Putting a Spotlight on Science:

Uncovering "Hidden Treasures" in Published Literature with Implications for Prevention

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University of Washington
Associate Professor
Psychiatry & Behavioral Sciences
LiveWell Assistant Director for Alcohol & Other Drug Education
Division of Student Life

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Overview of this presentation

- **Special thank you to Tracy Flinn**
- What I said I'd do:
  - "One of the identified barriers to implementing evidence-based strategies involves dissemination -- often, findings appear in journals not oriented to clinicians, and some articles are not very "user friendly." In this Power Session, we will look at scientific findings with clear implications for prevention efforts and prevention specialists, with a focus on ways to bridge the gap between science and practice in our communities."

2

In no particular order, my favorite "hidden treasures" that have implications for us as prevention professionals

**** Original BARLAB/balanced-placebo on social effects, placebo challenge with marijuana edibles, and situational specificity of tolerance excluded since I addressed these at past two NPN conferences***

3

#10. Uncovering the relationship between high potency THC and mental health outcomes

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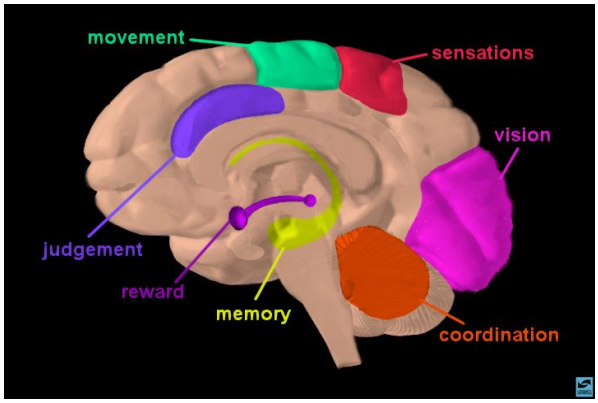

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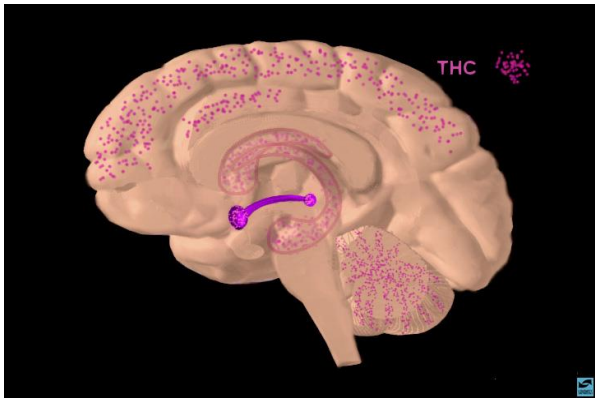

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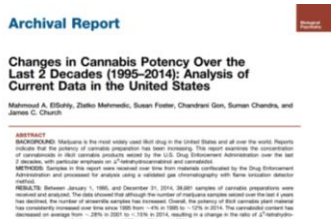
ElSohly, M.A., Mehmedic, Z., Foster, S., Gon, C., Chandra, S., & Church, J.C. (2016). Changes in cannabis potency over the last 2 decades (1995-2014) – Analysis of current data in the United States. *Biol Psychiatry, 79,* 613-619.



Archival Report

Changes in Cannabis Potency Over the Last 2 Decades (1995–2014): Analysis of Current Data in the United States

Mahmoud A. ElSohly, Zlatko Mehmedic, Susan Foster, Chandrani Gon, Suman Chandra, and James C. Church

ABSTRACT

BACKGROUND: Marijuana is the most widely used illicit drug in the United States and all over the world. Reports indicate that the potency of cannabis preparation has been increasing. This report examines the concentration of cannabinoids in illicit cannabis products seized by the U.S. Drug Enforcement Administration over the last 2 decades, with particular emphasis on Δ^9-tetrahydrocannabinol and cannabidiol.

METHODS: Samples in this report were received over time from materials confiscated by the Drug Enforcement Administration and processed for analysis using a validated gas chromatography with flame ionization detector method.

RESULTS: Between January 1, 1995, and December 31, 2014, 39,691 samples of cannabis preparations were received and analyzed. The data showed that although the number of marijuana samples seized over the last 4 years has declined, the number of sinsemilla samples has increased. Overall, the potency of illicit cannabis plant material has consistently increased over time since 1995 from ~4% in 1995 to ~12% in 2014. The cannabidiol content has decreased on average from ~.28% in 2001 to ~.15% in 2014, resulting in a change in the ratio of Δ^9-tetrahydro-

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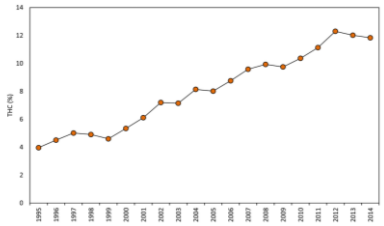

El Sohly, M.A., Mehmedic, Z., Foster, S., Gon, C., Chandra, S., & Church, J.C. (2016). Changes in cannabis potency over the last two decades (1995-2014) – Analysis of current data in the United States. *Biol Psychiatry, 79,* 613-619.

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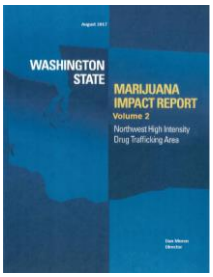
Washington State Impact Report



www.mfiles.org

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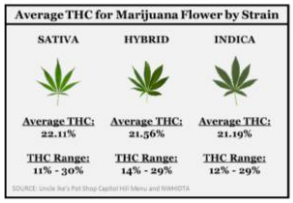
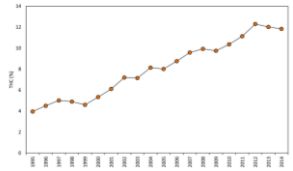


Average potency (nation) = 13.18%
Average potency (Seattle) = 21.62%

Concentrates average potency (nation) = 55.85%
Concentrates average potency (Seattle) = 71.71%

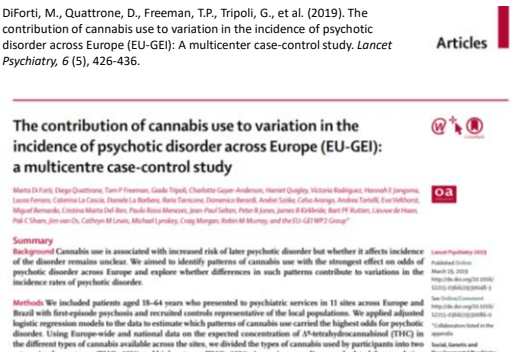
10



El Sohly, M.A., Mehmedic, Z., Foster, S., Gon, C., Chandra, S., & Church, J.C. (2016). Changes in cannabis potency over the last two decades (1995-2014) – Analysis of current data in the United States. *Biol Psychiatry, 79,* 613-619.

11

DiForti, M., Quattrone, D., Freeman, T.P., Tripoli, G., et al. (2019). The contribution of cannabis use to variation in the incidence of psychotic disorder across Europe (EU-GEI): A multicenter case-control study. *Lancet Psychiatry, 6* (5), 426-436.


Articles

The contribution of cannabis use to variation in the incidence of psychotic disorder across Europe (EU-GEI): a multicentre case-control study

Summary

Background Cannabis use is associated with increased risk of later psychotic disorder but whether it affects incidence of the disorder remains unclear. We aimed to identify patterns of cannabis use with the strongest effect on odds of psychotic disorder across Europe and explore whether differences in such patterns contribute to variations in the incidence rates of psychotic disorder.

Methods We included patients aged 18–64 years who presented to psychiatric services in 11 sites across Europe and Brazil with first-episode psychosis and recruited controls representative of the local populations. We applied adjusted logistic regression models to the data to estimate which patterns of cannabis use carried the highest odds for psychotic disorder. Using Europe-wide and national data on the expected concentration of Δ⁹-tetrahydrocannabinol (THC) in the different types of cannabis available across the sites, we divided the types of cannabis used by participants into two

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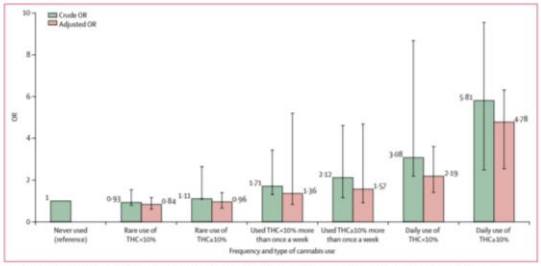

Figure 1: Crude and fully adjusted ORs of psychotic disorders for the combined measure of frequency plus type of cannabis use in the whole sample
Crude ORs are adjusted only for age, gender and ethnicity and fully adjusted ORs are additionally adjusted for level of education, employment status, and use of tobacco, stimulants, ketamine, legal highs, and hallucinogenics. Error bars represent 95% CIs. OR=odds ratio.

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Conclusions

- 20% of new cases of psychotic disorder "could have been prevented if daily use of cannabis had been abolished (page 7)"
- If high-potency cannabis were no longer available, 12.2% of cases of first-episode psychosis could be prevented
- Number for Amsterdam?
  - **50.3% of cases could be prevented**

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#9, #8, and #7) Examining the role of placebo effects and expectancies for various substances

15

#9 and #8: Early Applications of the Balanced Placebo Design

16

Marlatt, GA., Demming, B., & Reid, J.B. (1973). Loss of control drinking in alcoholics: An experimental analogue. *Journal of Abnormal Psychology, 81*, 233-241.

LOSS OF CONTROL DRINKING IN ALCOHOLICS: AN EXPERIMENTAL ANALOGUE[1]

G. ALAN MARLATT,[2] BARBARA DEMMING, AND JOHN B. REID[3]

University of Wisconsin

- Named a "Citation Classic" in 1985 by *Current Contents: Social and Behavioral Sciences*
- Recognized as a "Seminal Article in Alcohol Research" in *Alcohol Health and Research World*

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Marlatt, Demming, & Reid (1973)

- "Participate in a taste study which may involve sampling alcohol…"
- Taste rating task for three drinks (e.g., "bitter," "strong," "watery," "sweet," etc.).
  - Smirnoff, Petrushka, "Brand X"
  - Canada Dry, Schweppes, "Brand X"
- "Feel free to sample as much of each beverage as you need..."

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Total amount of beverage consumed in fluid ounces

GET \ EXPECT	Alcohol	No Alcohol	
Alcohol	22.13	10.25	14.69
No Alcohol	23.87	10.94	13.19
	23.00	10.60	

19

Marlatt, Demming, & Reid (1973)

- Expectancy was a significant factor in determining amount consumed, amount consumed per sip, and even estimates of how strong the drink was
- Rather than discount the relevance of physiological factors in loss of control drinking, highlights the role of cognitive factors

20

Lang, A.R., Goeckner, D.J., Adesso, V.J., & Marlatt, G.A. (1975). Effects of alcohol on aggression in male social drinkers. *Journal of Abnormal Psychology, 84,* 508-518.

Effects of Alcohol on Aggression in Male Social Drinkers

Alan R. Lang, University of Wisconsin—Madison
Daniel J. Goeckner and Vincent J. Adesso, University of Wisconsin—Milwaukee
G. Alan Marlatt, University of Washington

- 2 x 2 x 2 design
  - expect alcohol or no alcohol
  - get alcohol or no alcohol
  - provoked or not provoked

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Lang, Goeckner, Adesso, & Marlatt (1975)

- Participants told study would test the effects of alcohol on personality, learning, and various other behaviors
- Told each person would receive a drink (regardless of whether or not they were getting alcohol) to keep administration procedures the same
- Then, people were randomly assigned to one of the four conditions in the balanced placebo design.

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Lang, Goeckner, Adesso, & Marlatt (1975)

- Series of psychological tests, followed by a tracing task
- Provocation condition in half of cases
- Teacher/learner
- Punish for wrong answers with "shocks" (no actual shock was given, but provided a way to measure aggression without anyone actually being harmed)
- Intensity and duration an analog for actual aggression

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Means for "shock" intensity (range 1-10)

EXPECT

GET	Alcohol		No Alcohol	
	Provoked	Not Provoked	Provoked	Not Provoked
Alcohol	5.06	4.59	3.80	2.90
No Alcohol	5.00	4.80	3.59	2.70
	4.87		**3.25**	

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Lang, Goeckner, Adesso, & Marlatt (1975)

- No main effect for what people received
- No main effect of whether people were provoked or not
- No significant interactions

- However, those who expected alcohol…
  - Gave more intense shocks
  - Gave shocks of longer duration

25

#7 Including placebos and accounting for expectancies with CBD

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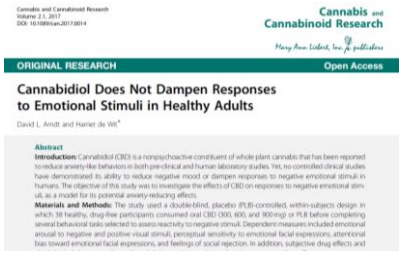
Cannabis and Cannabinoid Research

ORIGINAL RESEARCH Open Access

Cannabidiol Does Not Dampen Responses to Emotional Stimuli in Healthy Adults

David L. Arndt and Harriet de Wit*

Abstract

Introduction: Cannabidiol (CBD) is a nonpsychoactive constituent of whole plant cannabis that has been reported to reduce anxiety-like behaviors in both preclinical and human laboratory studies. Yet, no controlled clinical studies have demonstrated its ability to reduce negative mood or dampen responses to negative emotional stimuli in humans. The objective of this study was to investigate the effects of CBD on responses to negative emotional stimuli, as a model for its potential anxiety-reducing effects.

Materials and Methods: The study used a double-blind, placebo (PLB)-controlled, within-subjects design in which 38 healthy, drug-free participants consumed oral CBD (300, 600, and 900 mg) or PLB before completing several behavioral tasks selected to assess reactivity to negative stimuli. Dependent measures included emotional arousal to negative and positive visual stimuli, perceptual sensitivity to emotional facial expressions, attentional bias toward emotional facial expressions, and feelings of social rejection. In addition, subjective drug effects and

Arndt, D.L., & de Wit, H. (2017). Cannabidiol does not dampen responses to emotional stimuli in healthy adults. *Cannabis and Cannabinoid Research, 2* (1), 105-113.

"This study suggests that oral CBD does not alter responses to emotional stimuli, or produce anxiolytic-like effects in healthy human subjects. (p. 112)"

Arndt & de Wit (2017)

27

#6 Examining alcohol-related risk factors for suicide (referencing a hidden treasure within the treasure)

28

Hufford, M.R. (2001). Alcohol and suicidal behavior. *Clinical Psychology Review, 21* (5), 797-811.

Pergamon

Clinical Psychology Review, Vol. 21, No. 5, pp. 797–811, 2001
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0272-7358/01/$ – see front matter

PII S0272-7358(00)00070-2

ALCOHOL AND SUICIDAL BEHAVIOR

Michael R. Hufford

University of Montana

ABSTRACT. *Alcohol dependence and alcohol intoxication are important risk factors for suicidal behavior. However, the mechanism for the relationship remains unclear. This review presents a conceptual framework relating alcohol to suicidal behavior. Distal risk factors create a statistical potential for suicide. Alcohol dependence, as well as associated comorbid psychopathology and negative life events, act as distal risk factors for suicidal behavior. Proximal risk factors determine the timing of suicidal behavior by translating the statistical potential of distal risk factors into action. The acute effects of alcohol intoxication act as important proximal risk factors for suicidal behavior among the alcoholic and nonalcoholic alike. Mechanisms responsible for alcohol's ability to increase the proximal risk for suicidal behavior include alcohol's ability to: (1) increase psychological distress, (2)*

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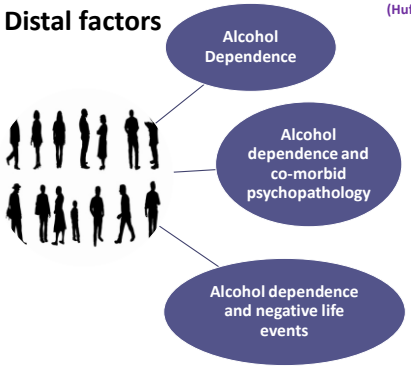
Alcohol-related risk factors for suicide (Hufford, 2001)

- **Distal risk factors**
  - Relatively stable characteristics/ events occurring in the weeks, months, or years preceding suicidal behavior.
- **Proximal risk factors**
  - Variables that increase suicide risk in moments immediately before suicidal behavior

30

Alcohol-related risk factors for suicide
(Hufford, 2001)



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Alcohol-related risk factors for suicide (Hufford, 2001)

- **Distal risk factors**
  - **Alcohol dependence and negative life events**
    - **Interpersonal loss**
      - **Over one-fourth of those with alcohol dependence who committed suicide experienced interpersonal loss within 6 weeks of their death (Murphy, et al., 1979)**
    - **Relapse**
      - **Those with alcohol dependence are at greater risk for suicide during periods of active drinking**

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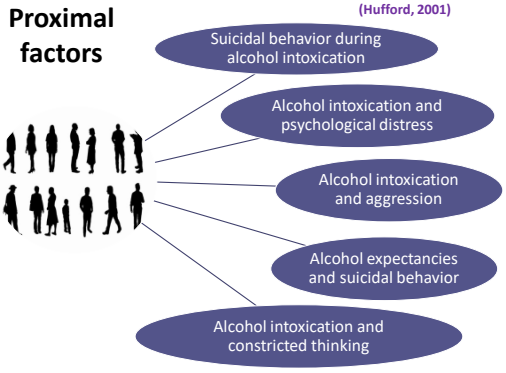
Alcohol-related risk factors for suicide
(Hufford, 2001)



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Alcohol-related risk factors for suicide (Hufford, 2001)

- **Proximal risk factors**
  - Suicidal behavior during alcohol intoxication
    - Looking at odds ratios, Borges & Rosovsky (1996) showed consumption of over 10 standard drinks increases risk for suicide attempts ***90 times*** in comparison to abstinence
    - Acute intoxication greater risk than habitual

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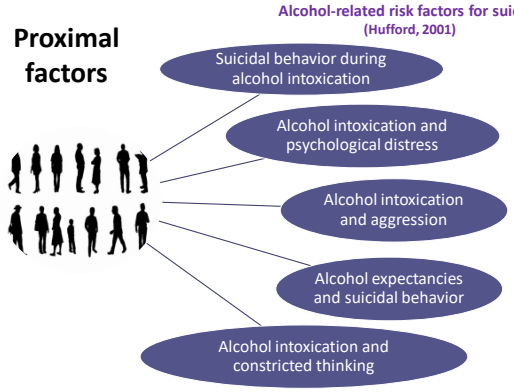
Alcohol-related risk factors for suicide (Hufford, 2001)



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Alcohol-related risk factors for suicide (Hufford, 2001)

- **Proximal risk factors**
  - Alcohol intoxication and constricted thinking
    - Alcohol myopia (Steele & Josephs, 1990)

36

Steele, C.M., & Josephs, R.A. (1990). Alcohol myopia: Its prized and dangerous effects. *American Psychologist, 45* (8), 921-933.

Alcohol Myopia

Its Prized and Dangerous Effects

Claude M. Steele and Robert A. Josephs *University of Michigan*

ABSTRACT: This article explains how alcohol makes social responses more extreme, enhances important self-evaluations, and relieves anxiety and depression, effects that underlie both the social destructiveness of alcohol and the reinforcing effects that make it an addictive substance. The theories are based on alcohol's impairment of perception and thought—the myopia *it causes—rather than on the ability of alcohol's pharmacology to directly cause specific reactions or on expectations associated with alcohol's use. Three conclusions are offered (a) Alcohol makes social behaviors more extreme by blocking a form of response conflict. (b) The same process can inflate self-evaluations. (c) Alcohol myopia, in combination with dis-*

icant effects, a straightforward idea has dominated the thinking of laymen and scientists alike: Such effects stem directly from the pharmacological properties of alcohol, much the way relaxation stems from the pharmacological properties of valium. We know, for example, that people often drink alcohol to get the effects they assume it will directly cause: relaxation, a better mood, courage, social ease, and so on (e.g., Goldman, Brown, & Christiansen, 1987; Leigh, 1989; Maisto, Connors, & Sachs, 1981). This idea explains both heads of the beast; some of these direct effects, such as aggression and hostility, can be socially destructive, and others, such as relaxation and tension reduction, are reinforcing enough to make alcohol a po-

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"Alcohol Myopia"

Impelling Cues

Alcohol impairs information processing, **narrowing attention** to only the most salient internal and environmental cues.

?

Inhibiting Cues

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Alcohol-related risk factors for suicide (Hufford, 2001)

- **Proximal risk factors**
  - **Alcohol intoxication and constricted thinking**
    - **Alcohol myopia** (Steele & Josephs, 1990)
      - *"The immediate, and usually painful, aspects of experience take on disproportionate weight in the delicate balance between choosing life over death among those contemplating suicide (p. 804)."*
    - **Can interfere with inhibition conflict**
      - *"Alcohol intoxication acts to interrupt inhibition conflict through alcohol myopia, leading to more excessive responses than would have occurred while sober (p. 804)."*

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"Alcohol prevention is suicide prevention…"

Laurie Davidson, Suicide Prevention Resource Center

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#5 Potentially lessening trauma through correcting normative misperceptions

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Rape Myth Acceptance

- **Rape myth acceptance can impact bystander behavior –**
  - **Individuals who were more likely to accept rape myths had lower intentions to intervene in a potential sexual assault situation** (Hust, et al., 2013)
  - **Those who perceived their peers would intervene in a potential sexual assault situation were more likely to intervene themselves**

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Updated Illinois Rape Myth Acceptance Scale (IRMA)

	Strongly agree 1	2	3	4	Strongly disagree 5
Subscale 1: She asked for it					
1. If a girl is raped while she is drunk, she is at least somewhat responsible for letting things get out of hand.					
2. When girls go to parties wearing slutty clothes, they are asking for trouble.					
3. If a girl goes to a room alone with a guy at a party, it is her own fault if she is raped.					
4. If a girl acts like a slut, eventually she is going to get into trouble.					
5. When girls get raped, it's often because the way they said "no" was unclear.					
6. If a girl initiates kissing or hooking up, she should not be surprised if a guy assumes she wants to have sex.					
Subscale 2: He didn't mean to					
7. When guys rape, it is usually because of their strong desire for sex.					
8. Guys don't usually intend to force sex on a girl, but sometimes they get too sexually carried away.					
9. Rape happens when a guy's sex drive goes out of control.					
10. If a guy is drunk, he might rape someone unintentionally.					
11. A guy shouldn't be considered rape if a guy is drunk and didn't realize what he was doing.					
12. If both people are drunk, it can't be rape.					
Subscale 3: It wasn't really rape					
13. If a girl doesn't physically resist sex—even if protesting verbally—it can't be considered rape.					
14. If a girl doesn't physically fight back, you can't really say it was rape.					
15. A rape probably doesn't happen if a girl doesn't have any bruises or marks.					
16. If the accused "rapist" doesn't have a weapon, you really can't call it rape.					
17. If a girl doesn't say "no" she can't claim rape.					
Subscale 4: She lied					
18. A lot of times, girls who say they were raped agreed to have sex and then regret it.					
19. Rape accusations are often used as a way of getting back at guys.					
20. A lot of times, girls who say they were raped often led the guy on and then had regrets.					
21. A lot of times, girls who claim they were raped have emotional problems.					
22. Girls who are caught cheating on their boyfriends sometimes claim it was rape.					

Illinois Rape Myth Acceptance Scale (IRMA)

(Payne, Lonsway, & Fitzgerald, 1999; McMahon & Farmer, 2011)

Sample items:

Subscale 1: "She asked for it"

1) *If a girl is raped while she is drunk, she is at least somewhat responsible for letting things get out of hand*

Subscale 2: "He didn't mean to"

12) *If both people are drunk, it can't be rape.*

Subscale 3: "It wasn't really rape"

17) *If a girl doesn't say "no" she can't claim rape.*

Subscale 4: "She lied"

19) *Rape accusations are often used as a way of getting back at guys.*

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Rape Myth Acceptance

- **The most striking findings with implications for positive community norms come from Paul and colleagues (2009).**

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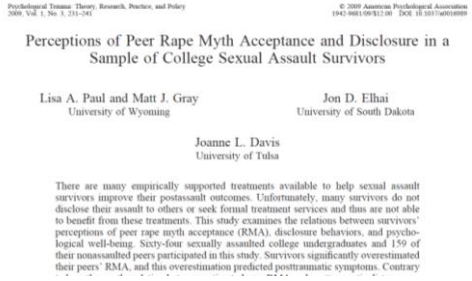
Paul, L.A., Gray, M.J., Elhai, J.D., & Davis, J.L .(2009). Perceptions of peer rape myth acceptance and disclosure in a sample of college sexual assault survivors. *Psychological Trauma: Theory, Research, Practice, and Policy, 1* (3), 231-241.



Psychological Trauma: Theory, Research, Practice, and Policy
2009, Vol. 1, No. 3, 231–241

1942-9681/09/$12.00 DOI: 10.1037/a0016889

Perceptions of Peer Rape Myth Acceptance and Disclosure in a Sample of College Sexual Assault Survivors

Lisa A. Paul and Matt J. Gray
University of Wyoming

Jon D. Elhai
University of South Dakota

Joanne L. Davis
University of Tulsa

There are many empirically supported treatments available to help sexual assault survivors improve their postassault outcomes. Unfortunately, many survivors do not disclose their assault to others or seek formal treatment services and thus are not able to benefit from these treatments. This study examines the relations between survivors' perceptions of peer rape myth acceptance (RMA), disclosure behaviors, and psychological well-being. Sixty-four sexually assaulted college undergraduates and 159 of their nonassaulted peers participated in this study. Survivors significantly overestimated their peers' RMA, and this overestimation predicted posttraumatic symptoms. Contrary

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Rape Myth Acceptance

- Paul and colleagues (2009) hypothesized that if survivors of sexual assault feel others hold "victim blaming" beliefs, they may be less likely to disclose an assault and may experience more post-assault trauma/distress

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Rape Myth Acceptance

- Paul and colleagues (2009) documented that college students overestimated the RMA of their peers
- *They found that among survivors of sexual assault, PTSD symptoms were significantly correlated with estimated peer RMA (r=.37).*

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Rape Myth Acceptance

- They conclude that social norms campaigns may be used to correct misperceptions that individuals have regarding RMA to potentially lessen distress for survivors of assault and increase bystander behavior among peers.

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#4 Separating out what medical marijuana might be used for

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Doctors should think twice before prescribing medical marijuana: guideline Source: CTVNews.com

New guideline warns pain benefits of medical cannabis overstated Source: ScienceDaily.com

University of Alberta led guideline warns health risks may outweigh benefits, provides guidance on when (and when not to) prescribe.

Canadian Doctors Warn Medical Pot Is Overhyped Source: Gizmodo.com

50

Allan, G.M., Ramji, J., Perry, D., Ton, J., Beahm, N.P., Crisp, N., Dockrill, B., Dublin, R.E., Findlay, T., Kirkwood, J., Fleming, M., Makus, K., Zhu, X., Korownyk, C., Kolber, M., McCormack, J., Nickel, S., Guillermina, N., & Lindblad, A.J. (2018). Simplified guidelines for prescribing medical cannabinoids in primary care. *Canadian Family Physician, 64,* 111-120.


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Simplified guideline for prescribing medical cannabinoids in primary care

Abstract

Objective To develop a clinical practice guideline for a simplified approach to medical cannabinoid

In this issue

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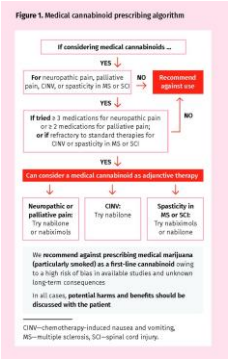

Only are recommending for neuropathic pain, palliative and end-of-life pain, chemotherapy-induced nausea and vomiting, and spasticity due to multiple sclerosis or spinal cord injury…

AND

If tried traditional therapies/treatments first…

Allan, et al. (2018)

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#3 Linking environmental AOD approaches to impacts on child abuse and neglect

53

Morton, M.C., Simmel, C., & Peterson, N.A. (2014). Neighborhood alcohol outlet density and rates of child abuse and neglect: Moderating effects of access to substance abuse services. *Child Abuse & Neglect, 38,* 952-961.


Child Abuse & Neglect 38 (2014) 952–961

Contents lists available at ScienceDirect

Child Abuse & Neglect

ELSEVIER

Neighborhood alcohol outlet density and rates of child abuse and neglect: Moderating effects of access to substance abuse services☆

Cory M. Morton[a,*], Cassandra Simmel[b], N. Andrew Peterson[b]

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[b] Rutgers, The State University of New Jersey, School of Social Work, 536 George Street, New Brunswick, NJ 08901, USA

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ABSTRACT

This study investigates the relationship between concentrations of on- and off-premises alcohol outlets and rates of child abuse and neglect. Additionally, the study seeks to locate protective features of a neighborhood's built environment by investigating the potential moderating role that access to substance abuse treatment and prevention services

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What did they find?

- "Areas with a greater concentration of on-premises alcohol outlets (i.e. bars) had higher rates of child neglect, and those with easier access to substance abuse services had lower rates of neglect."

Morton, Simmel, & Peterson (2014)

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What did they find?

- Conclusion?
  - "…strategies that seek to alter the availability of alcoholic beverages through limiting the number of licenses, hours of sale, or increasing prices via taxation have shown success in reducing problem drinking and could be considered as prevention avenues in child welfare…"
  - "The ability to invest in strengthening communities to support child well-being is an important goal that cuts across different human service sectors including child welfare, substance abuse prevention, urban planning, and alcoholic beverage control."
  - "Connecting the prevention of problem drinking and the accessibility of substance abuse services to the prevention of child maltreatment could provide policy opportunities to structure communities in a way that aids in the preservation of families."

Morton, Simmel, & Peterson (2014)

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#2 Understanding the difference between "lower risk" and "low" or "no" risk with marijuana

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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, e1-e12.


AJPH POLICY

Lower-Risk Cannabis Use Guidelines: A Comprehensive Update of Evidence and Recommendations

Benedikt Fischer, PhD, Cayley Russell, MA, Pamela Sabioni, PhD, Wim van den Brink, MD, PhD, Bernard Le Foll, MD, PhD, Wayne Hall, PhD, Jürgen Rehm, PhD, and Robin Room, PhD

Background. Cannabis use is common in North America, especially among young people, and is associated with a risk of various acute and chronic adverse health outcomes. Cannabis control regimes are evolving, for example toward a national legalization policy in Canada, with the aim to improve public health, and thus require evidence-based interventions. As cannabis-related health outcomes may be influenced by behaviors that are modifiable by the user, evidence-based Lower-Risk Cannabis Use Guidelines (LRCUG)—akin to similar guidelines in other health fields—offer a valuable, targeted prevention tool to improve public health outcomes.

Objectives. To systematically review, update, and quality-grade evidence on behavioral factors determining adverse health outcomes from cannabis that may be

Main results. For most recommendations, there was at least "substantial" (i.e., good-quality) evidence. We developed 10 major recommendations for lower-risk use: (1) the most effective way to avoid cannabis use–related health risks is abstinence, (2) avoid early age initiation of cannabis use (i.e., definitively before the age of 16 years), (3) choose low-potency tetrahydrocannabinol (THC) or balanced THC-to-cannabidiol (CBD)–ratio cannabis products, (4) abstain from using synthetic cannabinoids, (5) avoid combusted cannabis inhalation and give preference to nonsmoking use methods, (6) avoid deep or other risky inhalation practices, (7) avoid high-frequency (e.g., daily or near-daily) cannabis use, (8) abstain from cannabis-impaired driving, (9) populations at higher risk for cannabis use–related health problems should avoid use altogether, and

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"Recommendation #1: The most effective way to avoid any risks of cannabis use is to **abstain from use**. *Those who decide to use need to recognize that they incur risks of a variety of – acute and long-term – adverse health and social outcomes.* These risks will vary in their likelihood and severity with user characteristics, use patterns, and product qualities, and so may not be the same from user to user or use episode to another."

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Recommendation #3: Understand that "high THC-content products are generally associated with higher risks of various (acute and chronic) mental and behavioral problem outcomes."

Recommendation 3: High THC-content products are generally associated with higher risks of various (acute and chronic) mental and behavioral problem outcomes. Users should know the nature and composition of the cannabis products that they use, and ideally use cannabis products with

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Recommendation #7: Frequency of use


Recommendation 7: Frequent or intensive (e.g., daily or near-daily) cannabis use is strongly associated with higher risks of experiencing adverse health and social outcomes related to cannabis use, and individuals trying to keep their own cannabis use—and that of friends, peers, or fellow users—occasional (e.g., use only on 1 day/week, weekend use only, etc.) at most. [Evidence Grade: Substantial.]

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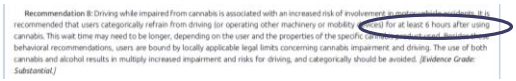
Recommendation #8: Related to risks associated with DUI


Recommendation 8: Driving while impaired from cannabis is associated with an increased risk of involvement in motor vehicle accidents. It is recommended that users categorically refrain from driving (or operating other machinery or mobility devices) for at least 6 hours after using cannabis. This wait time may need to be longer, depending on the user and the properties of the specific cannabis product and [unclear] behavioral recommendations, users are bound by locally applicable legal limits concerning cannabis impairment and driving. The use of both cannabis and alcohol results in multiply increased impairment and risks for driving, and categorically should be avoided. [Evidence Grade: Substantial.]

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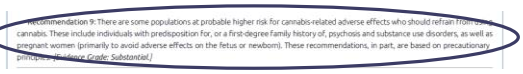
Recommendation #9: Refrain from use if you are actively dealing with psychosis or substance use issues (or have a first-degree family history)


Recommendation 9: There are some populations at probable higher risk for cannabis-related adverse effects who should refrain from use of cannabis. These include individuals with predisposition for, or a first-degree family history of, psychosis and substance use disorders, as well as pregnant women (primarily to avoid adverse effects on the fetus or newborn). These recommendations, in part, are based on precautionary principles. [Evidence Grade: Substantial.]

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#1 Expectancies among school age children

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Expectancies among school-age children

- **Students exhibiting positive adaptation when faced with stressors "worked well, played well, loved well, and expected well"**

Werner, E. E., & Smith, R.S. (1982). *Vulnerable but invincible: A longitudinal study of resilient children and youth*. New York: McGraw Hill.

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Stoddard, S.A., & Pierce, J. (2015). Promoting positive future expectations during adolescence: The role of assets. *American Journal of Community Psychology, 56*, 332-341.

Am J Community Psychol (2015) 56:332–341
DOI 10.1007/s10464-015-9754-7

ORIGINAL ARTICLE

Promoting Positive Future Expectations During Adolescence: The Role of Assets

Sarah A. Stoddard[1] · Jennifer Pierce[1]

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Abstract Positive future expectations can facilitate optimal development and contribute to healthier outcomes for youth. Researchers suggest that internal resources and community-level factors may influence adolescent future expectations, yet little is known about the processes

Introduction

Adolescence is an important developmental period marked by considering and planning for the future (Nurmi 1991). The way in which adolescents conceive their future can

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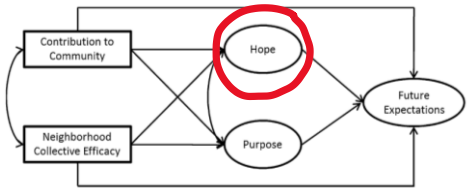

Stoddard & Pierce (2015), p. 333

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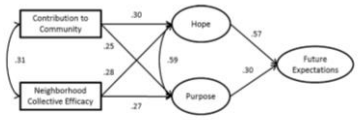

Fig. 2 The effect of contribution to community and neighborhood collective efficacy on hope, purpose, and future expectations. *Note*: Standardized estimates are shown. Only significant paths are displayed ($p < .05$). Race/ethnicity was included as a covariate in estimation, but is not shown. Model fit (χ^2 [65, N = 193] = 76.12, $p = .16$; TLI = .98, CFI = .98, RMSEA = .03)

"The present study found that positive future expectations are higher when collective efficacy in the community is high, youth are engaged in community activities, and youth report a sense of hope and purpose. Furthermore, the effect of community-oriented resources on positive future expectations appears to be mediated by hope." (p. 337)

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Conclusions from Stoddard & Pierce (2015)

Those who feel safe and valued in their community may be more willing to provide services to others in their community and work to enact beneficial change (p. 337 and 338).

The way communities view youth can influence hope and purpose among adolescents. (p. 338)

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Conclusions from Stoddard & Pierce (2015)

Communities that demonstrate a willingness to intervene for the benefit of others may lead adolescents to recognize their importance and the presence of help and assistance when necessary. (p. 338)

Interventions that foster a sense of neighborhood collective efficacy and enable youth to become involved in community work may be beneficial. (p. 339)

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So what can coalitions and/or prevention specialists do?

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Conclusions

- **Disseminate findings that "more" is not "better" with marijuana, especially when it comes to mental health, and look at ways to shed light on the fact that it isn't "just weed"**
- **Environmental strategies will have an impact on a range of behaviors**
- **Examine ways to bring bystander approaches to scale**
- **Explore ways to put science in people's hands**
  - **Parent meetings**
  - **Town hall meetings**
  - **SBIRT**
- **What we do about alcohol use will pay dividends elsewhere**

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Conclusions

- Expectancies can be modified in a positive direction
- Steps we can take to boost students' self-esteem will pay dividends in the classroom
  - Positive expectations are associated with lower anxiety, higher achievement test scores, and better teacher-rated school adjustment (Wyman, et al., 1993)
- Consider opportunities to correct misperceived norms and emphasize Positive Community Norms (e.g., Jeff Linkenbach's work) when there are injunctive and descriptive norms that can be promoted
  - These can impact confidence, efficacy, esteem and hope, as well as impacting substance use

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Healthy Youth Survey (2018)

Statewide Results — Grades 6, 8, 10 and 12

Laws and Norms Favorable to Drug Use (Questions 177-182)

177. How wrong would most adults in your neighborhood[c] neighborhood or community[d] think it was for kids your age: To use marijuana?	Grade 6 % (± CI) (n=5,993)	Grade 8 % (± CI) (n=4,368)	Grade 10 % (± CI) (n=3,954)	Grade 12 % (± CI) (n=2,812)
a. Very wrong	81.2% (±1.3)	65.2% (±2.9)	43.3% (±2.9)	31.7% (±2.8)
b. Wrong	11.1% (±0.9)	24.7% (±1.9)	37.5% (±2.1)	40.3% (±2.0)
c. A little bit wrong	4.7% (±0.6)	7.6% (±1.1)	15.1% (±1.6)	21.9% (±2.2)
d. Not wrong at all	3.0% (±0.4)	2.5% (±0.6)	4.1% (±0.6)	6.1% (±1.0)

178. How wrong would most adults in your neighborhood[c] neighborhood or community[d] think it was for kids your age: To drink alcohol?	(n=5,921)	(n=4,364)	(n=3,963)	(n=2,791)
a. Very wrong	76.8% (±1.1)	59.6% (±2.6)	41.4% (±2.3)	29.3% (±2.3)
b. Wrong	15.0% (±0.8)	28.7% (±2.1)	38.6% (±1.9)	40.6% (±1.7)
c. A little bit wrong	5.5% (±0.6)	9.1% (±1.1)	16.7% (±1.8)	23.8% (±1.8)
d. Not wrong at all	2.7% (±0.4)	2.7% (±0.5)	3.4% (±0.6)	6.3% (±1.0)

179. How wrong would most adults in your neighborhood[c] neighborhood or community[d] think it was for kids your age: To smoke cigarettes?	(n=5,902)	(n=4,356)	(n=3,951)	(n=2,794)
a. Very wrong	80.7% (±1.2)	69.5% (±2.3)	60.9% (±2.5)	50.2% (±2.8)
b. Wrong	11.9% (±0.8)	21.8% (±1.8)	27.8% (±1.6)	32.7% (±1.7)
c. A little bit wrong	4.4% (±0.5)	6.5% (±0.9)	8.6% (±1.2)	11.2% (±1.4)
d. Not wrong at all	3.0% (±0.4)	2.3% (±0.5)	2.9% (±0.7)	5.9% (±1.1)

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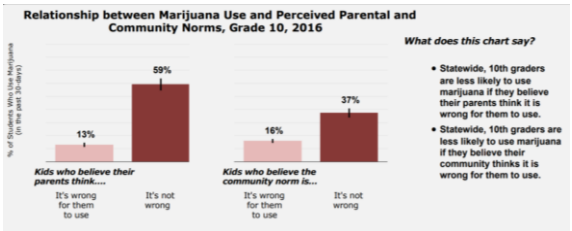

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"The strength of the team is each individual member. The strength of each member is the team."
-- Phil Jackson

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Know that, together, we have an important voice and message that deserves to be heard

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- **Special thanks to:**
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