Cannabis Use Disorder

Interventions for Adults: State of the Science and Looking Ahead

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Prevalence of Cannabis Use Disorder

- 4.3 million (age 12 and above) met criteria in 2012
- 9% of those who ever use
- 17% of those who use marijuana early in adolescence
- Up to 50% of heavy users

Relative Risk of Dependence

- Heroin 23.1%
- Cocaine 16.7%
- Stimulants 11.2%
- **Marijuana 9.1%**
- Tobacco 31.9%
- Alcohol 15.4%

Rates of Marijuana Dependence Incidence

20,000 – 90,000 people become marijuana dependent each year

50 to 250 people become marijuana dependent each day

Cognitive-Behavioral Therapy

+

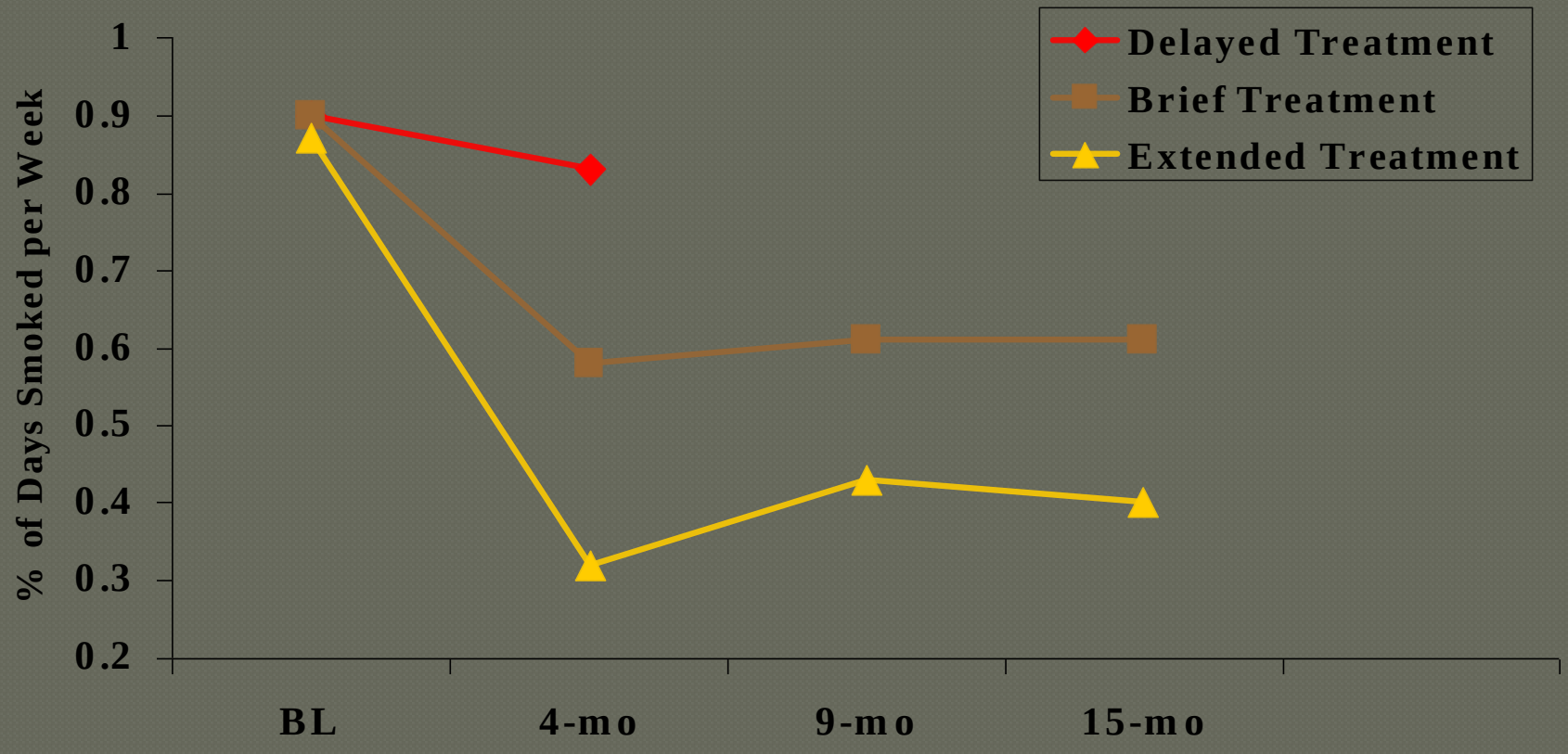
Motivational Enhancement Therapy

- MET – 2 sessions (5 weeks)
- CBT/MET/Case Management – 9 individual sessions (12 weeks)
- Delayed Treatment

- Both treatments superior to DTC.
- CBT/MET/Case Management superior to MET.

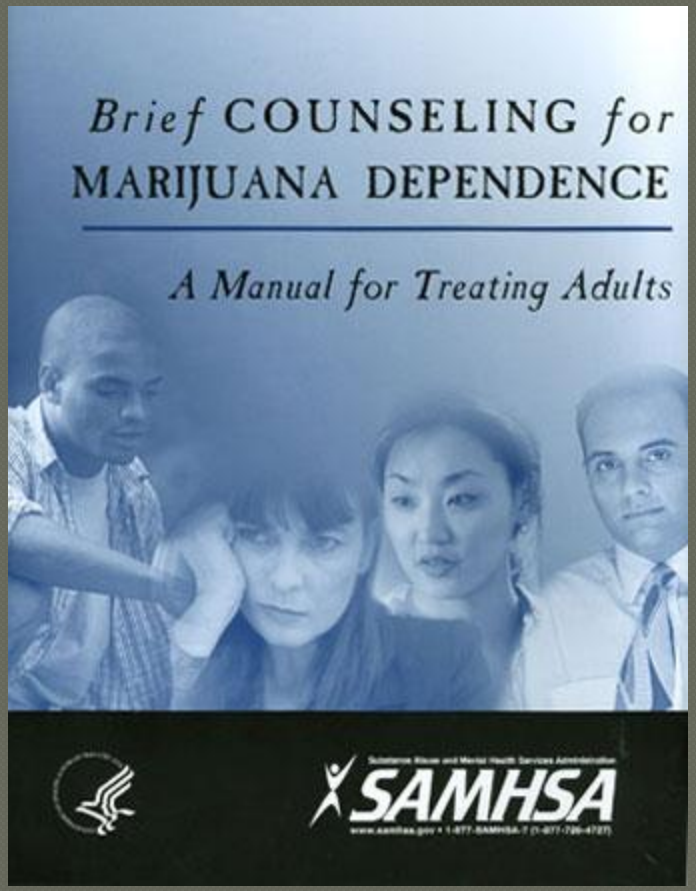
-- Marijuana Treatment Project Research Group, 2004

Posttreatment Days of Use



90-day Abstinence Rates

Online at SAMHSA website



Cognitive-Behavioral Therapy

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Motivational Enhancement Therapy

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Contingency Management

- CBT/MET/CM – 14 sessions
  - Up to $570 worth of abstinence-based vouchers
  - Vouchers redeemed for retail goods or services
- CBT/MET – 14 sessions
- MET – 4 sessions

-- Budney, Higgins, Radonovich, & Novy, 2000

- Abstinent for at least 7 weeks during tx
  - 40% of CBT/MET/CM
  - 5% of CBT/MET
  - 5% of MET
- Abstinent at end of tx
  - 35% of CBT/MET/CM
  - 10% of CBT/MET
  - 5% of MET
- No significant difference in abstinence between CBT/MET and MET

In a subsequent trial …

- Abstinence-based vouchers led to extended during treatment abstinence, even with no counseling.
- MET/CBT/CM had better long-term outcomes than CM alone.
- Yet, long-term abstinence rates were still modest (37%).

Cognitive-Behavioral Therapy

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Motivational Enhancement

Therapy

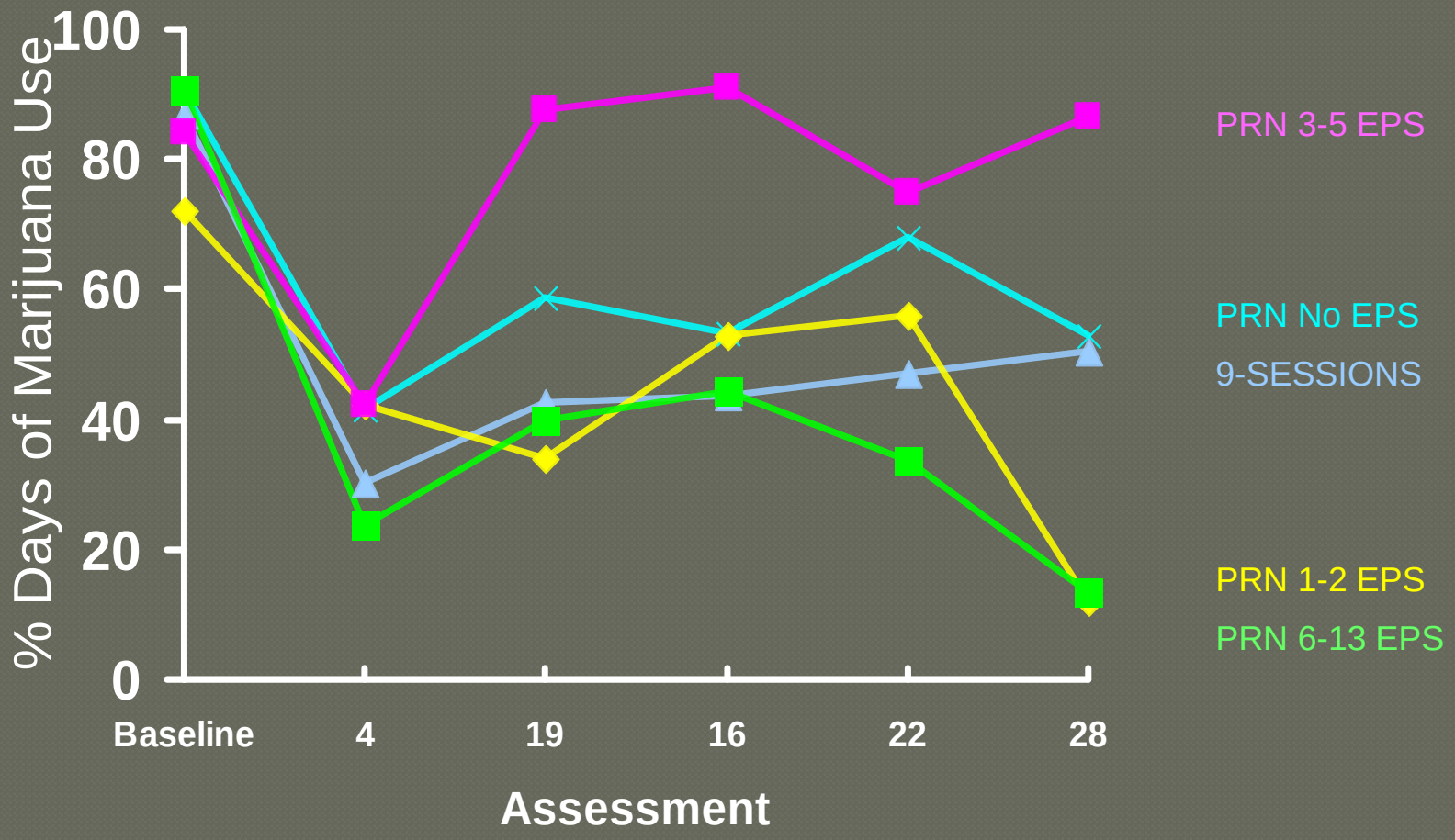
+

Continuing Care

- CBT/MET/Case Mgmt – 9 individual sessions (12 weeks)
- CBT/MET/Case Mgmt – 4 individual sessions (4 weeks) plus *treatment as needed*
  - Additional Treatment Episodes over next 30 months – As Needed
    - Each episode 1-3 weekly sessions
    - See same therapist
    - Number and content of sessions decided on by client-therapist interaction

-- Stephens & Roffman, 2006

Percent Days of Use by Episode Utilization



Aversion Therapy

- Schick Shadel Hospital; 1988
- 22 adult chronic marijuana smokers
- 5 days of 50-minute aversion sessions
  - Rapid smoking of THC-free marijuana
  - 3 weekly group counseling sessions
- 75% abstinent at 6 months; 84.2% at 12 months
- No control group; un-replicated

-- Smith, J.W., Schmeling, G., & Knowles, P.L. (1988)

Mindfulness Meditation

+

Motivational Interviewing

- MI/MM – 2 sessions
- Assessment only
- At follow-up, few had achieved abstinence; no significant difference between groups.
- MI/MM participants reported significantly fewer days of use at follow-up than did Assessment Only participants.

-- deDios, Herman, Britton, Hagerty, et al., 2012

Psychodynamic Therapy

- Randomized to
  - Supportive-Expressive Psychotherapy – 16-sessions; manual-guided; focus on interpersonal relationships as mediating factor in treatment outcome.
  - Single session of brief advice; self-help materials ("A Guide to Quitting Marijuana")

- At 4 months, abstinence significantly greater in S-E (58%) than in Advice (16%)

- At 12 months, no significant difference in abstinence between S-E (28%) and Advice (14%)

-- Grenyer & Solowij, 2006

Delivering CBT/MET by Phone

- Participants recruited from callers to the Australian Cannabis Information and Helpline
- Randomized to:
  - 4 sessions of CBT/MET + *Quitting Cannabis Workbook*
  - DTC
- Treated compared to controls:
  - Greater reductions in dependence symptoms and related problems at 4 and 12 weeks
  - Greater confidence to reduce use at 4 weeks
- Percent of abstinent days reduced overall at 12 weeks (Active: 73.3%; DTC: 55.3%)

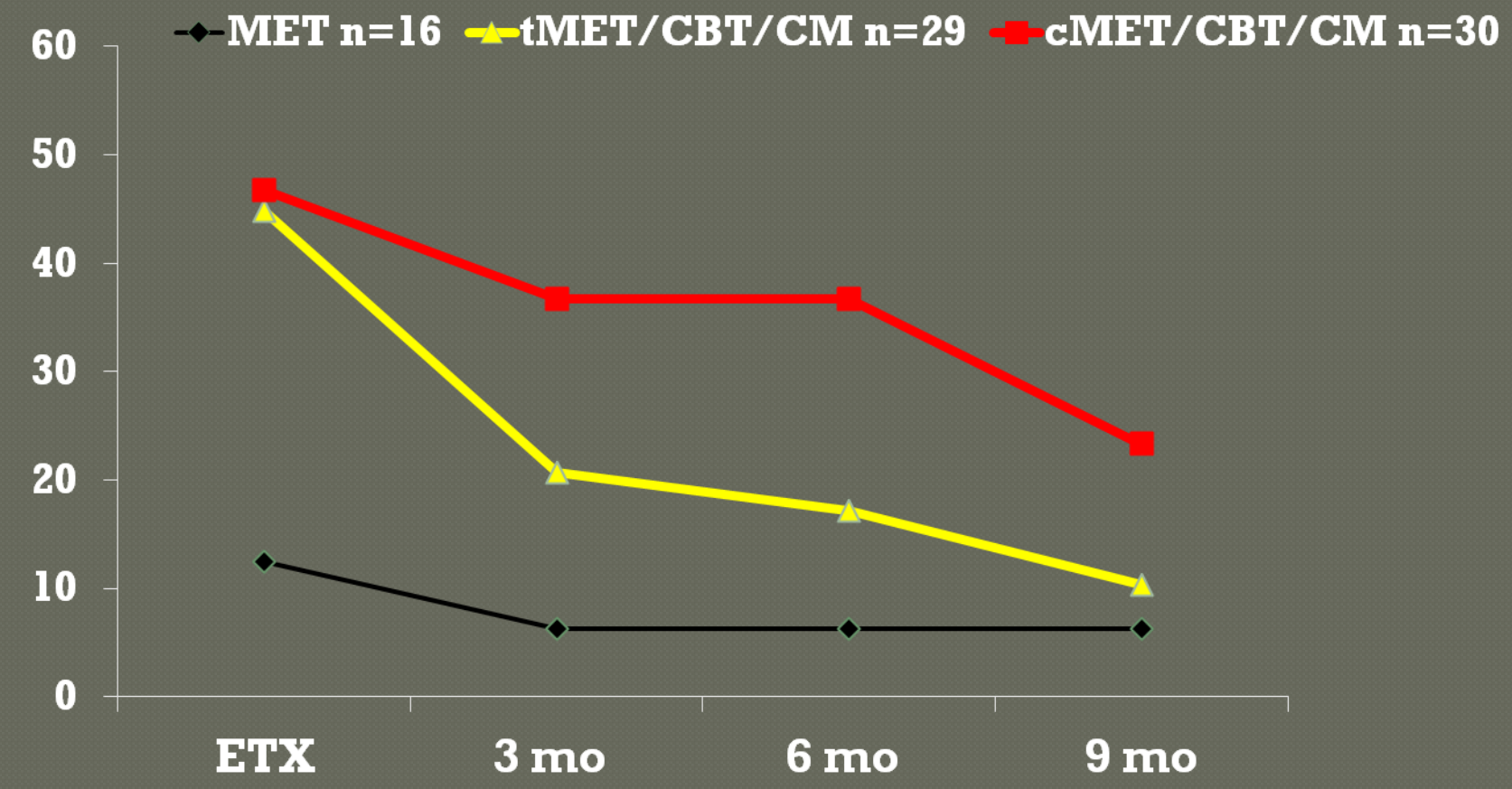
-- Gates, Norberg, Copeland, & Diguisto, 2012

Delivering CBT/MET/CM by Computer

- Randomized Trial
  - MET (2 sessions)
  - tMET/CBT/CM – 9 sessions over 12 weeks
  - cMET/CBT/CM – 9 sessions over 12 weeks (augmented by 3 supportive sessions with a therapist)
- Assessment: End of tx, 3, 6 , & 9 months post treatment

-- Budney, 2013

Post Treatment Point Prevalence Abstinence



Conclusions

- Computer-assisted MET/CBT/CM for cannabis use is efficacious and equivalent to therapist-delivered treatment in the initiation and maintenance of cannabis abstinence
  - The potential savings from computerized MET/CBT could offset expenses related to CM, and facilitate its dissemination.
  - Computerized therapy may enhance access to MET/CBT.
  - Could expedite adoption of effective cannabis and other forms of substance abuse treatments.

Delivering CBT/MET via the Web

- Web-based intervention ("Reduce Your Use")
  - 6 core modules based on CBT/MET
  - Ongoing feedback:
    - Graphing of cannabis use, attitudes, goals, weekly expenditures
  - Blogs from former cannabis users on website
  - Quick assist links on website
  - Weekly automated encouragement emails
- Web-based cannabis education – 6 modules
  - What is cannabis? Cannabis potency. Cannabis and the law. Cannabis in the workplace. Cannabis and aggression. Cannabis and driving.

-- Rooke, Copeland, Norberg, Hine, & McCambridge, 2013

- High rates of non-compliance
- At 6 weeks, experimental group reported significantly:
  - fewer days of use in past month (43.5% vs 32.% reduction for controls)
  - lower quantity of use in past month (53.8% reduction vs 44.2% reduction for controls)
  - fewer symptoms of cannabis abuse
- At 6 weeks, no differences in number or severity of cannabis dependence symptoms or past-month abstinence.
- At 3 months, experimental group reported significantly fewer and less severe cannabis dependence symptoms.

Reaching the Non-Treatment-Seeking Ambivalent User

Questions About Your Pot Use?

call

THE MARIJUANA CHECK UP

(206) 616-3457

www.marijuanacheckup.com

For adults who have questions.

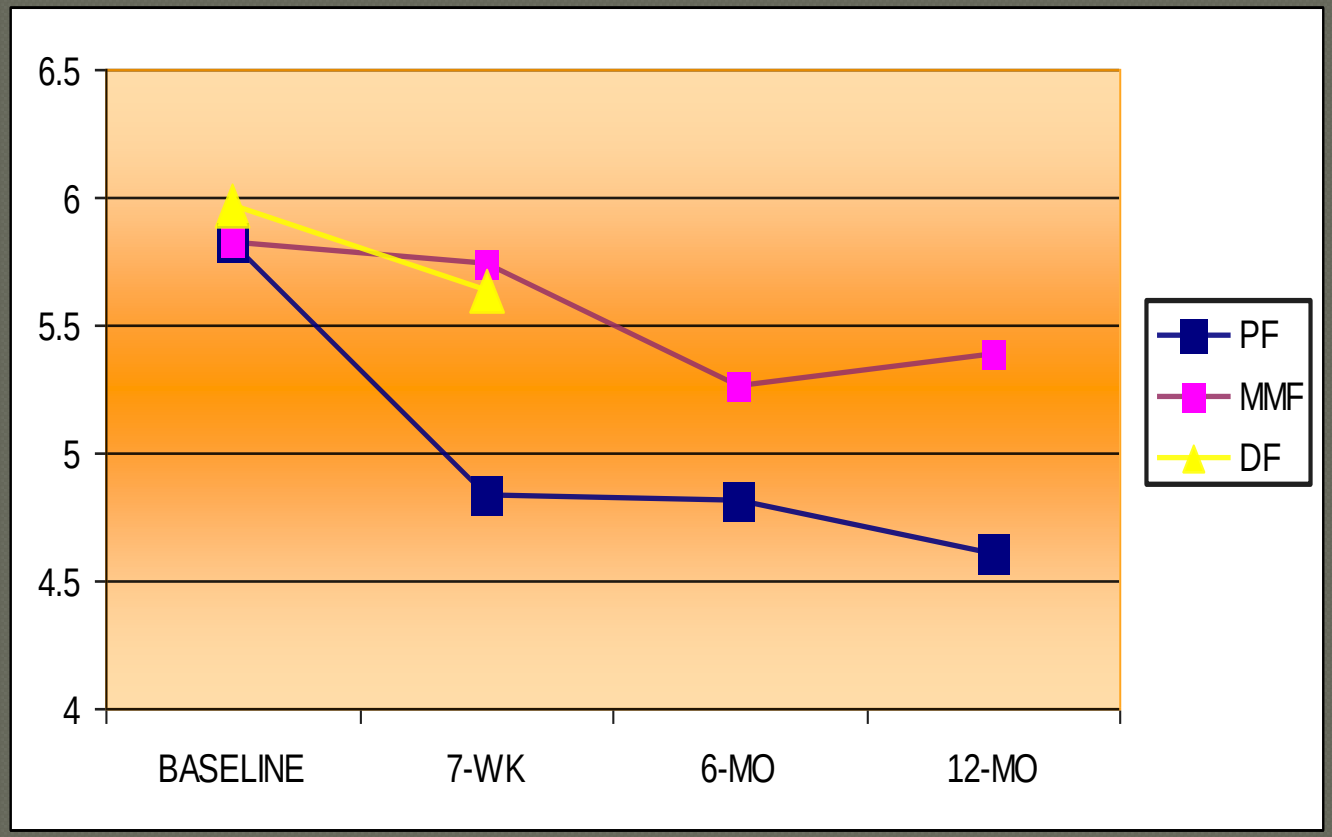
Not a treatment program.

Free and Confidential.

Research at the UW School of Social Work

- **Personalized Feedback (PF)**
  - Personal Feedback Report based on comparisons of participant's baseline data with normative data
  - MI style when delivering feedback
- **Multimedia Feedback (MMF)**
  - Unbiased research findings on the effects of marijuana
  - Presented via computerized slides and video
- **Delayed Treatment (DF)**
  - No intervention for 7 weeks
  - Followed by choice of feedback intervention
  - Not followed-up at 6 and 12 months

Number of Days Smoked per Week



Pharmacological Treatment

Treatment of withdrawal

- Two types:
  - CB receptor agonists that suppress withdrawal symptoms
  - Medications that alleviate symptoms (dysphoric mood, irritability, sleep disturbance)
- Oral synthetic THC (dronabinol) – reduction of withdrawal discomfort
- Lofexidine (used to treat opiate withdrawal) plus oral THC
  - Produced the most robust improvements in sleep and decreased cannabis withdrawal, craving, and relapse relative to either medication alone

- Buspirone (Buspar) – anxiolytic
  - Reduced frequency and duration of cannabis craving
  - Reduced irritability and depression
  - Trend: earlier abstinence when compared with placebo in a cannabis dependence treatment trial
- Lithium – mood stabilizer
  - 7 days of medication while in an in-patient detox facility
  - High rate of self-reported abstinence during follow-up
- Gabapentin (Neurontin) – treatment of pain, seizures
  - Compared with placebo in a 12-week cannabis treatment program
  - Significant reduction in cannabis use, withdrawal symptoms
  - Significant improvement in tests of executive function

Ineffective

- Divalproex (an anticonvulsant) – poorly tolerated
- Buproprion (an antidepressant; smoking cessation) – worsened symptoms
- Nefazadone (an antidepressant) – worsened symptoms
- Baclofen (antispasmodic medication) – ineffective in preventing relapse
- Mirtazapine (an antidepressant) – ineffective in preventing relapse
- Naltrexone – may increase cannabis use
- Rimonabant (CB_1 receptor antagonist) – psychiatric side-effects

What helps people change?

Several key findings from behavioral studies

- Being abstinent at start of treatment
- Continuous abstinence during treatment, i.e., avoiding early lapses
- Making frequent use of coping strategies (calming thoughts, finding other ways to relax, finding other ways to cope with negative emotions, stimulus removal)
- Sense of self-efficacy
- Reduced exposure to other users

- Using no more than 1-2 times/month if seeking moderation.
- Acquiring social support.

Future Research

Future intervention development…

- Needed: Defining and measuring non-problematic marijuana use
- Moderation-focused counseling
- Menu-driven treatment
- Treatment services contingent on behavioral performance markers
- Goals for use individually tailored to meet quality of life objectives

- Cannabis use disorder treatment integrated with treatment for concurrent psychosocial disorders

Policy Implications

- Technical assistance should be provided to agencies and practitioners in adopting evidence-based Cannabis Use Disorder interventions.
- The Marijuana Help-Line should include the 4-session telephone CBT/MET intervention studied in Australia.

- Considerable misinformation about marijuana as having a dependence liability suggests the importance of science-based public education.

- Research is needed on the effectiveness of alternate methods of educating each segment of the public concerning marijuana.

- Research is needed on the dependence liability of varying marijuana products.

DSM V Highlights

Cannabis Use Disorder is…

"A problematic pattern of cannabis use leading to clinically significant impairment or distress, as manifested by at least two of the following, occurring within a 12-month period."

Using more or for a longer period than intended	Use leads to giving up or reducing important social, occupational, or recreational activities
Persistent desire to cut back or control use	Recurrent use in hazardous situations
Great deal of time spent in using	Continued use despite recurrent physical or psychological problems related to use
Craving, strong urges to use	Tolerance
Use contributes to failure to perform obligations (work, school, home)	Withdrawal
Continued use despite recurrent interpersonal or social problems related to use	

Severity levels:

- Mild (2 or 3 symptoms)
- Moderate (4 or 5 symptoms)
- Severe (6 or more symptoms)

Remission levels

- In early remission:

  None of the criteria (except craving) have been met for 3 to <12 months

- In sustained remission:

  None of the criteria (except craving) have been met for at least 12 months

Key changes from DSM IV

No distinction between abuse and dependence.

Added: "Recognition that abrupt cessation of daily or near-daily cannabis use often results in the onset of a cannabis withdrawal syndrome."

- Irritability
- Depressed mood
- Anxiety
- Decreased appetite
- Anger or aggression
- Restlessness
- Sleep difficulty

Added:	"Craving, or a strong desire or urge to use cannabis."
Dropped:	Legal problems

-- Hasin, O'Brien, Auriacombe, Borges, et al., 2013

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