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Review of Randomized Controlled Trials in Adolescent Cannabis Use Treatment: A Counseling Practitioner's Summary

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Abstract

In the United States, adolescent cannabis use is a major public health problem that if left untreated can potentially have devastating consequences in an adolescent's life. Evidence-based counseling treatments are established through the use of randomized controlled trials whereby adolescents with substance use issues are typically randomly assigned to one of two counseling treatments to identify which is most effective in reducing cannabis use at termination and at follow-up evaluations. Counseling practitioners are ethically bound to maintain their professional competence with adolescents with cannabis use issues by keeping current with the professional research literature on treatment interventions that have established efficacy and effectiveness for this counseling population. However, for the average practitioner, keeping current with the counseling intervention research literature can be a daunting and arduous task as many research studies and systematic reviews are written for the researcher rather than the practitioner and emphasize research design and statistical issues and deemphasize the clinical implications. The purpose of this study is to review and summarize for the practitioner 24 randomized controlled trials involving counseling treatments for adolescent cannabis use and identify which counseling treatments work for which adolescent populations for cannabis use.

In 2014, the National Survey on Drug Use and Health identified that 7.4% of adolescents aged 12 to 17 years in the United States were current cannabis users (used cannabis in the past 30 days; Center for Behavioral Health Statistics and Quality, 2015). As cannabis use is a major public health issue for adolescents in the United States, it is vitally important that adolescents in counseling treatment receive the most current evidence-based treatment available and that counseling practitioners are current with the counseling clinical intervention trials for adolescent cannabis use. The *ACA Code of*

Ethics (American Counseling Association [ACA], 2014) requires counseling practitioners to remain current with treatment efficacy and effectiveness research. The *ACA Code of Ethics* Section C, Professional Responsibility, states "counselors have a responsibility to the public to engage in counseling practices that are based on rigorous research methodologies" (p. 8). Randomized controlled trials (RCTs) are the gold standard in counseling treatment research because their use of random assignment to counseling treatments controls many of the internal validity threats, thus qualifying as a "rigorous research methodology." The *ACA Code of Ethics* Standard C.2.b., New Specialty Areas of Practice, states "while developing skills in new specialty areas, counselors take steps to ensure the competence of their work and protect others from possible harm" (p. 8). One key step in the process of developing a new clinical competency is to remain current on the counseling treatment research literature regarding adolescent cannabis use. The *ACA Code of Ethics* Standard C.2.d., Monitor Effectiveness, states "counselors continually monitor their effectiveness as professionals and take steps to improve when necessary" (p. 8). Thus, maintaining clinical competency as a counseling practitioner requires continuing education and training in the evidence-based counseling treatment research for adolescent cannabis use.

In working with adolescent cannabis users, the counseling practitioner needs to know which counseling treatments work with which adolescent cannabis user subpopulations in order to provide the most current evidence-based treatment. This review of RCTs in adolescent cannabis use treatment identifies two counseling treatments that were found to be most effective across several different RCTs: multidimensional family therapy (MDFT; six RCTs) and cognitive behavioral therapy (CBT; five RCTs), either alone or in combination with an adjunctive therapy. This is important for the counseling practitioner in terms of developing clinical competency with adolescent cannabis users. The review of RCTs in adolescent cannabis use treatment identifies three adolescent cannabis user subpopulations where treatments have been established across multiple RCTs: Caucasian adolescents (eight RCTs); African American adolescents (nine RCTs); and Hispanic adolescents (10 RCTs). Thus, counseling practitioners have a strong treatment efficacy and effectiveness research basis for choosing either MDFT or CBT (either alone or in combination with an adjunctive therapy) for counseling any of the three adolescent cannabis user subpopulations (Caucasian, African American, and Hispanic adolescents).

Treatments

The RCT literature has established several counseling treatments with initial efficacy (superior treatment in at least one RCT) for adolescents with cannabis use: MDFT; CBT, either alone or in combination with adjunctive treatment; brief strategic family therapy (BSFT); Chestnut's Bloomington Outpatient Treatment (CBOP); guided self-change (GSC); risk reduction through family therapy (RRFT); Seeking Safety (SS) + treatment as usual (TAU); structural ecosystems therapy (SET); and integrated borderline personality-orientated adolescent family therapy (I-BAFT). However, the scientific principle of replication requires that RCTs are replicated, or at least the same treatment is found superior in additional RCTs, to establish a convergence of evidence that a treatment is effective. Only two treatments have been found superior in multiple RCTs:

multidimensional family therapy (MDFT) and cognitive behavioral therapy (CBT), either alone or in combination with adjunctive therapy.

The most effective counseling treatment for adolescents with cannabis use is MDFT, whereby there were six RCT studies (Henderson, Dakof, Greenbaum, & Liddle, 2010 [two RCTs]; Liddle et al., 2001; Liddle, Dakof, Turner, Henderson, & Greenbaum, 2008; Liddle, Rowe, Dakof, Henderson, & Greenbaum, 2009; Rigter et al., 2013) where MDFT was found to be the superior treatment and two RCT studies (Dennis et al., 2004; Hendriks, van der Schee, & Blanken, 2011;) where MDFT was equally effective as the comparative treatment in reducing cannabis use.

The second most effective counseling treatment for adolescents with cannabis use is CBT, either alone or in combination with an adjunctive therapy, whereby there were five RCT studies (Hoch et al., 2014; Hoch et al., 2012; Kaminer & Burleson, 1999; Kay-Lambkin, Baker, Lewin, & Carr, 2009; Latimer, Winters, D'Zurilla, & Nichols, 2003) where CBT (alone or in combination) was found to be the superior treatment and four RCT studies (Dennis et al., 2004 [two RCTs]; Hendriks et al., 2011; Liddle et al., 2008) where CBT (either alone or in combination) was equally effective as the comparative treatment in reducing cannabis use with adolescents.

Populations

After establishing which counseling treatments are most effective for adolescent cannabis use, counseling practitioners need to know which adolescent subpopulations have been included in the RCTs. In the 17 RCTs with a superior treatment as an outcome, the vast majority of RCTs (82.4%) were established with male adolescent cannabis users with an average of 77.1% male participants in each RCT. Female adolescent cannabis users were less common in the 17 RCTs with a minority of RCTs (17.6%) having females as the majority with an average of 80.6% female participants in each of those RCTs. Overall, there need to be more RCTs with female cannabis users as the majority population in the future.

In the RCTs with a superior treatment as an outcome and race/ethnicity demographics reported in the study, each race/ethnicity category here includes the number of RCTs included, as well as the average percentage of participants in each RCT. Caucasian adolescent cannabis users were included in eight RCTs with an average participation rate of 53.2%. African American adolescent cannabis users were included in nine RCTs with an average participation rate of 34.9%. Hispanic adolescent cannabis users were included in 10 RCTs with an average participation rate of 38.3%. Both Native American and Asian American adolescent cannabis users were included in just two RCTs, both small studies, with an average participation rate of 5.6% (Native American) and 7.2% (Asian American). There is a significant future need for more RCTs to compare counseling treatments for adolescent cannabis users with both Native Americans and Asian Americans as the majority populations of focus.

Method

The RCT studies were identified by a literature search of the following databases: PsychINFO; PsychARTICLES; Academic Search Premier; and Psychology and

Behavioral Sciences Collection. The key terms entered in the literature search included "randomized controlled trials," "adolescent substance abuse treatment," and "adolescents" (in the databases that did not allow search limiters by age—adolescents). Adolescent substance abuse was further limited by type of substance use—cannabis use. The articles were further limited by language (English language) and full-text availability. The treatments in the adolescent RCTs were limited to at least one treatment being a counseling treatment intervention that was not brief in nature (short-term brief intervention RCTs as well as prevention programs were excluded for this study). The final inclusion criteria for this study was the RCT had to have at least one dependent variable that focused on actual adolescent substance use (behavioral measure) to be included in the review here. The literature review yielded 24 RCTs involving counseling treatments for adolescent cannabis use (1999–present).

Table 1

Review of RCTs in Adolescent Cannabis Use: A Practitioner's Summary—Most Effective Treatments: Multidimensional Family Therapy (MDFT) and Cognitive Behavioral Therapy (CBT). (Dominant Treatments)

Study	Treatments	Population	Level of Problem	Outcome
Henderson et al. (2010)	MDFT vs. I-CBT	n = 224 Age Mean =15.4 yrs Gender = 81% male Race = 72% AF-AM	Cannabis Use	MDFT most effective in reducing cannabis use (both treatments equally effective in reducing frequency of cannabis use)
	MDFT-DTC vs. ESAU	n = 154 Age Mean = 15.4 yrs; Gender = 83% male; Race = 60% AF-AM; 22% HS-AM	Drug Use	MDFT most effective in reducing drug use
Hendriks et al. (2011)	MDFT vs. CBT	n = 109 Age Range = 13–18 yrs Gender = 79.8% male Race = 71.6% White	Cannabis Use	MDFT and CBT are equally effective (3-, 6-, 9-, 12-month follow-ups)
Liddle et al. (2001)	MDFT vs. AGT vs. MEI	n = 182 Age Mean = 15.9 yrs Gender = 80% male Race = 51% White; 18% AF-AM; 6% HS-AM; 10% Other	Drug Use	MDFT most effective (termination-posttest; 6- & 12-month follow-ups)
Liddle et al. (2008)	CBT vs. MDFT	n= 224 Age Mean = 15.0 yrs Gender = 81% male Race = 72% AF-AM	Cannabis Use	CBT and MDFT were both significantly effective for reduction of cannabis use; MDFT was more effective at sustaining treatment effects over time (12-month follow-up)
Liddle et al. (2009)	MDFT vs. AGT	n = 83 Age Mean = 13.7 yrs Gender = 74% male; Race = 42% HS-AM; 38% AF-AM; 3% White	Drug Use	MDFT most effective (termination-posttest; 6- & 12-month follow-ups)

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Study	Treatments	Population	Level of Problem	Outcome
Rigter et al. (2013)	MDFT vs. IP	n = 450 Age Mean = 13.7 yrs Gender = 85% male	Cannabis Use	MDFT most effective in reducing symptoms of cannabis dependence & frequency of cannabis use
Azrin et al. (2001)	ICPS vs. FBT	n = 56 Age Mean = 15.4 yrs Gender = 82% male Race = 78% White; 16% HS-AM; 2% AF-AM; 4% Other	Drug Use	Both ICPS & FBT effective (termination, 6-month follow-up)
Dennis et al. (2004)	Trial 1: MET/CBT5 vs. MET/CBT12 vs. FSN Trial 2: MET/CBT5 vs. ACRA vs. MDFT	n = 600 Age Range = 12–18 yrs Gender = 79% female Race = 61% White; 30% AF-AM	Cannabis Use	All therapies were effective with reduced cannabis use (3-month & 6-month follow-ups)
Godley et al. (2010)	CBOP + ACC vs. CBOP w/o ACC vs. MET/CBT7 + ACC vs. MET/CBT7 w/o ACC	n = 320 Age Mean = 15.9 yrs Gender = 76% male Race = 73% White; 13% AF-AM; 14% Other	Drug Use	CBOP most effective (termination; 3-,6-,- 9-, 12-month follow-ups)
Hoch et al. (2014)	AT (CBT, MET + PST) vs. DCT	n = 279 Gender = 86.7% male	Cannabis Use	AT most effective (termination; 3-, 6-month follow-ups)
Hoch et al. (2012)	AT (MET/CBT) vs. DTC	n = 122 Age Mean = 24.1 yrs (16–44 years) Gender = 96% male	Cannabis Use	AT more effective in reducing cannabis use per week & increasing cannabis abstinence days
Kaminer et al. (1999)	CBT vs. IT	n = 32 Age Range = 13–18 yrs Gender = 63% male	Cannabis Use	CBT most effective in reducing cannabis use (3-month follow-up); CBT & IT equally effective at 15-month follow-up
Kay-Lambkin et al. (2009)	BI vs. MI/CBT (Person) vs. MI/CBT (Computer)	n = 97 Gender = 54% female	Cannabis Use	MI/CBT (Computer) most effective with reducing cannabis use (3-, 6-, 12-month follow-ups)
Latimer et al. (2003)	IFCBT vs. DHPE	n = 43 Age Mean = 16.1 yrs Gender = 76.7% male Race = 86.0% White; 7.0% NA-AM; 4.6% HS-AM; 2.3% AS-AM	Cannabis Use	IFCBT was more effective in reducing cannabis use drug days

Table 2

Review of RCTs in Adolescent Cannabis Use: A Practitioner's Summary—Other Effective Treatments. (Non-Dominant Treatments)

Study	Treatments	Population	Level of Problem	Outcome
Danielson et al. (2012)	RRFT vs. TAU	n = 30 Age Mean = 14.8 yrs Gender = 88% female Race = 37.5% White; 46.0% AF-AM; 4.2% NA-AM; 8.3% Biracial; 4.0% HS-AM	Drug Use	RRFT most effective (post-treatment; 3-month & 6-month follow-ups)
Najavits et al. (2006)	SS + TAU vs. TAU	n = 33 Age Mean = 16.1 yrs Gender=100% female Race = 78.8% White; 12.1% AS-AM; 3.0% AF-AM; 3.0% HS-AM; 3.0 Multi-ethnic	Cannabis Use	SS + TAU more effective at termination & 3-month follow-up
Robbins et al. (2011)	BSFT vs. TAU	n = 480 Gender = 78.5% male Race = 44% HS-AM; 31% White; 23% AF-AM; 2% Other	Drug Use (other than alcohol/ tobacco)	No difference between treatments (12-month follow-up)
Robbins et al. (2008)	SET vs. FAM vs. CS	n = 190 Age Mean = 15.6 yrs Gender = 78% male Race = 59.5% HS-AM; 40.5% AF-AM	Drug Use	SET more effective in reducing drug use in Hispanic adolescents (3-, 6-, 12-, 18-month follow-ups); SET more effective in retaining African American adolescents and their families (though did not reduce their drug use)
Santisteban et al. (2015)	i-BAFT vs. IDC	n = 40 Age Mean = 15.8 yrs Gender = 63% male Race = 85% HS-AM	Drug Use	i-BAFT reduced drug use only with the group diagnosed with depression
Santisteban et al. (2003)	BSFT vs. GTC	n = 126 Age Mean = 15.6 yrs Gender = 75% male Race = 100% HS-AM	Cannabis Use	BSFT more effective in reducing cannabis use
Slesnick et al. (2013)	CRA vs. MI vs. EBFT	n = 179 Age Mean = 15.4 yrs Gender = 52.5% female Race = 65.9% AF-AM; 25.7% White; 1.7% HS-AM; 1.0% NA-AM	Drug Use	All treatments were equally effective in reducing drug use (no difference)
Wagner et al. (2014)	GSC vs. SC	n = 514 Age Mean = 16.2 yrs Gender = 59% male Race = 57% HS-AM; 23% AF-AM; 6% White; 14% Other	Drug Use	GSC more effective (termination; 3- & 6-month follow-ups)

Review of the Literature

Most Effective Treatments—MDFT and CBT (Dominant Treatments; see Table 1)

In a pair of randomized clinical trials, Henderson et al. (2010) randomly assigned 224 adolescents with substance use (primarily cannabis dependence) in study one to four to six months (once/week sessions) of one of two treatment conditions: MDFT or individually-focused cognitive behavioral therapy (I-CBT). Participants included 224 adolescents that were cannabis users (75% met criteria for cannabis dependence and 13% for cannabis abuse). Adolescent participants were male (81%), diverse (African American,72%; non-Hispanic White, 18%; Hispanic, 10%), and primarily from single-parent families (58%). Drug use was measured by the Timeline Followback Method (TLFB) for frequency of drug use (patient self-report for previous 30 days) and Personal Involvement with Chemicals (PIC) scale of the Personal Experiences Inventory (PEI) for severity of substance use (patient self-report). Both MDFT and I-CBT treatments were equally effective in reducing cannabis use frequency though MDFT was found to be more effective in reducing severity (duration and impact) of cannabis use.

In study two, Henderson et al. (2010) randomly assigned 154 adolescents in juvenile detention with substance use to four to six months of one of two treatment conditions: MDFT Detention-to-Community (MDFT-DTC) or extended services as usual (ESAU). Participants included 154 adolescents that were using illegal substances (61% had cannabis use disorder; 20% had alcohol use disorder; and 10% other substance use disorder). Participant demographics were primarily male (83%) and ethnically diverse (African American, 60%; Hispanic, 22%; non-Hispanic White, 17%; and other, 1%). Drug use was measured by TLFB for frequency of drug use (patient self-report for previous 90 days) and PIC scale of the PEI for severity of substance use (patient self-report). MDFT-DTC was found to be more effective than ESAU in reducing drug use.

Hendriks et al. (2011) conducted a randomized controlled trial with 109 adolescents to evaluate the effectiveness of using MDFT (n = 55, experimental group) in treatment-seeking adolescents with a DSM-IV diagnosis of cannabis use disorder compared to CBT (n = 54, comparison group) treatment. Both treatments had a planned treatment duration of 5–6 months with planed follow-ups (3-, 6-, 9-, and 12-month follow-ups) for 6–7 months. Participant inclusion criteria were: being 13–18 years old, a history of cannabis abuse/dependence in the previous year according to the DSM-IV, recent use of cannabis on a regular basis ($\geq$ 26 days in the 90 days preceding baseline), a willingness to participate in the study and the study treatments, and had at least one (step) parent or legal guardian who agreed to participate in the treatment and study assessment. Outcome measures were cannabis use, delinquent behavior, treatment response and recovery at 12-month follow-up, and treatment retention and intensity. Treatment responders were defined as participants who had at least 30% less cannabis using days in the 90 days preceding the 12-month assessment. Adolescents in both treatments showed significant and clinically meaningful reductions in cannabis use and delinquency from baseline to 12-month follow-up.

In a randomized clinical trial, Liddle et al. (2001) randomly assigned 182 adolescents with substance use (alcohol and drug use) to 14–16 weeks of one of three treatment conditions: MDFT, adolescent group therapy (AGT), or multi-family education intervention (MEI). Participants included 182 adolescents who were using any illegal

substances. Adolescent participants were an average age of 15.9 years (range 13–18 years), primarily male (80%); though racially diverse (51% non-Hispanic White; 18% African American; 6% Hispanic; and 10% other). Inclusion criteria required that participants had no previous substance abuse treatment history (including Narcotics Anonymous). Drug use was measured through a structured drug use interview of the adolescent's previous 30 days and triangulated with separate interviews of the adolescent's self-report, parents' self-report, and urinalysis. Although all treatment conditions reduced drug use, MDFT was found to be more effective than AGT or MEI in reduction of adolescents' drug use at termination and maintained the treatment advantage at both 6-month and 12-month follow-ups.

Liddle et al. (2008) conducted a randomized trial with 224 adolescents to examine the efficacy of CBT (n = 112) and MDFT (n = 112) in reducing drug use. Participant inclusion criteria were: 12–17.5 years old, living with at least one parent or guardian who agreed to participate in family therapy, had no history of organic dysfunction, did not need inpatient detoxification, and was not actively suicidal. Participants were typically male (81%), 15 years old (average age), and African American (72%), who were referred from the juvenile justice system, child welfare service agencies, schools, and other agencies. Data were collected at baseline, termination, and 6-month and 12-month follow-ups (post-termination) to measure substance use problem severity, 30-day frequency of cannabis use, 30-day frequency of other drug use, and 30-day abstinence. Findings indicated that CBT and MDFT were both effective in reducing cannabis use during treatment and at 6-month follow-up. When subgroups were examined, MDFT was superior to CBT in decreasing drug abuse problem severity. MDFT participants were more successful in maintaining changes over time (12-month follow-up) in substance use problem severity, other drug use, and abstinence.

Liddle et al. (2009) randomly assigned 83 substance abusing adolescents to 12 to 16 weeks (two 90-minute sessions/week) of one of two treatment conditions: MDFT or adolescent group therapy (AGT). Participants were primarily male and ethnically diverse (Hispanic, 42%; African American, 38%; Haitian or Jamaican, 11%; White, 3%; or other, 4%) with nearly half (47%) of participants in the juvenile justice system. Drug use was measured by TLFB, which assessed through adolescent self-report the frequency of drug use in the 30 days prior to each assessment. MDFT was found most effective in reducing drug use at posttest (termination) and maintained treatment effectiveness at both 6- and 12-month follow-ups.

In a randomized clinical trial, Rigter et al. (2013) randomized 450 adolescents with cannabis use disorder to 6 months of one of two treatment conditions: (a) MDFT or (b) individual psychotherapy (IP). Adolescent participants were primarily male, diagnosed with cannabis use disorder, and originated from one of several Western European countries (Belgium, 60 cases; France, 101 cases; Germany, 120 cases; Netherlands, 109 cases; and Switzerland, 60 cases). Cannabis use was measured by the Adolescent Diagnostic Interview-Light (ADI-Light for Cannabis Use Disorder Diagnosis and Symptoms) and TLFB (frequency of cannabis use by self-report in the previous 30 days to each assessment). MDFT was found to be superior in reducing symptoms of cannabis dependence disorder and in reducing the frequency of cannabis use.

Azrin et al. (2001) randomly assigned 56 adolescents with either a conduct disorder plus substance abuse or dependence, or substance dependence plus oppositional

defiant disorder to one of two treatment conditions: individual cognitive problem-solving therapy (ICPS) or family behavioral therapy (FBT). Treatment consisted of 15 sessions over 6 months. Participants were an average age of 15.4 years, primarily male (82%), and primarily White (78%). Inclusion criteria required that participants were between the ages of 12 and 17; exhibited symptoms consistent with DSM-IV diagnosis of the disorders mentioned above; lived within 30 minutes of the clinic; no diagnosis of mental retardation or psychotic disorder; not currently receiving psychological interventions; and lived with a parent who could provide transportation. Numerous assessments were included in the study, but urine drug screens and TLFB were used to determine the impact on drug use. Results indicated that both ICPS and FBT interventions were equally effective in reducing the frequency of substance use at termination of treatment and at the 6-month follow-up.

Two randomized trials using five short-term (90 days or less) treatments were conducted at four sites by Dennis et al. (2004) to evaluate the effectiveness of outpatient interventions for 600 adolescents with cannabis use disorders. Trial 1 treatments included: motivational enhancement treatment/cognitive behavior therapy-5 sessions (MET/CBT5); motivational enhancement treatment/cognitive behavior therapy-12 sessions (MET/CBT12); or Family Support Network (FSN). Trial 2 treatments included: MET/CBT5, Adolescent Community Reinforcement Approach (ARCA); or MDFT. Participant inclusion criteria were: were 12–18 years old, self-reported one or more DSM-IV criteria for cannabis abuse or dependence, had used cannabis in the past 90 days or 90 days prior to being sent to a controlled environment, and were appropriate for outpatient or intensive outpatient treatment. Clinical outcomes measured were days of abstinence between the randomization date and the 12-month follow-up interview and whether the adolescent was in recovery at the end of the study. Data were collected from multiple sources including participant interviews, collateral interviews, urine tests, service logs, and other process measures. All five interventions demonstrated significant pre-post treatment effects at 3 months that were stable for 12-month follow-ups.

Godley et al. (2010) conducted a randomized clinical trial to determine the effectiveness of two treatment conditions: Chestnut's Bloomington Outpatient Treatment (CBOP) or motivational enhancement therapy/cognitive-behavioral therapy-7 session model [MET/CBT7]) with and without ACC for 320 adolescents with substance use disorders. The majority of participants were male (76%) and White (73%) with the average age of 15.9 years. Inclusion criteria included being between the ages of 12 and 18 years, meeting the American Society of Addiction Medicine's Patient Placement Criteria for Level I outpatient treatment based on substance abuse or dependence diagnosis and six dimensional admission criteria, and attending an admission appointment. Participants were assigned to one of four treatment conditions: CBOP with ACC, CBOP without ACC, MET/CBT7 with ACC, or MET/CBT7 without ACC. Urine drug screens were used to determine drug use. While all four conditions resulted in increased abstinence and reduced substance use problems; participants in the CBOP treatment groups demonstrated a greater average number of days abstinent over 12 months.

Hoch et al. (2014) conducted a multi-site randomized controlled trial of 279 participants with ICD-10 cannabis use disorders in 11 outpatient addiction treatment centers. Participants ranged in age from 16–63 years, with a mean age of 26.6 years and a

majority being male (86.7%). Participants were randomly assigned to an active treatment (AT) or delayed treatment control (DTC) group. Treatment consisted of 10 sessions that used a strictly manualized intervention that combined CBT, MET, and problem-solving training (PST). Inclusion criteria required that participants be 16 years of age or older; report current, regular use of cannabis; motivation to quit or reduce cannabis consumption; and fluency in the German language. Several assessments were used in the study, however TLFB and urine drug screenings were used to determine the impact on drug use. TLFB was conducted at baseline, during each therapy session, at post-treatment, and at 3- and 6-month follow-ups. Urine screens were conducted at post-treatment and 3- and 6-month follow-ups. Participants in the AT group showed a decrease in cannabis use.

In a randomized clinical trial, Hoch et al. (2012) randomly assigned 122 adolescents and adults with cannabis use to 10 weekly sessions of one of two treatment conditions: active treatment (AT)—a combination of 1–3 sessions MET with CBT; or delayed treatment control—will receive treatment after efficacy study. Participants included 122 adolescents and adults with cannabis use disorder. Participants were primarily male (96%) and although there was an average age of 24.1 years (range 16–44 years), the study did include older adolescents. Drug use was measured by patient self-report (drug days of abstinence), urinalysis, and TLFB (TLFB-Cannabis Use—patient self-report). AT was more effective in reducing cannabis use and resulted in differentially higher rates of drug abstinence at posttest (49% vs. 13%) and maintained drug abstinence at 3-month (51%) and 6-month follow-ups (45%).

Kaminer and Burleson (1999) conducted a pilot study to examine the effectiveness of matching patient type and treatment type. In a randomized clinical trial, 32 adolescents with dual diagnoses of substance use (drug use) and sociopathy (externalizing—attention deficit hyperactivity disorder or conduct disorder, and internalizing—anxiety disorder or mood disorder) were assigned to one of two short-term outpatient group psychotherapies: CBT (substance abuse and externalizing sociopathy; n = 17) or interactional treatment (IT; substance abuse and internalizing sociopathy; n = 15). Inclusion criteria were that participants: had to be able to consent, be aged 13–18 years, and met DSM-III-R criteria for psychoactive substance use disorders. Fifteen of the 32 adolescents completed the treatment program (8 out of 17 CBT; 7 out of 15 IT). Completion was defined as having completed baseline and end of treatment assessments and being present for the last therapy session. While only 15 adolescents met completion criteria, 22 participants completed the 3-month follow-up and 14 completed the 15-month follow-up. As measured by the Teen-Addiction Severity Index (T-ASI) domains of substance abuse, family function, and psychiatric status, all participants showed substantial treatment gains at the 15-month follow-up compared with the pretreatment baseline. There were significant gender effects in that girls showed higher psychiatric severity than boys at intake and 3- and 15-month follow-ups (males = 10 completers out of 20; females = 5 completers out of 12). While at 3-month follow-up, adolescents assigned to CBT showed significant reduction in severity of substance abuse compared with those assigned to IT, there were no differential improvements as a result of therapy type at the 15-month follow-up. Both CBT and IT treatments were associated with similar long-term treatment gains.

Kay-Lambkin et al. (2009) conducted a randomized controlled trial of 97 participants with comorbid major depression and cannabis use to evaluate computer-versus therapist-delivered psychological treatment. Fifty-four percent (54%) of participants were female Participants received a brief intervention (BI) followed by random assignment to one of two conditions: no further treatment (BI alone) or nine sessions of motivational interviewing and CBT (intensive MI/CBT). Participants in the second group were then randomly selected to participate in either treatment delivered in person or via a computer-based program. Inclusion criteria required that participants have a score of 17 or higher on the Beck Depression Inventory II (BDI-II); lifetime diagnosis of major depressive disorder; current problematic drug use (or at least weekly use of cannabis); absence of a brain injury, organic brain disease, or significant cognitive impairment; over 16 years of age; and ability to understand English. The Opiate Treatment Index (OTI) and Structured Clinical Interview for DSM Disorders (SCID-RV) were used to determine the effectiveness of treatments. Results indicated that MI/CBT was better in reducing cannabis use and hazardous substance use with computer-based therapy being strongest.

In a randomized clinical trial, Latimer et al. (2003) randomly assigned 43 adolescents with cannabis use to one of two treatment conditions: integrated family and cognitive behavioral therapy (IFCBT—16 hourly sessions of family therapy + 32 90-minute sessions of cognitive behavioral group therapy) or Drugs Harm Psychoeducation Curriculum (DHPE—16 90-minute weekly sessions). Participants were primarily male (76.7%) and mostly White (86%; Native American, 7.6%; Hispanic, 4.6%; Asian American, 2.3%). Cannabis use was measured by the Adolescent Diagnostic Interview-Revised (ADI-R; measures youth substance abuse in past 24 hours, past week, past month, past 6 months, and lifetime), PEI (youth self-report of substance abuse), and urinalysis. IFBFT was found to be more effective in reducing cannabis use drug days.

Other Effective Treatments (Non-Dominant Treatments; see Table 2)

A pilot randomized control study conducted by Danielson et al. (2012) examined the effectiveness of using Risk Reduction through Family Therapy (RRFT) for reducing substance use risk and trauma-related mental health problems among sexually assaulted adolescents versus treatment as usual (TAU). Participant inclusion criteria included: aged 13–17, at least one CSA that could be recollected, not mentally retarded, and a caregiver agreed to participate in the study. Thirty adolescents (mean age = 14.8; 88% female; 37.5% White; 46% African American; 4.2% Native American; 8.3% Biracial; 4% Hispanic) and their caregivers (72.6% biological parents, 17.1% other family members, 10.3% non-familial guardians) completed measures of substance use, substance use risk factors (family functioning), mental health problems (post-traumatic stress disorder [PTSD], depression, and general internalizing/externalizing symptoms), and risky sexual behavior. Completers were defined as having completed 5 out of 7 RRFT components (mean treatment length = 23 sessions; mean number of weeks in treatment = 34). Data were collected as a baseline, at post-treatment, at 3-month follow-up, and at 6-month follow-up that measured stress, depression, substance abuse behavior, and risky sexual behavior. There were significant differences in functioning measured by the baseline data so differences in group functioning measured at other points of the study might reflect these differences rather than actual changes. Adolescents in the RRFT group showed

significant reductions in substance use, specific substance use risk factors, and parent-reported PTSD, depression, and general internalizing symptoms over the TAU group.

Najavits, Gallop, and Weiss (2006) conducted a randomized controlled trial to evaluate the effectiveness of Seeking Safety (SS), a manualized psychotherapy, combined with TAU for PTSD and substance use disorder (SUD) compared to only TAU. Thirty-three (33) (SS+TAU = 18; TAU = 15; Mean Age = 16.1 years; White ,78.8%; Asian/Pacific Islander, 12.1%; African American, 3%; Hispanic, 3%; Multiethnic, 3%) female outpatients participated in the study. Inclusion criteria included: being female, met DSM-IV criteria for PTSD (sexual abuse, 87.9%, general disaster/accident, 81.8%, physical abuse, 72.7%, and crime, 39.3%), met DSM-IV criteria for SUD, and active in substance use during the 60 days before treatment (cannabis, 78.8%, hallucinogens, 21.2%, amphetamines, 15.2%, cocaine, 9.1%, opioids, 9.1%, inhalants, 9.1%, barbiturates, 6.1%, polysubstance, 6.1%, and PCE, 3.0%), volunteered for treatment, did not have bipolar or psychotic disorders, and did not have characteristics that would interfere with treatment completion (mental retardation, homelessness, impending incarceration, or a life-threatening illness). SS+TAU treatment focused on developing coping skills in cognitive, behavioral, and interpersonal domains (25 50-minute sessions over 3 months). Participants in the SS+TAU group also participated in concurrent treatments such as psychotropic medications and other individual and group psychotherapies in which the TAU group were participating. Data were collected using self-report measures at intake (SS+TAU = 18; TAU = 15), end of treatment (SS+TAU = 14; TAU = 12), and 3-month follow-up (SS+TAU = 11; TAU = 9). Data collected indicate that SS+TAU is more effective than TAU for substance use and associated problems, some trauma-related symptoms, cognitions related to SUD and PTSD, and various psychopathology.

Robbins et al. (2011) conducted a randomized clinical trial to determine the effectiveness two treatment conditions: brief strategic family therapy (BSFT) and TAU on engagement and retention, adolescent drug use, and family functioning. Participants included 480 adolescents and their family members (78.5% male; 44% Hispanic; 31% White; 23% African American; and 2% other). Inclusion criteria required that participants were new referrals to the agency, self-reported illicit drug use (other than alcohol/tobacco) within the past 30 days, or were referred from an institution for treatment of drug abuse. The TLFB interview and urine drug screens were used to determine effectiveness. Results indicated no differences between BSFT and TAU in self-reported drug use.

Robbins et al. (2008) conducted a randomized clinical trial to determine if ecological interventions improve the impact of family therapy compared to family process-only treatment. Participants included 190 adolescents (Hispanic, 59.5%; African American, 40.5%) and their families who were randomly assigned to structural ecosystems therapy (SET, n = 57), family process only therapy (FAM, n = 67), or community services control (CS, n = 66). Participant inclusion criteria included: 12–17 years old, DSM-IV diagnosis of substance abuse or dependence, African American or Hispanic descent, and living with an adult parental caregiver. At baseline, Hispanic adolescents reported significantly more comorbid externalizing disorders than African American adolescents, while no significant ethic differences were identified in internalizing disorders. After baseline data were collected, follow-up assessments were

conducted at 3-, 6- (end of treatment), 12-, and 18-month follow-ups. Assessment data indicated that SET was more effective in reducing drug use in Hispanics than FAM or CS. While SET did not reduce African American drug use more effectively than FAM or CS, SET did increase retention of African Americans and their families for participation in therapy and it helped improve family functioning.

Santisteban et al. (2015) conducted a randomized trial with 40 adolescents to investigate the efficacy of two manualized behavioral treatments that addressed borderline personality disorder behaviors and substance use in adolescents. Participant inclusion criteria included: 14–17 years old, referred for treatment by the juvenile diversion program or other agency, met the DSM-IV criteria for substance abuse disorder, met the DSM-IV criteria for borderline personality disorder, and at least one caregiver in each family agreed to participate in the study. Participants were assigned to integrative borderline personality disorder-oriented adolescent family therapy (I-BAFT, n = 20) or individual drug counseling (IDC, n = 20). Data were collected using English and Spanish versions of assessments that measured borderline personality disorder diagnosis and behaviors, depression, substance use, the therapeutic relationship between the client and the therapist, and the effectiveness of outpatient sessions, at baseline, 4-, 8-, and 12-month follow-ups. Neither i-BAFT or IDC reduced substance abuse significantly in the overall participants; however, in a subgroup that was diagnosed with borderline personality disorder + substance abuse + depression, those in the i-BAFT group showed substantial improvement on indicators of substance use.

In a randomized clinical trial, Santisteban et al. (2003) randomly assigned 126 adolescents with cannabis use to weekly sessions of one of two treatment conditions: BSFT (average of 11 hourly sessions, range of 4–20 sessions) or group treatment control (GTC; average of nine 90-minute sessions, range of 6–16 sessions). Participants were primarily male (75%) and all were from Hispanic families (majority Cuban, 50.8%; Nicaraguan, 14.3%; Columbian, 9.5%). Cannabis use was measured by the Addiction Severity Index (ASI—patient self-report in previous 30 days of use) and verified with urinalysis. BSFT was found to be more effective at reducing cannabis use days.

Slesnick, Erdem, Bartle-Hering, and Brigham (2013) randomly assigned 179 adolescents runaways with substance use (alcohol and drug use) to one of three treatment conditions: community reinforcement approach (CRA, 16 sessions); MI (4 sessions); or ecologically-based family therapy (EBFT, 16 sessions). Participants reflected a slight majority of females (52.5%) and a majority of African American adolescents (65.9%; White, 25.7%; Hispanic, 1.7%; Native American, 1.0%). Drug use was measured by Form 90 Substance Abuse Interview (an instrument to measure adolescent self-reported drug use in the previous 90 days) and urinalysis. All three treatments (CRA, MI, and EBFT) were equally effective (no clinical difference) in reducing drug use.

Wagner, Hospital, Graziano, Morris, and Gil (2014) conducted a school-based randomized, controlled trial with 514 high school students, with a mean age of 16.2 years. The sample consisted of 59% males and participants were predominately minority students (57% Hispanic, 23% African American, 6% non-Hispanic White, 14% other). Participants were placed in one of two treatment conditions: guided self change (GSC) or standard care (SC), which consisted of education/brief assessment/referral only by the school counselor. Inclusion criteria required that participants be between the ages of 14 and 18, report at least seven occasions of drug use in the past 90 days, and at least one act

of relational or predatory violence in the past 90 days. Exclusionary criteria included repeated dangerous behavior, current suicidal risk, significant health problems related to drinking, pregnancy, cognitive impairments or developmental delays. TLFB was used to determine effectiveness of the treatment. Results indicated that participants in the GSC treatment group showed significant reductions in drug use days at treatment termination, 3-month follow-up, and 6-month follow-up.

Limitations and Future Directions

There are several suggestions for future directions offered here to address the limitations in current RCTs in adolescent cannabis use treatment. First, there needs to be universal use of manualized counseling treatments with regular treatment fidelity checks. Second, counseling treatments should be compared to other counseling treatments (new promising counseling treatment vs. current most effective counseling treatment for cannabis use) rather than an educational drug curriculum or TAU (treatment as usual, which may include multiple treatments). Third, when comparing counseling treatments, they should be of similar length and number of sessions (for example, 12 weeks of weekly 1-hour sessions). Fourth, there should be universal use of urine screens as a check on substance use (cannabis use) self-report measures. Fifth, there needs to be more randomized controlled trials in adolescent cannabis use with overlooked minority adolescent populations (e.g., Native American and Asian American adolescents). Sixth, inclusion criteria is needed to focus on adolescents with no concurrent or previous counseling treatment history to avoid treatment carryover effects.

Summary

In an effort to help counseling practitioners to provide evidence-based counseling treatments to adolescents with cannabis use issues, we have identified the most effective counseling treatments (multidimensional family therapy [MDFT] and cognitive behavioral therapy [CBT]), as well as the adolescent subpopulations with established effectiveness research (White male, African American male, and Hispanic American male adolescents). All counseling treatment research studies included here were randomized controlled trials (RCTs). The counseling treatment research evidence for adolescent cannabis use was presented here in summary form specifically for the practitioner: (a) the findings were presented at the beginning for the practitioner to understand which counseling treatments work for which adolescent subpopulations for adolescent cannabis use; (b) tables were presented to practitioners to visually consume in the most summarized form the RCTs that support the most effective counseling treatments (Table 1—MDFT and CBT) and other non-dominant counseling treatments (Table 2); (c) brief narratives of each RCT from both tables were offered for practitioners that desired a little more detail about each RCT. We hope that counseling practitioners will use the practitioner summary to develop and maintain their clinical competency when counseling adolescents with cannabis use issues.

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