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Alcohol, Other Drugs, and Health: Current Evidence

MARCH–APRIL 2017

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INTERVENTIONS & ASSESSMENTS

Two Versions of Brief Intervention for Drug Use: No Better Than Usual Care In Facilitating Treatment Receipt

Mounting evidence suggests that screening, brief intervention, and referral-to-treatment (SBIRT) alone is ineffective in reducing drug use in primary care, but it is unknown whether the referral-to-treatment (RT) component might increase receipt of formal addiction treatment. Researchers randomized drug-screen-positive primary care patients to one of 3 conditions: a 10–15 minute brief negotiated interview (BNI, n=174), a 30–45 minute brief motivational interview (BMI, n=177), or no intervention (control, n=177).

- The main drugs used were marijuana (63%), cocaine (19%), and opioids (17%).
- The BNI group did not differ from controls in addiction treatment engagement within 6 months, but the BMI group had lower odds of treatment receipt (odds ratio, 0.36).
- Treatment receipt was lowest for people with marijuana use and those with greater severity of alcohol use.
- Greater overall severity of total substance use was associated with higher odds of treatment receipt (adjusted odds ratio, 1.14 per 5-unit increase in Global ASSIST score).

Comments: This study found no evidence that referral-to-treatment (RT) as part of a brief intervention (BI) led to increased substance use treatment receipt compared with controls. However, it is difficult to disentangle BI from RT, and unclear as to what constitutes RT – was advising "you should go to treatment/Narcotics Anonymous" enough? Giving a telephone number for a program? Making someone an appointment? We also do not know the extent to which these interventions were performed in the control condition. The finding that motivational interviewing led to less treatment receipt than control seems counterintuitive, until one considers that an approach that "meets people where they are" might unintentionally give non-treatment-seeking patients permission to ignore a provider's advice to seek treatment. This finding should be interpreted with caution without knowing the extent to which the motivational interviewers provided advice to seek formal treatment as the best option for those with substance use disorder.

Peter D. Friedmann, MD, MPH

Reference: Kim TW, Bernstein J, Cheng DM, et al. Receipt of addiction treatment as a consequence of a brief intervention for drug use in primary care: a randomized trial. *Addiction*. 2016 [Epub ahead of print]. doi: 10.1111/add.13701.

Patient-Centered Methadone Treatment: More Evidence that Mandated Counseling Is Unnecessary

Early discontinuation of treatment is common in methadone treatment programs (MTPs), and many patients drop out or are administratively discharged because of restrictive program requirements. To determine whether less restrictive rules would improve retention and drug use outcomes, this clinical trial randomized new MTP patients in Baltimore during 2011–2014 to treatment as usual (TAU, n=151) or patient-centered methadone (PCM, n=149), in which counseling was optional, graduated consequences replaced involuntary discharge for rule infractions, and counselors were not responsible for enforcing clinic rules.

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Free CME: ABAM-Approved MOC Activity!

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Patient-Centered Methadone Treatment: More Evidence that Mandated Counseling Is Unnecessary (continued from page 1)

- There were no differences across groups in the proportion of patients at 12 months with opioid-positive urine tests (60%), cocaine-positive urine tests, self-reported heroin or cocaine use, meeting *DSM-IV* opioid or cocaine dependence criteria, treatment retention, HIV risk behaviors, or physical or mental health quality of life. PCM participants did report slightly better WHO Quality of Life scores (mean 3.7) than did those receiving TAU (mean 3.4).
- No differences were detected between groups in therapeutic alliance or patient satisfaction.
- Counseling attendance did not differ between groups. Over 12 months, PCM participants attended a mean of 8.7 individual and 3.8 group counseling sessions, compared with 7.8 and 6.4, respectively, among the TAU group.
- Although TAU counselors discussed rule violations and counseling requirements more often, involuntary discharge was rare in both groups.

Comments: A less restrictive approach to methadone treatment in which counseling was optional and responses to rule infractions were not heavy-handed did not worsen treatment outcomes. In fact, allowing patients to choose whether or not to attend counseling resulted in only a modest reduction in counseling attendance. This null study suggests that mandated counseling is unnecessary in methadone treatment programs.

Peter D. Friedmann, MD, MPH

Reference: Schwartz RP, Kelly SM, Mitchell SG, et al. Patient-centered methadone treatment: a randomized clinical trial. *Addiction*. 2017;112(3):454–464.

Effects Of A National Program To Encourage Alcohol Screening And Brief Intervention

Screening and brief intervention (SBI) for unhealthy alcohol use is recommended in primary care, but implementation has been limited. From 2004 to 2010, Sweden executed a national program of capacity-building and workshops to encourage primary care and occupational health services to perform alcohol SBI. Using data from a public health survey conducted every 4 years since 2000 in Uppsala County among 18-84 year-olds, researchers evaluated to what extent people in contact with a health care provider (GP or hospital) reported having received alcohol SBI.

- Between 2004 and 2012, the prevalence of being asked about alcohol use doubled (from 13% to 32%) for patients visiting a GP or hospital. The prevalence of being advised on alcohol consumption increased from 3% to 4%.
- Receiving screening was associated with male gender, younger age, being overweight (BMI >30), and smoking, but not with AUDIT-C score, indicating that screening was independent of drinking levels.
- Receiving advice was associated with AUDIT-C score: those reporting more use were more likely to receive advice. Receiving advice was also associated with male gender, smoking, and report of psychological distress.
- Being advised increased the likelihood of wanting to cut down on alcohol consumption.
- There were no population-level effects on consumption.

Comments: Despite recommendations, screening was far from universal, so the absence of population-level effects is not surprising. Some groups (women, older individuals) were less likely to be screened, suggesting that clinicians targeted specific population groups. Nevertheless, programs like this may play an important role in decreasing unhealthy alcohol use.

Nicolas Bertholet, MD, MSc

Reference: Lundin A, Danielsson AK, Hallgren M, Torgén M. Effect of screening and advising on alcohol habits in Sweden: a repeated population survey following nationwide implementation of screening and brief intervention. *Alcohol Alcohol*. 2017;52(2):190–196.

HEALTH OUTCOMES

Heavy Episodic Drinking and Frequent Marijuana Use Can Cause Depressive Symptoms In Adolescents

The relationship between substance use and depression is complex, with substance use thought both to cause depressive symptoms ("stress model") and relieve them ("self-medication model"). Researchers used data from the National Longitudinal Study of Adolescent to Adult Health to investigate both pathways across age and sex. The authors found:

- Heavy episodic drinking (defined as consuming ≥5 drinks on an occasion) and marijuana use increase from adolescence to adulthood, and then decrease in early adulthood. Conversely, depressive symptoms decrease in the transition to adulthood and increase in early adulthood
- There is a significant positive association between depressive symptoms in adolescence and increasing frequency of marijuana use from adolescence to adulthood in both genders, supporting the self-medication model.
- Persistent heavy episodic drinking or marijuana use are concurrently positively associated with depressive symptoms, supporting the stress model, especially for females.

Comments: Adolescents may use marijuana to self-medicate depressive symptoms, although persistent use during adolescence is associated with more depressive symptoms, especially in girls. Heavy episodic drinking is associated with more depressive symptoms, and does not appear to be used as a form of self-medication. These results emphasize the importance of concurrent screening for substance use and depressive symptoms, especially among young people with marijuana use. People with heavy episodic drinking and those with heavy marijuana use should be advised of the risk of depression related to use.

Sharon Levy, MD, MPH

Reference: Wilkinson AL, Halpern CT, Herring AH, et al. Testing longitudinal relationships between binge drinking, marijuana use, and depressive symptoms and moderation by sex. *J Adolesc Health*. 2016;59(6), 681–687.

"Your Bones Are Going To Pot": Association Between Heavy Marijuana Use And Poor Bone Health

Preclinical studies have suggested that cannabinoid receptors and their ligands play important roles in regulating bone density, bone turnover, and bone cell activity; yet, the effects of marijuana use on bone health are unknown. In this cross-sectional study, researchers compared measures of bone health among individuals with heavy marijuana use (>5000 lifetime smoking episodes, n=144), "moderate" use (<5000 lifetime smoking episodes, n=56), and cigarette smokers (no marijuana use, n=114). Notably, other illicit substance use was common among individuals with heavy marijuana use. Analyses were adjusted for age, sex, BMI, menopausal status, Serum total 25-hydroxyvitamin D concentrations (25[OH] D), serum cross-linked C-telopeptide of type I collagen (CTX), N-terminal propeptide of type I procollagen concentrations (P1NP), CTX, tobacco smoking, alcohol intake, dietary calcium intake, participation in sports, weight bearing for > 4 hours daily, and other illegal drug use.

- Individuals with heavy marijuana use had lower total hip bone mineral density (mean ± SD Z-score: -0.20 ± 0.9 versus +0.2 ± 0.9), lower spine bone mineral density (-0.5 ± 1.2 versus 0.0 ± 1.2), and lower body mass index (BMI; 26.5 ±6.0 versus 29.0 ±7.0), compared with controls. Fracture rate was also increased in individuals with heavy use (rate ratio, 2.17).
- When compared with controls, measures of bone turnover (CTX and P1NP) were raised in individuals with heavy marijuana use. Compared with controls, 25(OH)D concentrations were reduced in individuals with marijuana use (36.9±26.7 versus 25.3 ±16.8 nmol/L).
- Multiple regression analysis revealed that heavy marijuana use was an independent predictor of spine bone mineral density and total hip bone mineral density. Mediation analysis suggested that the effect of marijuana on spine bone mineral density was indirect and mediated through low BMI and the effect on hip bone mineral density was moderated by the use of other illicit substances.

Comments: Although cause and effect relationships cannot be inferred from the results of this observational study, these data suggest that heavy marijuana use is associated with poorer measures of bone health and that other illicit substance use may contribute.

Jeanette M. Tetrault, MD

Reference: Sophocleous A, Robertson R, Ferreira NB, et al. Heavy cannabis use is associated with low bone mineral density and an increased risk of fractures. *Am J Med*. 2017;130(2):214–221.

The Association of Alcohol Consumption with the Risk of Prostate Cancer

Results of prior studies are mixed on whether there is an association of alcohol consumption with the risk of prostate cancer. Researchers examined data from 11,372 participants in the Older Finnish Twin Cohort. Participants were followed for the development of prostate cancer from 1981 to 2012, during which time 601 incident cases of prostate cancer and 110 deaths from prostate cancer occurred.

- Incidence of prostate cancer was associated with heavy average alcohol intake (>14 drinks in a week; hazard ratio [HR], 1.46), but an increased risk of prostate cancer-specific mortality was observed among abstainers (HR, 1.90).
- The lowest risk of prostate cancer was found in the referent group: people with "light" average consumption (≤3 drinks in a week) who did not have heavy episodic drinking (>4 drinks on one occasion at least once in a month).

Comments: This study suggests that there may be a J-shaped relation between alcohol consumption and prostate cancer risk. People with "light" consumption appeared to have the most favorable results for both incident prostate cancer and prostate cancer-specific mortality. Potential mechanisms for a decrease in risk of prostate cancer with "light" drinking are not known, but could possibly be related to anti-inflammatory or endocrine effects. The risk for participants reporting heavy and heavy episodic drinking was higher for both cancer incidence and mortality. For unexplained reasons, abstainers also tended to have higher risk of prostate cancer and mortality than those with "light" consumption; residual confounding from other lifestyle factors is always a possibility in observational studies and cannot be ruled out. The type of beverage consumed was not known, so it is unclear whether this may have had an effect.

R. Curtis Ellison, MD

Reference: Dickerman BA, Markt SC, Koskenvuo M, et al. Alcohol intake, drinking patterns, and prostate cancer risk and mortality: a 30 -year prospective cohort study of Finnish twins. *Cancer Causes Control.* 2016;27:1049–1058.

Risk For Alcoholic Cirrhosis After First Alcohol-Related Hospital Contact

With half of all deaths from cirrhosis attributable to alcohol, understanding the risk for alcoholic cirrhosis after an initial hospital contact related to alcohol use may bolster prevention efforts. Investigators examined data from patients with alcohol intoxication or alcohol use disorder diagnoses in a nationwide registry of hospital admissions and outpatient (including emergency) visits in Denmark between 1998 and 2002. They then followed the cohort in these retrospective data through 2014 for the development of alcoholic cirrhosis.

- Among 36,044 adults with an initial contact (half of whom had an inpatient admission), the 15-year absolute risk of alcoholic cirrhosis was 6% for men and 5% for women; risks at 5 years were 2.6% and 2.3%, respectively.
- The incidence rate was 11 times higher for men and 18 times higher for women than the rate in the general population.
- The highest risk was for those aged 40–59 years at their initial contact (compared with those older or younger), and for those with a disorder (compared with intoxication).

Comments: This study counted outpatient and emergency care as well as hospitalizations as "hospital contact," which means they are actually visits to a hospital system not limited to acute care overnight stays. Nonetheless, the data provide a window into the risk for alcoholic cirrhosis among those who drink so much that it prompts a healthcare visit. Although there are many reasons to offer effective care to people who obtain healthcare, the idea that 1 in 20 will have cirrhosis in 10–15 years could spur patients and physicians alike to engage in effective medical treatment to prevent it.

Richard Saitz, MD, MPH

Reference: Askgaard G, Leon DA, Kjaer MS, et al. Risk for alcoholic liver cirrhosis after initial hospital contact with alcohol problems: a nationwide prospective cohort study. *Hepatology*. 2017;65(3):929–937.

Long-Term Alcohol Use and Mortality Among Swedish Women

In a follow-up analysis of 49,259 women aged 30-49 at baseline in the Swedish Women's Lifestyle and Health cohort, researchers used self-reported information on alcohol consumption* on 2 occasions, 12 years apart, to estimate the effects of alcohol on overall and cause-specific mortality. There were 2100 deaths during follow -up.

- Compared with participants with "light" average consumption, there was an inverse association between greater amounts of alcohol consumption and mortality from cardiovascular disease, but no significant effect on the risk of death from cancer or overall mortality.
- There was an increased risk of cardiovascular and total mortality for abstainers.
- Women who stopped drinking had higher mortality.

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Long-Term Alcohol Use and Mortality Among Swedish Women (continued from page 4)

* Authors specified 5 categories of alcohol consumption (0.1–1.49 g per day ["light," reference group], 1.5–4.9, 5–9.9, 10–14.9, and ≥15).

Comments: The relatively narrow ranges of alcohol intake meant that the numbers of participants in many groups were quite small, which may explain some of the non-significant differences in risk. Researchers reported average consumption (not actual consumption in a day or heavy drinking days), did not include type of beverage, or whether or not alcohol was usually consumed with meals; such information may have better delineated the true effects of alcohol. Importantly, the reasons that caused participants to change their intake are unknown; if due to the development of a serious disease, it may be the disease that relates to subsequent mortality and not the drinking. However, given the inherent problems in assessing change, the results of this study are consistent with others that have reported increased mortality for people with "moderate" drinking who stop their alcohol consumption.

R. Curtis Ellison, MD

Reference: Licaj I, Sandin S, Skeie G, et al. Alcohol consumption over time and mortality in the Swedish Women's Lifestyle and Health cohort. *BMJ Open*. 2016;6:e012862.

HIV AND HCV

Alcohol Use Has Little, If Any, Effect on Hepatitis C Treatment Response

Hepatitis C virus (HCV) is a major cause of liver disease and alcohol use contributes to adverse health outcomes. Recently developed direct-acting antiviral agents (DAAs) have been shown to be highly effective at eliminating HCV, but many studies exclude individuals with current or recent alcohol or other drug use. Researchers used data from the Veterans Affairs health care system to examine the association between DAA treatment outcomes (sustained virologic response [SVR]), and alcohol use, as assessed using the Alcohol Use Disorders Identification Test Consumption (AUDIT-C) questionnaire.*

- Among 17,847 patients who initiated DAAs, 87% completed AUDIT-C screening within one year prior to initiating treatment; of these, 69% were categorized as abstinent, 23% with "low-level" drinking, and 9% with "unhealthy" drinking.
- There was no difference in SVR between those who were abstinent (92%), had low-level drinking (93%), or unhealthy drinking (91%). If everyone with missing SVR data was considered a treatment failure, the SVR rate for those with unhealthy drinking (79%) was lower than for those who were abstinent (84%), or had low-level drinking (84%).
- On multivariable analysis, there was no difference in SVR between the 3 drinking categories. However, in a model with imputation of missing SVR data, when compared with those who were abstinent, those with unhealthy drinking were less likely to achieve SVR (adjusted odds ratio [aOR], 0.75), while those with low-level drinking were not (aOR, 1.03).

* AUDIT-C scores were categorized as: abstinence (0), low-level drinking (1-3 for men, 1-2 for women), and unhealthy drinking (4-12 in men, 3-12 in women).

Comments: This study adds to a growing body of evidence showing high success rates for treatment of HCV, regardless of alcohol or other drug use. Even if the success rates are somewhat lower among those with alcohol use disorder, this should not deter us from treating patients who need it. Unfortunately, some clinicians and insurers still consider alcohol or other drug use to be contraindication to treatment. Given the high risk of liver disease in this population and the effectiveness of treatment regardless of alcohol or other drug use, we should be targeting this population for treatment of HCV (and substance use disorder), rather than creating barriers.

Darius A. Rastegar, MD

Reference: Tsui JI, Williams EC, Green PK, et al. Alcohol use and hepatitis C virus treatment outcomes among patients receiving direct antiviral agents. *Drug Alcohol Depend*. 2016;169:101–109.

Providing HIV Treatment To Those Who Are Known To Be Infected Is Not Enough To Prevent Its Spread Among People Who Inject Drugs

People who inject drugs (PWID) are at risk for HIV infection and for transmitting the virus to others. One strategy for reducing transmission is to identify individuals who are HIV-infected and provide antiretroviral treatment (ART) to them (i.e., "test and treat"). Other strategies include preventive interventions (e.g., syringe exchange, reducing risky behaviors, and opioid agonist treatment). Researchers used data from Russia and Ukraine to model the spread of HIV among PWID and the effects of various interventions.

- Without any treatment or prevention, the HIV prevalence among PWID was predicted to reach 86% over 20 years.

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Providing HIV Treatment To Those Who Are Known To Be Infected Is Not Enough To Prevent Its Spread Among People Who Inject Drugs

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- Providing ART to 50% of those infected on average 4 years after infection would only decrease this to 83%. Adding treatment for 25% of recently-infected individuals would provide a modest further reduction to 73%.
- The most effective strategy was scaling up preventive interventions and treating at least 25% of recently-infected PWID; this would lead to an estimated prevalence of 2% after 20 years.

Comments: This study shows how, in the absence of preventive efforts, HIV can spread in vulnerable populations and suggests that simply treating individuals with HIV infection will have little effect on the spread of the virus among PWID. The most effective strategy is a combination of primary prevention along with identification and treatment of recently infected individuals. However, social stigmatization of PWID presents a significant barrier.

Darius A. Rastegar, MD

Reference: Vasylyeva TI, Friedman SR, Lourenco J, et al. Reducing HIV infection in people who inject drugs is impossible without targeting recently-infected subjects. *AIDS*. 2016;30:2885–2890.

PrEP In People Who Inject Drugs: Factors Associated with Patient Uptake And Adherence

The Bangkok Tenofovir Study demonstrated that pre-exposure prophylaxis (PrEP) with once-daily tenofovir decreased HIV seroconversion among people who inject drugs by 49%. After study completion, participants could continue once-daily directly observed administration of tenofovir for PrEP in a one-year open-label extension phase to identify participant factors associated with the decision to take daily tenofovir as PrEP, the decision to return for ≥1 PrEP follow-up visit, and >90% adherence to PrEP. Of the 2306 surviving study participants, 1315 were eligible to continue; 798 (61%) chose to start open-label PrEP and were followed up for a median of 335 days, and 339 (42%) completed 12 months of follow-up. The 573 participants who returned for ≥1 visit contributed 474 person-years of follow-up.

- Participants who were ≥30 years of age (odds ratio [OR], 1.8), injected heroin (OR, 1.5), or had been incarcerated (OR, 1.7) during the randomized trial were more likely to choose ongoing PrEP than their counterparts.
- Participants who reported injecting heroin (OR, 3.0) or being in prison during the 3 months before open-label enrollment (OR, 2.3) were more likely to return for ≥1 open-label follow-up visit than their counterparts.
- Only 25% of participants who returned for ≥1 follow-up visit were >90% adherent to the medication. Participants who injected midazolam (OR, 2.2) or who were in prison during follow-up (OR, 4.7) were more likely to be >90% adherent than their counterparts. One participant tested positive for HIV.

Comments: This extension study demonstrates that patients with perceived high risk of HIV seroconversion (i.e., those with ongoing injection use and those who may have a high relapse potential after release from incarceration) are interested in choosing to take PrEP for HIV prevention. What remains to be determined is how to enhance adherence and a deeper understanding of cost-implications for this population.

Jeanette M. Tetrault, MD

Reference: Martin M, Vanichseni S, Suntharasamai P, et al. Factors associated with the uptake of and adherence to HIV pre-exposure prophylaxis in people who have injected drugs: an observational, open-label extension of the Bangkok Tenofovir Study. *Lancet HIV*. 2017;4(2):e59–e66.

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Addiction Science & Clinical Practice
Addictive Behaviors
AIDS
Alcohol
Alcohol & Alcoholism
Alcoholism: Clinical & Experimental Research
American Journal of Drug & Alcohol Abuse
American Journal of Epidemiology
American Journal of Medicine
American Journal of Preventive Medicine
American Journal of Psychiatry
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American Journal on Addictions
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Journal of Behavioral Health Services & Research
Journal of General Internal Medicine
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Journal of Infectious Diseases
Journal of Studies on Alcohol
Journal of Substance Abuse Treatment
Journal of the American Medical Association
Journal of Viral Hepatitis
Lancet
New England Journal of Medicine
Preventive Medicine
Psychiatric Services
Substance Abuse
Substance Use & Misuse

Many others periodically reviewed (see www.aodhealth.org).

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PRESCRIPTION DRUGS & PAIN

Observational Study of Medicinal Cannabis for Chronic Pain Finds Reductions in Pain, Disability, and Prescribed Opioid Use

Some evidence supports the efficacy of cannabis for the treatment of chronic pain, but few studies extend beyond weeks. Israeli patients with "treatment-resistant chronic pain" were prescribed medicinal cannabis and encouraged to taper opioid medications in this open-label, prospective case series, which provided 7-month follow-up outcomes including pain intensity, functional outcomes, satisfaction, and opioid medication use. Pain and quality of life were assessed with the S-TOPS (Treatment Outcomes of Pain Survey–Short Form) and the BPI (Brief Pain Inventory).

- 206 patients were followed in an intention-to-treat (ITT) sample and 176 completed full per-protocol (PP) follow-up data collection.
- Patients' median S-TOPS pain symptom score decreased from 83 to 75 at follow-up, similar to the changes in the results of the BPI for both pain severity (median score decreased from 7.50 to 6.25) and pain interference (median score decreased from 8.14 to 6.71). ITT and PP analyses were similar.
- Of 73 patients with opioid use at baseline, 32 discontinued opioids at follow-up. The median oral morphine equivalent dose among those still receiving opioids decreased from 60 mg to 45 mg, but the change was not significant.

Comments: While these findings support a small potential improvement in chronic pain outcomes and reduction in prescribed opioids with the administration of medicinal cannabis, the observational nature of the study means that placebo effect or regression to the mean are possible alternative explanations. Patients were excluded for prior addiction history or risk of addiction, eliminating from the analysis those most likely to be harmed by cannabis and perhaps most likely to seek out such treatment. Lastly, patients were followed for months, not years, similar to prior studies of opioids for chronic pain conditions that failed to identify key safety problems.

Joseph Merrill, MD, MPH

Reference: Haroutounian S, Ratz Y, Ginosar Y, et al. The effect of medicinal cannabis on pain and quality-of-life outcomes in chronic pain: a prospective open-label study. *Clin J Pain*. 2016;32:1036–1043.

Continuing Medical Education (CME) Accreditation Statements

This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of Boston University School of Medicine and Boston Medical Center. Boston University School of Medicine is accredited by the ACCME to provide continuing medical education for physicians. Boston University School of Medicine designates this enduring material for a maximum of 1.5 *AMA PRA Category 1 Credit(s)*™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Target Audience
The target audience is generalist clinicians, many of whom have received limited training on detecting and treating substance abuse.

Educational Needs Addressed
Primary-care clinicians often miss the diagnosis of alcohol or drug problems and cannot stay abreast of the current substance-abuse literature in the context of a busy practice. Because of the effects of alcohol and drugs on adherence to care plans and physician-patient relationships, patients with alcohol or drug problems may receive suboptimal treatment for other conditions. Further, physicians sometimes perceive alcohol or drug dependence as less treatable than other medical conditions, and thus delegate responsibilities for screening and intervention to others. At the root of the screening and treatment gap is the inadequate provision of substance-abuse education in medical schools and mental-health fields. The newsletter addresses this not only by research dissemination but by providing free downloadable teaching tools for use by educators.

Educational Objectives
At the conclusion of this program, participants will be able to state the latest research findings on alcohol, illicit drugs, and health; incorporate the latest research findings on alcohol, illicit drugs, and health into their clinical practices, when appropriate; and recognize the importance of addressing alcohol and drug problems in primary care settings. In sum, the purpose of the newsletter is to raise the status of alcohol and drug problems in both academic and clinical culture to promote evidence-based screening and treatment and ultimately improve patient care.

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