benefits & increases hippocampal neurogenesis.

DOSING & PRODUCT SELECTION

- Microdose as needed (inhalation)
- Type 2 or 3 chemovars (balanced / CBD-rich)
- Type 1 chemovars (in moderation) for associated insomnia (consider lifestyle medicine strategies instead)
- *Cannabis Pharmacy* (Backes, 2017):
 - 2.5 to 5mg THC (inhaled/ sublingual) accompanied by 5 to 10 mg CBD for concurrent anxiety (if present)
 - Oral CBD — 10:1 (CBD:THC) or greater.



A photograph of a small waterfall cascading over mossy rocks in a forest. The water is white and frothy as it falls, surrounded by lush green moss and foliage. The scene is captured in a close-up, focusing on the texture of the rocks and the movement of the water.

**“In the confrontation between the stream and the rock,
the stream always wins,
not through strength but by perseverance.”**

—H. Jackson Brown, Jr (author)

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