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Eliciting abstinence and improving retention in a vocational and educational training program for young people : a pilot study

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ELICITING ABSTINENCE AND IMPROVING RETENTION IN A VOCATIONAL AND EDUCATIONAL TRAINING PROGRAM FOR YOUNG PEOPLE: A PILOT STUDY

BY

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DISSERTATION

Submitted in Partial Fulfillment of the
Requirements for the Degree of

Doctorate of Philosophy
Psychology
The University of New Mexico
Albuquerque, New Mexico

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DEDICATION

This work is dedicated to the positive potential and hopeful futures of all Job Corps' trainees. And, to my mentors, Barbara McCrady and Bill Miller, who made the beginning of this long and beautiful journey possible.

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ABSTRACT

There is support in the literature for motivational enhancement therapy (MET) as an acceptable method for achieving abstinence and increasing retention in therapy for the treatment of marijuana and alcohol abuse, and for contingency management (CM) as a useful tool for enhancing both of these objectives when combined with empirically supported therapies such as MET. However, MET combined with CM had yet to be tested with substance using adolescents and young adults enrolled in a substance use program in a vocational and educational training facility.

This study examined the effectiveness of an MET and CM program designed to provide opportunities to win prizes to reinforce therapy attendance and submission of urine samples that were negative for marijuana. Fourteen (N=14) individuals from a vocational training center who tested positive for marijuana on their initial drug screen were assigned to receive either standard treatment (ST), or CM plus MET in addition to ST. The retention rates of twenty-two (N=22) non-randomized participants who had

tested positive for marijuana upon entry to the training center were also compared to the retention rates of the study participants.

The MET+CM+ST group demonstrated significantly higher study drug screen pass rates at 1- and 3-month follow-ups, and significantly greater percent days abstinent (PDA) for marijuana at the 3-month follow-up compared to the ST group. In addition, the percentage of trainees who successfully passed their second official drug screen and were therefore retained and able to continue their training at the Job Corps was significantly higher for those who consented into the study than the non-randomized participant group; however, there were no statistical differences found between the study groups in retention, largely due to administrative leniency extended to the ST group by the training program.

Originally, incoming trainees who were on probation for alcohol use were to be included in the study as well, however none of the incoming trainees were on probation due to alcohol use during the duration of this study. Also, there was very little alcohol use reported by the participants who were enrolled in the study, and there were no significant findings regarding alcohol use.

The study results build upon prior research and offer an initial exploratory analysis of the efficacy of MET and CM with trainees from a vocational program who tested positive for marijuana, and highlights recommendations for developing interventions to facilitate abstinence in a real life, non-clinical setting.

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Eliciting Abstinence and Improving Retention in a Vocational and Educational Training Program for Young People: A Pilot Study

The Job Corps is a federally funded, no-cost education and vocational training program assisting low-income young people (ages 16-24) in restructuring their lives and getting a better job. Nationally, there are a total of 122 centers and approximately 62,000 individuals are enrolled each year. The average Job Corps trainee is an 18-year old minority, high school dropout, who reads at the 7th grade level who has never held a full-time job. Approximately 70% of all Job Corps enrollees are minorities; 75% are high school dropouts, and more than 30% receive public assistance (http://www.allgov.com/agency/Job_ Corps, retrieved on January 24, 2010).

In addition to educational and vocational training, students receive medical and dental care, driver's education, social skills training, housing, meals, clothing allowance, child care, and recreational and leadership opportunities. Students enroll to learn a trade and to work concurrently toward their GED or high school diploma. In this program, bi-monthly small incentives ($25) in the form of allowances are awarded, and the amount increases gradually for each month of successful participation in the program. Upon graduation from the program, the Job Corps provides career counseling and transition support for up to 12 months.

Individuals are eligible for recruitment into the Job Corps if they meet one or more of the following criteria: 1) dropped out of school, 2) require additional assistance to successfully participate in regular schoolwork or employment, 3) are basic skills deficient, 4) are a homeless, runaway, or foster child, or 5) are a parent (Policy and Requirements Handbook, Job Corps (PRH) (2001), 1.2, pp. 1-2). Also, they cannot have

any current outstanding serious criminal or court involvement (e.g., probation or warrants for arrest).

As of January 8, 2008, there were 429 students enrolled in the Albuquerque Job Corps Center. This center offers career training opportunities in the following fields: business office technologies, carpentry, cement masonry, data entry, electrician, facilities maintenance, nurse's aide, medical assistant, painter, plasterer, plumbing and welding. Career training includes hands-on experience and work-based learning opportunities. In addition, students may take advanced courses at the local community college.

The typical time to graduation for this center is 8-12 months; if necessary individuals may take up to 2 years to complete their training. At the Albuquerque Job Corps Center, students completing the probationary period of 60 days stay an average of 282 days in the program, and of those nearly 50% graduate. Nationally, 82% graduate and spend an average of 234 days in the program. A graduate is a person who has completed 60 or more days of enrollment and if needed, has earned their GED or high school diploma, and/or completed their vocational training (PRH, Chapter 5, Appendix 501, page 3). At the Albuquerque Center, approximately 25% of incoming trainees do not complete the probationary period, mainly due to substance use issues. Nationally, approximately 18% of all new Job Corps students depart the program within the first 60 days of enrollment due to a variety of reasons (e.g. failure to adapt, homesickness, medical, violations of substance use policy) (http://www.jobcorps.gov/Libraries/pdf/py06report.sflb, retrieved on January 24, 2010).

The Job Corps is an individualized, self-paced learning environment, and admission and graduation occur on a rolling basis. Once admitted into the program,

individuals can only be tested for substance use within the first 48-hours of being at the center ("initial drug screen"), and if they test negative, thereafter only upon suspicion. Should they test positive on their initial drug screen, they are then placed on probation and re-tested in approximately 5-6 weeks. At the Albuquerque Job Corps Center trainees are tested within the first 24 hours of being on campus and results of the screen are returned in one week. Of the 12 individuals admitted on average into the program weekly, typically 3-5 of those individuals fail their initial drug screen or indicate on their initial pre-screen that they have abused substances in the past 60 days.

The Job Corps has a Zero Tolerance drug and alcohol policy. According to program protocol, individuals failing their initial drug screen are re-tested near the end of their 45-day probationary period, or sooner upon suspicion of use. The Albuquerque Job Corps re-tests on day 38. Should they submit a second positive urinalysis then or at any time, they must exit the program. Trainees testing positive on entry or later during the probationary period, or who are self-referred and recommended by the Trainee Employee Assistance Program (TEAP) specialist, are permitted the option of a medical separation with reinstatement (MSWR), which allows them to return to Job Corps in six months if they provide proof of successful completion of treatment for substance use and provide a negative drug screen (Policy and Requirement Handbook; PRH, Chapter 6, 11-2, pp. 5-6).

As previously stated, the Albuquerque Center graduates approximately 50% of those completing the probationary period, and of those completing probation and failing to graduate, more than half are due to drug and alcohol use. And, approximately 50% of those initially failing their drug screen, test positive on their re-test and are forced to exit

the program. The preferred drugs of abuse for these individuals are marijuana and alcohol. Nationally, the Albuquerque Center leads the Job Corps centers in alcohol and drug related incidents.

The Albuquerque Center recruits the majority of their trainees from New Mexico. According to a survey by the National Families in Action (2001), New Mexico is 3rd on the list of states with the highest percentage of the population reporting past year illicit drug or alcohol use disorders (6.5%). Additionally, New Mexico is ranked 5th in the nation for the highest rate of violent crimes, and many of those crimes involved substance use (U.S. Drug Enforcement Agency; DEA, 2007). In 2006, 38% of all motor vehicle traffic fatalities in New Mexico were alcohol-related (National Highway Traffic Safety Administration; NHTSA, 2007). During the period of 2004-2006, New Mexico ranked 3rd for the highest poverty rate only behind the states of Alabama and Louisiana (U.S. Census Bureau, 2006). New Mexico also is ranked 4th in the country for the highest rate of completed suicides, with a rate of 18.4 per 100,000 persons (American Association of Suicidology, 2006a). Alcohol use disorders also are correlated with suicide, and the risk of suicide in alcoholics is estimated to be 50-70% higher than the general population (American Association of Suicidology, 2006b).

Based on a 2002-2003 National Survey on Drug Use and Health (SAMHSA, 2005), an estimated 47,000 individuals ages 18-25 in New Mexico were reported to have an illicit drug dependence or abuse problem in a 1-month period, and approximately 25,000 individuals between the ages of 12-17 years. In addition, heavy alcohol consumption is a factor in 69% of all completed suicides in New Mexico among the American Indian population (May et al., 2002). Also, American Indians are more likely

to report addictions, and approximately one-half of the trainees at the Job Corps are of this ethnic group.

Therefore, many of the potential recruits have had direct or indirect experiences with drug use and abuse. In addition, the majority of the young people enrolled in the Albuquerque Center have either dropped out or been expelled from the public school system, mainly due to excessive absences, criminal activity, and/or drug use. All of the trainees come from impoverished backgrounds and many were considered homeless upon enrollment. For most, this is their first opportunity for a structured, positive lifestyle in which they can earn their high school diploma, GED, and receive career training. Unfortunately, many promising recruits are expelled from the program due to an inability to remain alcohol and drug free during the probationary period. Improving upon the existing drug treatment program at Job Corps could help many of those recruits stay in the program and perhaps change the course of their lives.

Literature Review

The purpose of this review is to examine empirical support for MET and CM as found in published, controlled studies that focused on either marijuana or alcohol, as these were the two primary drugs of choice with Job Corps trainees at the Albuquerque Center. To date, there is little published research on treating substance use disorders with the Job Corps population and there are no empirically supported treatments for this population.

Background

Motivational enhancement therapy (MET).

In MET, clinicians embrace an empathetic, Rogerian, person-centered therapeutic style in which they avoid resistance and argumentation, resolve ambivalence, heighten discrepancies about personal goals and current behaviors, and elicit motivation to change (Miller & Rollnick, 2002). MET has been applied to a range of medical and behavioral disorders including therapy for drug use disorders, diabetes and hypertension management, bulimia nervosa, and risky sexual behavior (Heather, 2005).

MET is believed to be an effective approach for changing addictive behavior based on the idea that addiction is a disorder of motivation. And, the behavior of immediate drug use is preferred over other priorities or long-term interests. MET attempts to address the motivational conflict behind one's stated desires and contradictory behaviors through exploration and self-realization of the problem. MET embraces the concept that the therapist cannot directly cause change, but rather, the client has that power. The therapist simply guides the client from the pre-contemplative stage

to contemplation, determination, action and then towards maintenance (Prochaska & DiClemente, 1982).

The use of self-reflection in MET allows for a wide range of issues to arise naturally during therapy. This type of therapy provides people who are not actively seeking treatment for a particular problem with the psychological space to realize that some sort of assistance may be required to resolve an issue that is troubling them. Giving direct advice is avoided by an MET therapist and behavioral change is dictated by the client, which subsequently, may result in a reduction in drug use rather than complete abstinence, a more desirable goal for some problem users who are not ready to completely quit their addiction but are interested in harm reduction. Further, MET is a proven effective treatment for reducing substance use, yet requires fewer sessions than many standard therapies, therefore, potentially offering a reduction in operating costs and an increase in the number of people who can be treated.

A criticism of MET is that recovery from addiction requires additional attention beyond a realization of problem behaviors, values, and desire to change. Treatment of physical illness and/or comorbid psychiatric disorders as well as teaching social and coping skills and increasing problem solving capacity all may be required to achieve and sustain recovery. Therefore MET can be included initially to engage clients into treatment and then combined with other therapies that develop coping skills and manage common risk situations that may lead to further drug use (Dunn, Deroo, & Rivara, 2001).

Hettema, Steele, and Miller (2005) found in a meta-analysis of 72 clinical trials spanning a range of target behaviors that MET was an effective brief intervention technique for drug using behaviors, though there was great variation in results across

trials. Significant improvement in treatment outcomes with the addition of MET to a standard treatment was hypothesized to be due to the increase in treatment retention and adherence, especially when those were the specific targets of MET. In a population with similar ages to the Job Corps trainees, Aubrey (1998) reported a doubling of outpatient substance abuse treatment sessions attended by adolescents given a single session of MET at intake, as well as a doubling of 3-month abstinence rates. In addition, MET was found to be especially effective with ethnic minority populations (Hettema et al., 2005), which suggests it may be effective with Job Corps trainees.

MET can be particularly effective in engaging difficult-to-treat adolescents in therapy (Masterman & Kelly, 2003). MET allows adolescents to reflect upon their drug use and possible negative consequences without direct confrontation by an adult therapist, which then results in reduced resistance (Marlatt & Witkiewitz, 2002). The brief nature of MET and limited required resources make it well suited for institutional settings (Bien, Miller, & Boroughs, 1993; Brown & Miller, 1993) such as correctional facilities, and MET also works well with individuals high in anger or hostility (Karno & Longabaugh, 2004). In one study (Breslin, Li, Sdao-Jarvie, Tupker, & Ittig-Deland, 2002), four sessions of MET were found to help reduce drug use and drug-related negative consequences while improving enthusiasm for additional treatment among adolescents in an addiction treatment program. And, Stein et al. (2006) found that MET significantly mitigated negative treatment engagement for incarcerated adolescents in substance abuse group therapy.

The ease in which MET can be embraced, both by the provider and client, and support from clinical studies suggest that MET has the potential to aid in the reduction of

drug use for incoming trainees at Job Corps by increasing their motivation to more fully engage in their substance abuse program. A more detailed review of the MET literature related to marijuana and alcohol treatment, focusing on adolescents when possible, is discussed in later sections.

Contingency management (CM).

CM uses the concepts of operant conditioning and behavioral economics to encourage positive behavioral change. Desired behaviors are reinforced systematically in a timely manner while undesired behaviors result in the withholding of reinforcement or administration of punishment. The magnitude of reinforcement required to elicit change in behavior depends on the elasticity of the behavior. In substance abuse treatment, positive behaviors such as abstinence, medication compliance, and therapy attendance can be reinforced using CM. The theory behind CM and how it can be implemented in substance abuse treatment are discussed in more detail below.

Incentives are used throughout our culture to improve behavior in many aspects of our lives—for example, employers give wages and bonuses based on performance, teachers give high marks for well done assignments, parents give allowances for chores, and governments may give tax breaks for the use of alternative energy sources. As mentioned above, the Job Corps also offers many positive reinforcements for achieving continued success in the program (e.g., housing, food, small monetary stipends). Operant conditioning uses consequences to modify behavior by systematically reinforcing desired behaviors and withholding reinforcement or administering punishment for undesired behaviors. Drug abuse is a form of operant behavior in that drug use is reinforced by the

biochemical effects on the body and by environmental influences such as social reinforcement by peers (Higgins & Petry, 1999).

Animal research on self-administration of drugs has demonstrated that the laws of learning and conditioning can be used to modify drug intake through reinforcement and punishment (Higgins & Petry, 1999). Logan (1972) was instrumental in providing evidence that animals respond to operant contingencies with psychoactive substances. When made available, animals readily ingest and abuse most of the same substances as humans (e.g., alcohol, cocaine, opioids) and exhibit the same patterns of drug dependence (e.g., forego sustenance in order to engage in drug use, perform laborious tasks to attain a supply of drugs) (Petry & Heyman, 1995). These early observations of drug abuse and reinforcement led to new theories on substance abuse and treatment methods (Schuster & Thompson, 1969).

Behavioral economics is the study of how behavior is influenced by economic limitations and examines conditions that influence consumption of commodities, including drugs of dependence (Bickel & Marsch, 2001). There are two fundamental concepts related to drug dependence: *elasticity of demand* and *discounting*. Elasticity of demand refers to the proportionate change of consumption in relation to the change in price. If an individual decreases their drug use less than the proportionate increase in price, then their behavior would be an *inelastic* consumption. Many drug addictions are considered to be relatively inelastic. For example, spending money to satisfy a drug addiction can supersede allocating funds for even basic needs such as food and housing. With respect to substance abuse treatment, the demand curve for the drug also can be used to determine the appropriate level of intervention required to reduce substance use.

From an implementation perspective, a balance must be struck between minimizing operational costs and creating effective incentives to encourage drug abstinence (Petry et al., 2004).

Discounting refers to how delayed reinforcers are devalued compared to immediate reinforcers. Discounting may account for the impulsivity or "loss of control" of drug use where the immediate effects of the drugs are more important than the greater, though delayed, pro-social rewards. For example, an individual may express a strong interest in establishing a good family life or work history, but then choose to use drugs and forego both of those desires for the immediate effects of the drugs (Bickel & Marsch, 2001).

The use of CM for treating drug use was first found to be effective in animal studies, and subsequently found to be very effective with human subjects for treating addictions and meeting other treatment goals (e.g. attendance, medication compliance, and maintaining employment) (Higgins & Petry, 1999). One method of reinforcing behavior is through the awarding of vouchers, cash-equivalent certificates used to purchase mutually agreed upon items in support of a drug-free lifestyle. Adding CM to empirically supported treatments for substance use dependence (e.g., community reinforcement approach [CRA], cognitive behavioral therapy [CBT], and MET) has improved both retention and abstinence rates during and after treatment in controlled clinical trials for the treatment of alcohol, cocaine, marijuana, nicotine, and opioid dependence (Higgins, Alessi, & Dantona, 2002). The first implementation of voucher-based reinforcement therapy in a controlled trial was used as a strategy to retain outpatients in a cocaine treatment program and to promote initial abstinence (Higgins et

al., 1991). CM studies also have used monetary awards that are contingent upon abstinence or achieving predefined treatment goals (Sigmon, Steingard, Badger, Anthony, & Higgins, 2000). However, cash-based CM is not a commonly used method because it is criticized for "paying drug abusers to be abstinent" and for potentially providing them with money to purchase additional drugs as well as for other reasons, such as the cost, time to train staff to administer, etc.

An alternative model of voucher-based CM is that of the fishbowl method, first designed and used by Petry, Martin, Cooney, & Kranzler (2000), which addresses the concern of giving cash to substance abusers. Typically, draws from a prize bowl are awarded for clean urine screens, and for each draw, there is the potential of immediately winning a $1, $20 or $100 prize. Most cards say "Good luck, try again!" and the probability of pulling a winning card is proportionate to its value (e.g., there is only one $100 jumbo price card out of 500 cards). After each card is drawn, it is then reinserted into the bowl to keep the probability of winning the same for each draw. Participants are encouraged to request prizes that are rewarding to them in order to increase their involvement and interest in the reward system.

Concerns regarding the efficacy of CM are based on several important issues including: the need for targeting a particular drug, the lasting effects of CM once it has been discontinued, and the need for proper implementation (Higgins & Petry, 1999). One possible consideration is to view CM not as a substance abuse treatment in itself, but rather as a tool that buys time to sample abstinence. And subsequently, this time allows for an empirically supported treatment (EST) to have time to work, and it is through the EST that the lasting effects of sobriety are enhanced. In addition, CM gives an incentive

to the individual to sample abstinence with the hope that the lifestyle benefits of sobriety may become intrinsically reinforcing.

An additional concern regarding CM and the fishbowl method is that while it has the advantage of reducing the cost of CM, it has been criticized for inciting or exacerbating gambling addictions. This concern was investigated and not found to be supported (Petry, Alessi, Marx, Austin, & Tardiff, 2005); nevertheless, as a precautionary measure, a common exclusion criterion is a current or past diagnosis of gambling addiction.

A general criticism of all CM methods is the cost, which potentially can reach nearly $1,000 per person (Higgins et al., 1994; Higgins, Badger, & Budney, 2000) though on average participants earn considerably less than the potential maximum (e.g., in Higgins et al.,1994, the average amount awarded was $601). In addition, significant time is involved for staff to negotiate and purchase the items. Finally, there is a delay between choosing to abstain from drug use and reporting this abstinence for reward; therefore the participant is not immediately reinforced for their behavioral change.

In spite of the costs, CM can enhance therapies such as CBT or MET. In addition, CM is effective with a variety of populations (dually diagnosed individuals, homeless, veterans, juveniles, etc.) and for a variety of addictions (cocaine, heroin, marijuana, alcohol, etc.). Finally, CM is effective in increasing retention in research studies and therapy sessions (Higgins et al., 1994; Petry et al., 2005). In the current study, it was surmised that individuals testing positive for drugs upon entering the Job Corps would have some motivation to abstain from drug use in order to stay in the program, however, any additional assistance in shaping their behavior and supporting this

change would be beneficial. It was hypothesized that CM would provide additional time that would allow for both the exploration of ambivalence regarding substance use and greater awareness of the dissonance between values and drug using behaviors, thereby increasing motivation to actively engage in the substance use program provided by Job Corps.

Marijuana Studies

Marijuana is the most commonly used illicit drug in the United States with 14.6 million users in the past month (Substance Abuse and Mental Health Services Administration; SAMHSA, 2005). Of those, 3.4 million use marijuana on a daily or almost daily basis. In 2005, the rate of past-month marijuana use among youths ages 12 to 17 was 6.9%, while use among young adults ages 18 to 25 was 16.6%. Such significant marijuana use constitutes an alarming statistic given the associated negative consequences of drug use. Although controversial, studies have identified marijuana as a gateway drug leading to the use of other illicit substances (Chen & Kandel, 1995; Kandel, Yamaguchi, & Chen, 1992). Frequent marijuana use among adolescents is associated with diminished educational and occupational opportunities, greater incidence of health/psychiatric issues, and higher rates of criminal incarceration (Ellickson, Martino & Collins, 2004; Windle & Wiesner, 2004).

Treatment programs for marijuana dependence have expanded dramatically in the past two decades. However, the prevalence of young adults voluntarily seeking treatment for chronic marijuana dependence is very low; treatment is more often a consequence of involvement of school administration, family members, or the legal system (Deas & Thomas, 2001; Szapocznik et al., 1988). Furthermore, marijuana users typically are less

motivated to change their using behavior than those abusing other drugs and are more likely to drop out of treatment programs (Budney, Radonovich, Higgins, & Wong, 1998; Sinha, Easton, Renee-Aubin, & Carrol, 2003).

The efficacy of MET and CM was examined in the treatment of many habitual marijuana users (see Table 1). Participants have varied in their demographics from those seeking treatment for marijuana dependence, to adolescents following mandatory drug treatment through the criminal justice system, to others with existing psychiatric conditions not interested in changing their drug use. Most studies used a randomized, controlled experimental design focused solely on marijuana use; while others implemented within-subject controls, polydrug treatment, or allowed for existing psychiatric issues. A brief description of the findings of the marijuana studies is presented below, and a more critical review of the similarities and differences between conclusions of both the marijuana and alcohol studies is discussed later in the text.

MET studies.

The literature is mixed regarding outcomes of studies that used MET as the sole treatment of marijuana use. Several studies have demonstrated the efficacy of short-duration MET for improving marijuana abstinence and secondary effects of marijuana abuse compared to delayed control or no treatment groups (Copeland, Swift, Roffman, & Stephens, 2001; Marijuana Treatment Project Research Group, 2004; Martin & Copeland, 2008; McCambridge & Strang, 2004; Stephens, Roffman, & Curtin, 2000). However, other studies found no significant difference in marijuana outcome regardless of treatment conditions (Dennis et al., 2004; Peterson, Baer, Wells, Ginzler, & Garrett, 2006; Walker, Roffman, Stephens, Berghuis, & Kim, 2006). In addition, the effect of

treatment duration (i.e., number of MET sessions) was not found to be significant in several marijuana studies (Copeland et al., 2001; Dennis et al., 2004; Stephens et al., 2000), although more sessions yielded better outcomes in at least one study (Marijuana Treatment Project Research Group, 2004).

CM studies.

Marijuana studies utilizing CM with an escalating scale of reinforcement resulted in longer periods of continuous abstinence (Budney, Moore, Rocha, & Higgins, 2006; Carroll et al., 2006; Kadden, Litt, Kabela-Cormier, & Petry, 2007; Sigmon & Higgins, 2006). And, long-term abstinence rates were improved when CBT was added to the CM program (Budney et al., 2006; Carroll et al., 2006; Henggeler et al., 2006; Kadden et al., 2007). CM also improved session attendance in marijuana studies when specifically targeted for reinforcement (Carroll et al., 2006; Sinha et al., 2003). In addition, the rate of posttreatment abstinence depended strongly on the initiation of abstinence early in the treatment, which was enhanced by adding CM to the treatment program (Carroll et al., 2006; Sigmon, Steingard, Badger, Anthony, & Higgins, 2000). However, changes in secondary measures of drug use were not strongly influenced by adding CM (Budney et al., 2006).

Combined MET and CM studies.

A few marijuana treatment studies have investigated the efficacy of both MET and CM (Budney et al., 2000; Kadden et al., 2007; Lott & Jencius, 2009; Sinha et al., 2003; Stagner, Budney, Kamon, & Thostensen, 2009). Studies that included both MET and CM produced better outcomes, such as longer periods of continuous abstinence, compared to MET alone (Budney, Higgins, Radonovich, & Novy, 2000; Kadden et al.

2007; Stanger et al., 2009). However, changes in secondary measures of drug use were not strongly influenced by adding MET to the treatment program (Budney et al., 2000; Sinha, Easton, Renee-Aubin, & Carroll, 2003; Stanger et al., 2009).

Table 1

Marijuana Studies

Study	N; Gender	Duration (weeks)	Design	Possible Earnings	Positive Outcome, $p \leq .05$
CM Marijuana Studies					
Budney et al., 2000	60; M=50, F=10	14	MET v. MET + CBT v. MET + CBT + CM	$570	Y
Budney et al., 2006	90; M= 69, F=21	14	CBT v. CM v. CBT + CM	$570	Y
Sinha et al., 2003	65 M=60, F=5	4	MET v. MET + CM	$120	Y
Carroll et al., 2006	136 M=121, F=15	8	MET + CBT v. MET + CBT + CM v. DC (individual drug counseling) v. DC + CM	$880.	Y
Henggeler et al., 2006	161 M=134, F=27	16	Family Court (FC) v. Drug Court (DC) v. DC + Multisystemic Therapy (MST) v. DC + MST + CM	------	Y
Kadden et al., 2007	240; M=170, F=70	9	MET + CBT v. CM v MET + CBT + CM v. Case Management (CaseM)	$385	Y
Lott & Jencius, 2009	336; M=231, F=105	12	MET + CBT v. MET + CBT + CM	$130	N
Sigmon et al., 2000	18; M=18	25	Non-contingent CM—abstinence contingent CM (CV1,CV2,CV3)—Non-contingent CM	$500 for Non-contingent CM $250 (CV1), $500 (CV2), $1,000 (CV3)	Y

Table 1

Marijuana Studies (continued)

Study	N; Gender	Duration (weeks)	Design	Possible Earnings	Positive Outcome, $p \leq .05$
Sigmon & Higgins, 2006	7; M=6, F=1	20	Non-contingent CM—abstinence contingent CM—Non-contingent CM	$930	Y
Stanger et al., 2009	69; M=57; F=12	14	MET + CBT v. MET + CBT + CM + family management	$590	Y
Non-CM Marijuana Studies					
Copeland et al., 2001	229; M=159, F=70		1 session MET + CBT v. 6-sessions MET + CBT v. DCT	N/A	Y
Dennis et al., 2004	600; M=498, F=102		5 session MET+CBT v. Control	N/A	N
Marijuana Treatment Project, 2004	450; M=308, F=142		2-session MET v. 9-session MET+CBT+Case Management v. DCT	N/A	Y
McCambridge & Strang, 2004	200; M=92, F=108		1 session MET v. Control	N/A	Y
Martin & Copeland, 2008	40; M=27, F=13		2 sessions MET vs DTC	N/A	Y
Peterson et al., 2006	285; M=156, F-129		1 session MET v. Control	N/A	N
Stephens et al., 2000	291; M=224, F=67		2-session MET v. 14-session CBT v 4-month DCT	N/A	Y
Walker et al., 2006	97; M=46, F=51		2-session MET v. DTC	N/A	N

Table 1

Marijuana Studies (continued)

Note. N = sample size, all groups combined. Gender: M = male, F = female. MET = motivational enhancement therapy; CBT = cognitive behavioral therapy; CM = contingency management; DCT = delayed control treatment group. Total possible earnings during CM = maximum monetary value that could be earned by the voucher condition. If more than one type of contingency (abstinence and activities) was used, total possible earnings for all contingencies are noted. If more than one contingent voucher (CV) schedule was used, total possible earnings of all the schedules equals the amount shown unless otherwise noted. Assume immediate delivery of vouchers. A dash (------) represents insufficient information.

Positive outcome = a significant change ($p \leq .05$) was reported for the behavior targeted by the contingency management: Y = yes, N = no.

Alcohol Studies

Alcohol is the most commonly used drug in the United States. In 2005 more than one half of Americans aged 12 or older (51.8%, n=126 million) reported using alcohol in the past month (SAMHSA, 2005). Of those, approximately 55 million (22.7%) reported binge drinking at least once in the past month. Binge drinking was defined as five or more drinks in the same occasion for men, and four or more for women. The rate of past-month alcohol use among youths increases with age: 12-13 (4.2%); 14-15 (15.1%); 16-17 (30.1%); 18-20 (51.1%); and 21-25 (67.4%). Rates of binge drinking peak at 49.9% of 21 year olds. Among older segments of the population the percentages of past-month alcohol use decreases with age: 26-59 (63.7%); 60-64 (47.5%); 64 and older (40%).

Regular alcohol use is linked with brain damage (e.g., loss of coordination, poor judgment, slowed reflexes, distorted vision, memory lapses, and blackouts), damage to vital bodily organs, and cancers. Even infrequent use can affect self-control as alcohol depresses the central nervous system, lowers inhibitions, and impairs judgment—which can lead to risky behaviors such as use of other drugs, unprotected sex, violent altercations, and driving while intoxicated. In large doses in a short period of time, alcohol poisoning or motor accidents may result in immediate death.

Given these data, it is clear that alcohol dependence and abuse are most prevalent among our younger population and are associated with many deleterious effects. Treatment programs for alcohol dependence have expanded dramatically in the past 35 years. However, just as for those seeking treatment for marijuana, the prevalence of young adults voluntarily seeking treatment for alcohol dependence is very low, and among those who do, it is usually a result of external pressure. Furthermore, in some

populations (e.g., trainees at the Job Corps) alcohol is thought to be used as a substitution drug when attempting to decrease or abstain from use of other drugs, including marijuana, and therefore needs to be monitored while providing treatment for the use of other illicit drugs.

MET and CM studies were reviewed to examine the efficacy of these treatments for alcohol use disorders (see Table 2). Due to the vast literature related to MET and alcohol treatment, this review focuses only on those related to adolescents, as they were the target population for the study. In contrast, the relative paucity of CM studies focusing on alcohol necessitated including polydrug CM studies that focused mainly on adult subjects. Brief descriptions of these findings are offered below, while a more critical review of the similarities and differences between conclusions of both the marijuana and alcohol studies is presented later in the text.

MET studies.

MET has its origins in the treatment of alcohol abuse utilizing motivational interviewing (MI) techniques (Miller, 1983). Several meta-analyses have concluded that MET is an effective method for treating alcohol problems in adults (Dunn et al., 2001; Heather, 2005; Hettema et al., 2005; Noonan & Moyers, 1997). More specifically, MET for alcohol treatment was found to be most effective for those who consumed large amounts of alcohol and who were more ambivalent about changing their alcohol consumption (Burke, Arkowitz, & Menchola, 2003; Project MATCH, 1997). However, adolescents have a relatively short history of alcohol use compared to adults, fewer alcohol-related negative consequences, and difficulty imaging that future goals and drinking are incompatible, which may suggest that MET is not the ideal therapy for this

demographic in the treatment of alcohol use (Tevyaw & Monti, 2004). Some studies have found no significant reductions in alcohol-related problems post-MET for the adolescent demographic (Baer et al., 1992; Larimer et al., 2001; Murphy et al., 2001). Baer et al. (1992) attributed the significantly lower drinking rates across all study groups to the social desirability of providing positive results to the researcher, possibly leading to reporting bias. Murphy et al. (2001) attributed the lack of a significant treatment effect to study design, but also to the lack of additional verification of self-reported drinking. And finally, Larimer et al. (2001) reported that the brief intervention did not significantly impact alcohol-related consequences and attributed that shortcoming to the measurement tools and the contextual factors involved with drinking within a fraternity environment.

However, other studies reported that MET was an effective treatment method for treating adolescents in reducing alcohol consumption (Borsari & Carey, 2000; Larimer et al., 2001; Marlatt et al., 1998; Monti et al., 1999) and secondary measures of the impact of alcohol abuse (Marlatt et al., 1998; Monti et al., 1999). In college-age adolescents, brief interventions using MET significantly reduced the number of drinks consumed, the frequency of drinking in general, and binge drinking in particular (Borsari & Carey, 2000). In first year fraternity members receiving MET treatment for alcohol abuse, total average alcohol consumption was reduced and lower peak blood alcohol levels were reported but there were no significant improvements in secondary measures of alcohol's impact on their lives (Larimer et al., 2001). In another study following students transitioning from high school to college, MET was shown to be effective at reducing the rate of drinking and the harmful consequences of alcohol use (Marlatt et al., 1998). And finally, for adolescents involved in alcohol-related events resulting in emergency room

treatment, a brief MET intervention resulted in lower incidences of driving under the influence and alcohol-related problems (Monti et al., 1999).

CM studies.

While case studies and controlled trials conducted in the 1970's offered initial support for CM strategies as being effective for treating alcohol dependent patients (Bigelow, Griffiths, & Liebson, 1975; Griffiths, Bigelow, & Liebson, 1978; Liebson, Tommasello, & Bigelow, 1978; Miller, 1975; Miller, Hersen, Eisler, & Watt, 1974), there is very little in the literature investigating this strategy with alcohol dependence from 1990-2007. After a thorough review of the literature, Petry et al. (2000) conducted the only study found that was designed to specifically target alcohol dependent individuals using CM. Eight additional polydrug studies meeting the criteria for this review (see Table 2) indicated that at least 50% of their participants also reported alcohol abuse or dependence. These polydrug studies were examined to identify potential secondary effects of the treatment for alcohol dependent individuals.

CM with an escalating schedule of reinforcement resulted in longer periods of continuous alcohol abstinence (Petry et al., 2000). When specifically targeted by reinforcement, CM improved session attendance in alcohol treatment settings (Helmus, 2003; Petry et al., 2000). However, secondary measures of alcohol use did not significantly differentiate between treatment methods (Carroll, Sinha, Nich, Babuscio, & Rounsaville, 2002; Higgens et al. 1994, 2000; Petry et al., 2000, 2004, 2006).

Table 2

Alcohol Studies

Study	N; Gender; % With Alcohol Disorder	Duration (weeks)	Design	Possible Earnings or Draws; Average Cost	Positive Outcome $p \leq .05$	ASI (alcohol) Change
CM Alcohol Voucher Based						
Higgins et al., 1994.	40; M=27, F=13; 55%	12	CRA v. CRA + abstinent contingent reinforcement	$997.50	Y	Sig. decrease in both groups across time.
Higgins et al., 2000.	70; M=51, F=19; 57%	24	CRA + abstinent contingent reinforcement v. CRA + non abstinent contingent reinforcement	$997.50 for weeks 1-12 and $24 in lottery tickets during weeks 13-24	Y	Sig. decrease in both groups across time.
Downey et al., 2000.	41; M=25, F=16; 68.3%	12	ST + CM, abstinence v. ST + CM, non-contingent (yoked control).	------	N	Slight decrease for contingent CM in weeks 1 & 17, but not for 5.
Carroll et al., 2002.	46; M=36, F=19; 50.9%	12	Naltrexone (n) + low-mag vouchers v. n + high-mag vouchers	Low: $561 High: $1,152	Y	Sig. decrease in both CM groups across time.
Helmus et al., 2003.	20; M=15, F=5; 70%	20	A (4-week baseline)- B (12-week CM treatment- A (4-week return to baseline)	------ avg. cost $31.5 ±13.9	Y	N/A

Table 2

Alcohol Studies (continued)

Study	N; Gender; % With Alcohol Disorder	Duration (weeks)	Design	Possible Earnings or Draws; Average Cost	Positive Outcome $p \leq .05$	ASI (alcohol) Change
CM Voucher Based Fishbowl Alcohol Studies						
Petry et al., 2000.	42; M=42; 100%	8	ST v. ST + CM	128 draws	Y	Sig. decrease in both CM groups across time.
Petry et al., 2004.	120; M=53, F=67; 60%	12	ST v. ST + CM, $80 v. ST + CM, $240	Low, $80 High, $240	Y	Sig. decrease in both CM groups across time.
Petry et al., 2005.	142; M=65, F=77; 50%	12	ST v. ST + vouchers (STV) v. ST + prizes (STP)	Vouchers: $882. Prizes: 575 draws.	Y	No reported decline over time.
Petry et al., 2006.	131; M=79, F=52; 63%	12	ST v. ST + CM, abstinence v. ST + CM, activities	291 draws, abstinence group 294 draws, activities group	Y	Sig. decrease in both CM groups across time.

Table 2

Alcohol Studies (continued)

Study	N; Gender; % With Alcohol Disorder	Duration (weeks)	Design	Possible Earnings or Draws; Average Cost	Positive Outcome $p \leq .05$	ASI (alcohol) Change
Non-CM Alcohol Studies						
Baer et al., 1992	132; M=63, F=69	1-6	6-week class v. 6-unit self-help manual v. 1-hr feedback and advice session	N/A	Y	N/A
Borsari & Carey, 2000	60; M=26, F=34	1	No treatment control v. 1 session MI	N/A	Y	N/A
Larimer et al., 2001	159; M=159, F=0	1	No treatment control v. 1 session MI	N/A	Y	N/A
Marlatt et al., 1998	348; M=160, F=188	1	No treatment control v. 1 session MI, plus feedback	N/A	Y	N/A
Monti et al., 1999	94; M=64, F=36	1	Standard care v. Brief 1 session MI	N/A	Y	N/A
Murphy et al., 2001	84 M=39, F=45	1	1 session MI v. 1 session education	N/A	Y	N/A

Table 2

Alcohol Studies (continued)

Note. N = sample size, all groups combined. Gender: M = male, F = female. % of alcohol disorder = % of total number randomized into study. CRA = community reinforcement approach; MI = motivational interviewing; CM = contingency management. ASI = Addiction Severity Index. Total possible earnings during CM = maximum monetary value that could be earned by the voucher condition. If more than one type of contingency (abstinence and activities) was used, total possible earnings for all contingencies are noted. If more than one contingent voucher (CV) schedule was used, total possible earnings of all the schedules equals the amount shown unless otherwise noted. Assume immediate delivery of vouchers. A dash (------) represents insufficient information.

Positive outcome = a significant change ($p \leq .05$) was reported for the behavior targeted by the contingency management: Y = yes, N = no.

Conclusions and Trends

MET: conducive to adolescents and young adults.

In spite of some research findings, MET seems inherently well suited for the adolescent and young adult substance abusing population. MET's brief duration, non-confrontational and empathetic therapist style, and emphasis on clarifying life goals and exploring the incompatibility of substance use may be more palatable than other types of therapy, given adolescents' often limited financial resources, unwillingness to be in treatment, and lack of trust in authority. Treatment is necessary for this population since they tend to have higher rates of binge drinking in combination with marijuana use, truancy and school problems, and employment difficulties, and MET may encourage these young adults to seek further treatment for their substance use.

MET: reduced substance abuse.

Brief interventions involving MET were shown to be effective for reducing marijuana use (Copeland et al., 2001; Marijuana Treatment Project Research Group, 2004; McCambridge & Strang, 2004; Stephens et al., 2000) and alcohol abuse (Dunn et al., 2001; Heather, 2005; Hettema et al., 2005; Noonan & Moyers, 1997). Focusing specifically on adolescents, MET was effective in reducing marijuana use (McCambridge & Strang, 2004) and alcohol consumption (Borsari & Carey, 2000; Larimer et al., 2001; Marlatt et al., 1998; Monti et al., 1999).

MET: secondary measures.

Secondary measures of marijuana abuse, such as psychological stress over the use of marijuana and marijuana-related problems, were improved in some MET versus control group studies (Copeland et al., 2001; Marijuana Treatment Project Research

Group, 2004; McCambridge & Strang, 2004; Stephens et al., 2000). However, in others, there were no significant reductions in alcohol-related problems after MET for adolescents (Larimer et al., 2001; Murphy et al., 2001).

CM: abstinence rates.

Combining CM with an EST, especially with an escalating schedule of reinforcement, resulted in longer periods of continuous abstinence in many marijuana studies (Budney et al., 2000, 2006; Carroll et al., 2006; Kadden et al., 2007; Sigmon & Higgins, 2006) and in the one published alcohol study (Petry et al., 2000). Prior cocaine studies have demonstrated that CM alone engenders greater abstinence during treatment than CBT alone (Epstein, Hawkins, Covi, Umbricht, & Preston, 2003; Rawson et al., 2002). These studies support the assertion that CM programs with an escalating schedule of positive reinforcement are effective at increasing the duration of continuous abstinence. These long periods of continuous abstinence are thought to be important for long-term outcomes because they allow time to establish alternative sources of non-drug reinforcement (Budney et al., 2006; Carroll et al., 2006). In addition, CM alone or CM added to another treatment resulted in a higher total number of days abstinent in some marijuana studies (Carroll et al., 2006; Kadden et al., 2007; Sigmon & Higgins, 2006), thereby allowing for other positive reinforcers to be experienced.

CM: initiation of early abstinence.

Initiating abstinence early in treatment was found to be an important factor in determining rates of abstinence post-treatment in some marijuana studies (Carroll et al., 2006; Sigmon et al., 2000). These results are significant because the submission of an initially marijuana-free urine sample is a strong indicator of treatment outcome (Moore &

Budney, 2002), and because stable periods of abstinence are associated with better long-term functioning (Higgins et al., 2000).

CM: treatment attendance.

Voucher-based rewards can target specific behaviors besides abstinence, as shown previously for increased methadone treatment attendance and medication compliance (Carroll et al., 2001; Iguchi et al., 1996; Preston et al., 1999). And, CM can improve session attendance in marijuana (Carroll et al., 2006; Sinha et al., 2003) and alcohol treatment settings (Helmus, 2003; Petry et al., 2000). These results are also in accord with prior cocaine CM studies targeting attendance (Higgins et al., 1994; Silverman et al., 1996). Improving session attendance via CM is an especially important target for engaging apathetic young adults in treatment (Deas & Thomas, 2001; Santisteban et al., 1996; Sinha et al., 2003). Notably, in Budney et al. (2000) the relatively low retention rate for the MET+CBT+CM group (when compared to similar cocaine CM studies) was attributed to three potential issues: (1) lack of a CRA component in the study, which acts as reinforcement for attending treatment, (2) smaller voucher amounts, and (3) lower intrinsic motivation to change.

CM: long-term abstinence.

Adding CBT to another therapy treatment, especially CM, results in better long-term abstinence (Budney et al., 2006; Carroll et al., 2006; Henggeler et al., 2006; Kadden et al., 2007). These results are in accord with prior cocaine studies, which found that CBT+CM produced better long-term abstinence (Epstein et al., 2003; Rawson et al., 2006). In addition, cocaine CM studies demonstrated a strong correlation between long periods of abstinence during treatment (3-4 weeks) and long-term (2 year) post-treatment

abstinence (Higgins et al., 2000). These results suggest that CBT is important for maintaining the initial abstinence effect of vouchers, and that the coping skills from CBT may prevent relapse and aid in the maintenance of abstinence (Budney et al., 2006).

However, the relatively low rate of long-term abstinence in the Kadden et al. (2007) study was attributed to the comparatively low budget ($385/person maximum). According to prior studies, the relationship between the value of CM and the effectiveness of the intervention varied: increasing the magnitude of reinforcement was associated with more positive outcomes in some studies (Lussier, Heil, Mongeon, Badger, & Higgins, 2006); however, using lower value vouchers was still effective in another (Petry et al., 2004); while some found no difference in high- versus low-value voucher magnitudes (Carroll et al., 2002; Sigmon et al., 2000).

CM: secondary measures.

Secondary measures of drug use, such as the Addiction Severity Index (ASI), did not usually differentiate between treatment methods in the marijuana studies (Budney et al., 2000; Budney et al., 2006; Sinha et al., 2003) or the alcohol study (Petry et al., 2000). For the alcohol polydrug studies, the ASI Alcohol scores decreased over time but there were no differences between treatment groups (Carroll et al., 2002; Higgens et al., 1994, 2000; Petry et al., 2004, 2006). This finding may suggest that perhaps any and all intervention improves psychosocial functioning. The only strong exception to this trend of no difference between treatment groups was the Carroll et al. (2006) marijuana study, which demonstrated that the CM group showed marked improvement in ASI composite scores compared to the non-CM groups.

Similar trends were observed in marijuana studies using CM in populations with mental illness (Sigmon et al., 2000; Sigmon & Higgins, 2006) and polydrug users (Henggeler et al., 2006). It was suggested that in polydrug studies, a differential drug use comparison over time should be included because drug substitution may occur in which reduction in the use of the targeted drug can be superseded by increased use of other drugs (Shaner et al, 1997).

Future Directions

Participants.

The Job Corps represents a specific subset of alcohol and marijuana abusers and therefore special consideration should be taken when applying the previously stated findings to studies with this population. For example, Sinha et al. (2003) noted that probation-referred marijuana users may not represent all young users, and that the compulsory treatment program may yield a different outcome compared to treatment for those seeking help voluntarily. And in Budney et al. (2006), the authors pointed out that their study was composed mostly of white males from a university-area, however, they went on to state that their results might extend to a more ethnically-diverse metropolitan demographic, however, this was an area in need of further study. Thus, introducing CM and MET to the substance abuse program at Job Corps would provide information on the efficacy of MET and CM for improving outcomes for this difficult to reach ethnically diverse, population of alcohol and marijuana abusing young adults.

Controlling the expense of CM.

CM is a valuable tool in the treatment of substance use disorders; however, it is still not widely applied in clinical settings. One of the major limitations and criticisms of

implementing CM in community settings is the expense. Beginning in 2000, Petry et al. dramatically reduced costs of the commonly used voucher and cash system from approximately $1,000 per individual to $200 by using the fishbowl technique. Nevertheless, for many organizations, paying even $200 per person is unmanageable, even though initiating and perhaps sustaining abstinence makes this cost to society low in comparison to that of continued drug use and treatment.

Petry et al. (2004) investigated the effects of lowering the reinforcement magnitude by increasing the percentage of non-winning cards and decreasing the number of draws. However, they found that the higher magnitude group ($240) was more effective than the lower magnitude group ($80) in achieving abstinence. Therefore, most studies have reverted back to the original fishbowl design. Nevertheless, something else needs to be done with this style of CM to make it more appealing and affordable while still keeping the methodology simple, and two suggestions are offered below.

To understand how the financial component of the fishbowl method may be improved upon, an analysis of the expected payout for each award must be determined. A common fishbowl design (Petry et al., 2006) is to have 500 cards with 275 (55.0%) cards stating ‘Good job, try again’, 199 (39.8%) awarding small prizes ($1), 25 cards (5.0%) awarding large prizes ($20), and 1 (0.2%) representing a jumbo prize ($100). Based upon this distribution of card values, the expected payout for each value type can be evaluated. The expected payout per draw for the $1 cards is $1*(199/500) = $0.398 per draw, $20 cards is $20*(25/500) = $1.00 per draw, and $100*(1/500) = $0.20 per draw for a total expected payout for this system of $1.598 per draw. If an individual earns 100 draws throughout the course of the study, the actual expected cost would be

about $160. The $20 cards represent the highest component of the total payout for this distribution of cards. Therefore, one simple method of controlling the cost was to reduce the number of $20 cards; however, the psychological impact of the reward system was diminished with this simple change (Petry et al., 2004). Instead, the reward system itself can be modified to potentially enhance the psychological impact while continuing to decrease the cost.

The CM method used in the present study was of original design. In this system, poker chips are used and participants win a prize for matching two consecutive colored chips out of a bag. For each award, participants draw twice and attempt to match any of three colors: two white chips represented a $1 prize; 2 blue chips a $20 prize; and 2 red chips a $100 prize. If two chips of different colors are drawn, the individual does not win anything. After each completed draw the participant returns the chips to the bag to ensure consistent probability. This study used a chip bag containing 500 chips in which 405 (81%) were white, 75 (15%) were blue, and 20 (4%) were red. The expected payout per award (where an award constitutes drawing two chips) for this system was computed by the following equation:

$$\text{Expected Payout Per Award} = \left(\frac{405}{500}\right)^2(\$1) + \left(\frac{75}{500}\right)^2(\$20) + \left(\frac{20}{500}\right)^2(\$100) = \$1.27$$

Therefore, the expected payout per award is $1.27, 20% lower than the $1.598 payout for the standard fishbowl method. This method also improves on the negative psychological effect of possibly drawing a card that makes one an "instant loser".

Marijuana as a drug of abuse.

Evidence of physical dependence on cannabis is suggested by reference to the terminology "marijuana withdrawal syndrome," which implies that bodily functions are altered and undesirable symptoms are associated with removal of the drug (Budney et al., 2001). However, the withdrawal symptoms are relatively mild compared to drugs such as cocaine or methamphetamines and increased marijuana use to avoid withdrawal is atypical (Julien, 2005, pg. 575). As a consequence, many users have the perception that marijuana does not have any serious consequences on their lives because it is a "soft" drug incapable of causing an "addiction" (Julien, 2005).

This perception of the safety of marijuana may in part explain poor attendance and retention rates in therapy for those entering compulsory treatment and may be related to lower motivation to change drug using behavior. Psychotherapy is normally a component of treatment, but rather than address the actual marijuana abuse, it often focuses on underlying psychopathologies such as depression that can result from the abuse of marijuana (Julien, 2005). Rather than focusing on the ancillary conditions that may precede marijuana use, such as an episode of depression, this literature review supports the use of therapies such as MET (Budney et al., 2000; Carrol et al., 2006; Kadden et al., 2007; Sinha et al., 2003) that encourage an understanding of one's values and bring forth an awareness of the incompatibility of drug use behaviors. Besides the impact on one's health, marijuana use can result in lower employability due to candidate-screening via drug testing, legal problems due to possession or paraphernalia charges, and conflict with friends and family. Upon guided self assessment, many of these secondary impacts of marijuana use may become more obvious to the individual, and if so may

outweigh their perception of it being a “soft” drug. Consequently, the user may decide to modify their drug using behavior on their own or enter a substance abuse treatment program.

As previously noted, many studies examined MET as a treatment method for marijuana abuse or dependence. However, for a therapist to help a client achieve a critical state of awareness, most individuals require more than one session with a therapist to build the necessary trust and rapport to facilitate this process. And since CM was used successfully to improve treatment attendance, combining MET and CM together was expected to enhance the ST effectiveness.

Purpose of the Study

There is support in the literature for MET as an acceptable therapy for achieving abstinence and increasing retention, and for CM being a useful tool in enhancing both of these objectives when combined with various ESTs including MET. However, it is unclear if CM combined with MET statistically improves treatment retention and number of days not using substances over and above ST for Job Corps students.

Therefore, the primary purposes of this study were to investigate whether the addition of MET and CM to the Job Corps' ST package significantly increased retention rates and therapy attendance, and decreased use for incoming trainees who tested positive for marijuana during their initial drug screen. The main hypotheses were that trainees receiving MET+CM+ST would demonstrate statistically significantly higher rates of therapy attendance, retention, and number of days not using marijuana than ST alone. In addition, it was hypothesized that the ST group would do better than the non-randomized participant sample in therapy attendance, retention, and number of days not using marijuana.

Method

This research was approved by all required parties at the Job Corps, including the Regional and National Director of the Job Corps and the Department of Labor, as a pilot study for the treatment of substance use of new enrollees. This study also was approved after a full review by the Institutional Review Board for Research with Human Subjects (IRB), University of New Mexico (UNM), Albuquerque, New Mexico. In addition, after receiving approval from the IRB at UNM, an application to the National Institutes of Health for a Federal Certificate of Confidentiality (FCC) was made before recruiting participants and an FCC was received. This certificate is designed to protect the privacy of vulnerable research study participants and allows researchers to refuse disclosure of any identifiable sensitive information at the federal, state, and local level by any civil, criminal, or administrative proceedings. All researchers and therapists completed the required IRB certification training for research with human subjects. Support in the form of drug screens and office space was provided by the Albuquerque Center Job Corps, Wellness Center.

Participants

Participants were fourteen (N=14) young people (ages 16-25) enrolled in the Albuquerque Center Job Corps who failed their initial drug screen, and who were randomly assigned to one of two groups: ST with 4 sessions of MET and CM (MET+CM+ST), or ST alone (ST).

Individuals were eligible for recruitment into the study if they were able to give informed consent and (1) tested positive for marijuana within the first 24 hours of being at the Center (“initial drug screen”) (N=14), or (2) had disclosed a known marijuana

and/or alcohol use problem in the past 90 days either verbally on their pre-screen for application into the Job Corps and or through self-referred into the TEAP program within the first 7 days (N=0). Individuals testing positive for other drugs in addition to marijuana were still eligible for the study. Trainees meeting these criteria were assessed to determine further interest and eligibility for the study by the TEAP counselor.

Trainees were ineligible to participate if they were unable to fully comprehend every element of the study and were therefore unable to give informed consent (N=0); had an active psychotic condition (e.g., schizophrenia or bipolar) not currently controlled for with medication as determined by the screening questions from modules of a structured clinical interview designed to assess psychological distress (N=1); admitted to previous difficulties with gambling (N=0); or were unable or unwilling to obtain their parent's or guardian's written permission to participate if under the age of 18 and did not meet the criteria for emancipation used to qualify for the Job Corps (N=2). A resident was considered emancipated "according to applicable laws of the state; or is under 18 years of age and married, and thereby considered to be emancipated; or has no parent or legal guardian; or has been unsuccessful, with the assistance of the AC [Job Corps' recruiters], in locating a parent or guardian" (PRH, Exhibit 1-1, page 11).

Demographic data for the Albuquerque Center (N=429, as of January 8, 2008) included 58.28% (n=250) men and 41.72% (n=179) women with 89.98% (n=386) residents of New Mexico. The ethnic representation included 51.75% (n=222) Native American or Alaskan Native; 35.20% (n=151) Hispanic or Latino; 9.79% (n=42) Caucasian or White; 2.56% (n=11) Black or African American; 0.47% Asian (n=2); and,

0.23% (n=1) other. In addition, 21.21% (n=91) were ages 16 or 17, and 78.79% (n=338) were 18 years or older.

Study participants versus non-randomized participants.

Of the seventeen (N=17) individuals approached to be in the study, 14 (82.35%) consented to the study and 13 (92.86%) of those completed the initial, 4-week, and 3-month assessments. One (7.14%) individual in the treatment group completed the initial assessment, attended three MET sessions, and was dismissed from the Job Corps due to excessive absences in his fifth week of training, and no further data were obtained, including his 4-week assessment. However, this individual passed his official drug re-test for Job Corps prior to being dismissed from the program.

Of the remaining three individuals who were approached to be in the study, two were minors who refused to get their parents' permission to be in the study and one who was ineligible due to active, untreated psychotic symptoms. In addition, 19 individuals who tested positive for marijuana upon entry into Job Corps were not able to be approached for the study due to time delays caused by a two-week summer break at Job Corps (n=8, 42.11%), UNM's IRB study suspension (n=6, 31.58%) related to an internal audit that resulted in all studies with vulnerable populations being suspended temporarily, and a Job Corps' study suspension (n=5, 26.32%) because of a temporary lack of direct therapy supervision on the Job Corps campus. These (N=22) individuals who were not enrolled in the study but who tested positive for ThC upon entry into the Job Corps, retrospectively became the "non-randomized participant control group" for comparison purposes to those who were randomized into the study.

Procedure

Once the individual expressed interest in the study, the TEAP counselor arranged a meeting with the principal investigator ("researcher") and the trainee. The researcher briefly described the study and informed those interested in participating of their potential time commitment: an initial 2 hour pre-assessment; a potential 4 week treatment period, consisting of one psychotherapy session each week lasting up to 50 minutes; weekly urine samples; and a post-treatment and 3-month follow-up, lasting approximately 1 hour each (see Appendix A). The researcher conducted a screening to determine eligibility for the study, and this screen contained a brief description of the study (see Appendix B). Screening questions from modules in the Structured Clinical Interview for DSM-IV (SCID; First, Spitzer, Gibbon, & Williams, 1995, see Appendix C) were used to assess drug use diagnoses as well as potential psychosis.

Once interest and eligibility were determined, the researcher provided a thorough explanation of the study, re-confirmed the person's interest in participation, offered an opportunity to ask any questions or express any concerns, highlighted the main points of the informed consent, offered an additional opportunity to ask questions or express concerns and then ensured the informed consent was signed and witnessed (see Appendix D). If an individual was under the age of 18 and not considered emancipated by New Mexico State Law (thereby a "minor"), a parent or guardian consent was required. For those minors, a meeting was arranged and the parent or guardian was fully informed regarding the study by the researcher. If they agreed to consent their child into the study, they signed the informed consent document for their minor to participate in this research (see Appendix E). The minor was then fully informed and their assent was obtained (see

Appendix F); their assent represented an affirmative agreement to participate in this research study. Every effort was made to ensure that the participants, and if necessary, parents/guardians, understood each element of the study.

The TEAP counselor acted as an advocate for the participants and reassured them that absolutely no negative consequence would occur if they decided not to participate in this research project. After the researcher fully described the study, and before receiving signatures, the TEAP counselor met privately with the individuals to answer any questions or address any concerns. If they continued to express interest, the required signatures were obtained, and a copy of the consent and/or assent form was given to each individual. The HIPAA authorization form was reviewed and signed by each trainee and if necessary, the parents/guardians if they were minors (see Appendix G).

Next, demographic questionnaires were used to collect basic data (see Appendix H). In addition, they were asked to provide a minimum of two contacts that could be reached in the event they left the Job Corps before study completion (3 months from the day of entry into the study) (see Appendix I). Participants were made aware that these individuals would be contacted in an attempt to locate them for the sole purposes of obtaining follow-up study data for Weeks 4 and 12. They also were informed of the exact wording that would be used in contacting these individuals and assured that no additional information would be shared.

The participants were then given a numerical ID that was used on all additional questionnaires and drug screen results, and this information was kept in the assigned therapist's office at the Mental Health Center in a locked file cabinet. The name-numerical ID slips were stored in a locked cabinet separate from all other forms. Slips

were pre-made with assigned numbers and were assigned sequentially to each participant (see Appendix J).

The brief screens, demographics, locator forms, and informed consents were kept together in a separate locked file cabinet. Participants were informed that no records identifying them by name were stored in the same room as any data involving drug use and urine sample results; that identifiable drug using information would not be shared with individuals outside of the research project, nor would it be shared with the TEAP counselor. They were told that all identifying information would be kept in a separate locked cabinet, and all questionnaires and drug test results (slips only, no actual samples) would contain their study ID number and those results would be kept in their therapists' locked file cabinet in a separate office. In addition, they were told that absolutely nothing drug-related they submitted or disclosed in this research project could or would be used against them (e.g., given to either the Health Center or the Director of the Job Corp and consequently forcing them to exit the program due to a second positive urinalysis), and that no one at Job Corps would have access to any of their information at any given point in time, and that the researcher was not authorized to disclose trainees' drug using behaviors to others without their written permission.

Next, a urine sample was collected by the researcher (see Appendix K), followed by three assessments. A Timeline Follow-back interview was used to collect information on frequency of use of illicit drugs and alcohol in the past 3 months (Form 90-DI; Tonigan, Miller, & Brown, 1997) (see Appendix L). The Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES; Miller & Tonigan, 1996) scale for both alcohol and drugs was used to measure readiness to change drug use and alcohol

behaviors, and was used subsequently to initiate discussion regarding motivation to change in the first MET session (see Appendix M). The Addiction Severity Index *Lite* (ASI; McLellan et al., 1992) was administered to assess substance use and secondary effects associated with drug use, and that was used as the main measure of secondary drug use outcomes (see Appendix N). These questionnaires were chosen to assess the degree to which substances were being used, current level of functioning, consequences of use, and motivation to change.

Subsequently, the participants were assigned to either MET+CM+ST or ST. Originally, participants were randomly assigned via urn randomization to balance on the following variables: gender, ethnicity, total months of addiction(s), and therapist. However, due to unexpected time constraints for Therapist #1, they were randomized by gender, ethnicity, and total months of addiction (first seven participants) but not therapist. Then, due to unexpected time limitations on the study, the second seven participants were alternatively assigned to either the control group or treatment group to ensure equal representation for both groups. This resulted in seven (n=7) participants in MET+CM+ST and seven (n=7) in ST. Therapy sessions were administered by two master's level clinical psychology graduate students.

After completion of all assessments, participants were scheduled to return within seven days, for either their first MET session or their next meeting with the researcher. The rules for the CM portion of the study were explained, and they were given an attendance card to monitor ST therapy attendance (see Appendix O). The approximate time for the pre-assessment was 90 minutes. Breaks, snacks, and sodas were offered during this period.

Treatment Conditions

MET plus CM plus ST.

Seven (n = 7) young adults were assigned to receive MET+CM+ST.

Standard treatment (ST).

Job Corps' standard treatment for individuals testing positive for drugs during their initial screen required participation in TEAP. This program included (1) assessment, (2) intervention, (3) counseling, (4) relapse prevention, and (5) prevention and education. Individuals were required to sign a contract stating they would attend three group therapy sessions per week (AA/NA Facilitation; Relapse Prevention; Drug and Alcohol Prevention) for two weeks, and afterwards attend weekly individual therapy (relapse prevention focused) until they tested negative on their second official urine screen. If the trainees were in the program due to alcohol problems, they also were required to attend six AA meetings held in the community. In addition, everyone was required to participate in an exercise program for one hour per week and complete eight hours of community service. This program was administered by a licensed drug counselor.

Motivational Enhancement Therapy (MET)

All participants in the MET+CM+ST treatment condition were offered four sessions of MET provided by a master's level clinical psychology graduate student. Training for MET was provided by a trainer from the Motivational Interviewing Network of Trainers (MINT) who specialized in adolescents and substance abuse. William Miller, Ph.D., the co-founder of motivational interviewing, was available for additional supervision and guidance throughout the study.

Four therapy sessions were conducted in a manner similar to the structure used to treat young marijuana probationers in Sinha et al. (2003). Motivational interviewing encourages clinicians to use an empathetic therapeutic style, avoid resistance and argumentation, resolve ambivalence, heighten discrepancies about personal goals and current behaviors (substance use), and elicit motivation to change (Miller & Rollnick, 2002). The first session was focused primarily on building rapport, listening to their description of their drug use, providing information and feedback regarding the effects of marijuana on their lives and bodies and discussing their motivation to change their substance use behaviors (per SOCRATES responses). Motivation to participate in therapy was heightened by highlighting the negative impact of drug use on their lives. The second and third sessions were focused on an in-depth look into their values using either a values card sort or by having a discussion regarding their values, and identifying the discrepancies between their values and drug using behaviors (see Appendices P-R). In addition, their motivational level was assessed and a change plan was discussed and agreed upon. Alternatives to using substances and ways to avoid high-risk situations were discussed. The fourth session reviewed the change plan, assessed high-risk situations that had occurred during the past week, and elicited strategies for coping with these situations, cravings, and slips. After completion of the four MET sessions, a recommendation to continue contact with the TEAP specialist was made to facilitate continued abstinence.

Contingency Management (CM)

At each session, participants in the MET+CM+ST condition reviewed their attendance record for both ST and MET for the previous week, and submitted urine

samples. Marijuana abstinence and successful attendance for all therapy (MET and ST) were reinforced in the MET+CM+ST group.

During the first session, the rules of the CM program were explained and participants were given the opportunity to ask questions and make recommendations for prizes. In order to introduce the participants to CM and give them exposure to the rewards associated with being successful, they were awarded the full amount of draws (n=15) possible for abstinence, attendance, and the bonus available for the first week, regardless of their behaviors. In addition to giving them an opportunity to sample the rewards associated with success, this design also helped to address the issue of marijuana being a fat soluble drug and staying in the system for approximately three weeks. The first sample in which they were reinforced for abstinence based on their urine samples occurred in Week 2 of the study, which meant the participants had been at Job Corps for longer than three weeks, and therefore the original marijuana in their system should have been no longer detectable had they been abstinent since entering Job Corps.

After each MET session, the therapist totaled the number of draws earned, gave the participants the opportunity to draw from the chip bag, and an appointment was scheduled for the following week. Attendance for the ST group and individual therapy was determined based on a signature card signed by the ST counselor, and the ST counselor was consulted to verify attendance when the card was not available.

After each MET session, participants assigned to the MET+CM+ST group were given opportunities to draw chips from a bag based on their previous week's behaviors. Each week they demonstrated attendance compliance for both MET and ST, *and* submitted negative screens for marijuana they earned 5 bonus awards, and the number of

awards for attendance and abstinence escalated by 2 for each week of successful completion. If they missed any of their therapy sessions or submitted a positive drug test, the number of awards was reset to 5 in each category, and no bonus was awarded for that week. As previously mentioned, to whet their interest and because marijuana is a fat soluble drug, after the first session, they were treated as if they were successful with both their attendance and abstinence and were given 15 awards (5 for attendance, 5 for abstinence, and 5 for the bonus). Participants had the opportunity to earn up to 32 awards for attendance, 32 awards for abstinence, and 20 for bonuses, for a total of 84 awards (see Table 3).

Table 3
CM Award Schedule for MET+CM+ST Group

100% successful—abstinence and activities.				
	Abstinence	Attendance	Bonus	Total
Week 1:	5	5	5	15 (guaranteed)
Week 2:	7	7	5	19
Week 3:	9	9	5	23
Week 4:	11	11	5	27
Total	32	32	20	84

Note. MET = motivational enhancement therapy; CM = contingency management; and ST=standard treatment.

For each award, participants drew twice and attempted to match colors: two white chips represented a $1 prize; 2 blue chips a $20 prize; and 2 red chips a $100 prize. If two chips of different colors were drawn the individual did not win anything. After each

completed award of two draws, the participant returned the chips to the therapist, who dropped them back into the chip bag to ensure consistent probability and to guard against cheating.

This study used a bag containing 500 chips in which 405 (81%) were white, 75 (15%) were blue, and 20 (4%) were red. The expected payout per award (where an award constitutes the drawing of two chips for matching purposes) for this system was computed by the following equation:

$$\text{Expected Payout Per Award} = \left(\frac{405}{500}\right)^2(\$1) + \left(\frac{75}{500}\right)^2(\$20) + \left(\frac{20}{500}\right)^2(\$100) = \$1.27$$

With an expected payout per award of $1.27 and a potential of 84 possible awards, the maximum expected payout per individual was $106.68. The informed consent document educated the participants of the probabilities for each of the groups, and the expected payout per draw.

Participants requested the opportunity to "bank" their prize money to put towards larger prizes in the future. This was an unexpected and welcomed change to the design as it demonstrated ability to delay reinforcement, a skill to be encouraged in a substance-using population, and also provided some insurance that the participants would come back the following week. Prizes were purchased by the researcher and kept on-site in locked cabinets. Examples of prizes that were awarded in this study included: $100—Ipod nanos, digital cameras, and portable DVD players; $20—basketballs, footballs, backpacks, DVDs, jewelry, and diapers; and $1—Gatorade, candy, cookies, and fast food gift certificates.

Advantages of this system over the typical fishbowl system (Petry et al., 2000, 2004, 2006) for administering CM included: a 21% decrease in the cost of administering the program; a psychological advantage based on not having 55% of cards that were instant losers and instead having a 32% chance of drawing a non-winning combination and a 68% of winning something, albeit with more $1 prizes and less $20 prizes; and, an increased opportunity to be connected with a larger prize initially, as the chance of pulling a blue ($20) chip on the first draw was 15% compared to only 5% for the traditional fishbowl system and the chance of pulling a red ($100) chip on the first draw was 4% compared to only 0.5% for the fishbowl system. This connection with a large or jumbo prize was more likely to be present initially, and this increased connection may have instilled a greater sense of being close to winning the larger prizes. However, upon the second draw the likelihood of actually winning the bigger prizes was lower than the fishbowl method (blue: 2.25% versus 5.0%; red, 0.16% versus 0.2%), thereby decreasing the cost of this program but potentially increasing the excitement associated with the process. Psychologically, pulling a card that says 'Nice job, try again' may leave one with an immediate feeling of loss, and perhaps even a sense of failure. However, with this chip system, the feeling of having 'two' chances to pull the right combination may have increased anticipation and hope, if only for an additional moment.

Standard Treatment (ST)

Seven (n=7) young adults were assigned to the ST only condition. The ST was mandatory for all trainees who failed their first official drug test. Urine samples and attendance cards for ST were collected weekly by the researcher, and missing cards were verified via a consult with the TEAP counselor. Regardless of substance use or therapy

attendance individuals were given five chances to win prizes simply for meeting with the researcher and submitting these data.

The maximum award for those in the ST group was 20 awards (see Table 4), and the maximum expected payout per individual was $25.40.

Table 4

CM Award Schedule for ST

100% successful—submitting both drug screens and attendance card.		
	Drug Screen & Attendance Card	Total
Week 1:	5	5
Week 2:	5	5
Week 3:	5	5
Week 4:	5	5
Total	20	20

Note. CM = contingency management; and ST=standard treatment.

Study Duration

Due to the mandatory re-test policy toward the end of the probation period, active participation in the study was four weeks in duration for each individual. Post-treatment follow-up assessments and urinalyses were administered three months after treatment entry. In order to entice individuals to submit the 3 month follow-up assessment, all participants were given 20 awards from the chip bag for completing the assessment. The duration for the study in its entirety was 24 weeks.

Therapy Session Recordings

All therapy sessions were recorded and 50% were randomly coded by a trained, graduate level coder to ensure treatment integrity. The sessions were coded using the motivational interviewing treatment integrity 3.0 (MITI 3.0; Moyers, Martin, Manuel, Miller, & Ernst, 2007). In addition, these tapes were available during the study to address

any concerns the therapists had regarding either the delivery of the treatment according to protocol or the well-being of the individual. In the case of a clinical concern by the graduate level therapist, the director of the UNM Psychological Clinic was notified and involved in addressing that concern.

Clinical Meetings

Therapists met regularly to discuss any issues or concerns regarding individual cases. The objectives of these meetings were to identify clinical concerns and help ensure consistent treatment delivery. These meetings provided a format to address any difficulties administering MET or CM to individuals, and to offer additional training. William Miller, Ph.D. and the MINT trainer were available via telephone when concerns arose regarding MET.

Clinical Emergencies and Supervision

In the case of a clinical emergency, the director of the Psychology Clinic at UNM was available for consultation. The dissertation chair, Barbara McCrady, Ph.D., and the Institutional Review Board for Human Subjects at University of New Mexico were to be notified of any and all adverse events, but there were no adverse event in need of reporting.

Drug Testing

Each individual was required to submit six urine samples (Weeks 0, 1, 2, 3, 4, & 12) and these samples were analyzed for ThC, methamphetimes, and cocaine. Only ThC (the marker for marijuana use) was used for study purposes. Urine was randomly tested to ensure validity of the sample by testing for temperature. If a sample failed the validity check, it was to be discarded, and the participant was to be asked to submit another

sample or have their original sample considered positive for marijuana; however no urine samples failed due to temperature. Participants were immediately notified of their results. The therapist was instructed to warmly respond and either offer congratulations to the participant when testing negative or offer encouragement to the individual when testing positive. Samples not submitted were treated as being positive for marijuana.

Destruction of Urine Samples

All drug screens were conducted in a building and bathroom separate from that of the Wellness Center (the health center on campus), and no information or results were given to any individual at the Wellness Center. All urine samples were poured into and flushed down a toilet immediately after reading the results (no lab involved), the cups then were rinsed with water, and disposed of in the appropriate trash receptacle. The cups were unmarked and contained no identifiable information.

Follow-Up Assessment

After Week 4 of the study, follow-up assessments were scheduled. The following assessments were conducted: Form 90 (Tonigan et al., 1997), ASI (McLellan et al., 1992), and SOCRATES (Miller & Tonigan, 1996), and a urine samples were collected. In addition, a 3-month post-entry, follow-up assessment was administered for each individual enrolled in the study and consisted of the same measures as listed above. For those individuals no longer affiliated with Job Corps, attempts were made to contact them via information on their locator form by the researcher and, when possible, assessments were scheduled.

Measures

The Structured Clinical Interview for DSM-IV-R (SCID-II).

Two modules of the SCID-II (First et al., 1995), Section B—Psychotic and Associated Symptoms and Section E—Substance Use Disorders, were used as criterion measures to identify trainees who had active psychotic symptoms that prevented them from consenting into the study, and to determine substance abuse and/or dependence. The SCID-II is a widely used structured interview instrument that was developed to provide accurate DSM-IV diagnoses. The abbreviated clinical version of the SCID-II was used in this study. The SCID-II Psychotic and Associated Symptoms module was used to identify active symptoms, and the Substance Use Disorders module was used to identify lifetime and past 30-day diagnoses for alcohol and seven other drugs, including marijuana. The SCID-II also differentiates between substance abuse and dependence disorders. Clinical judgment was used to determine whether symptoms were present to meet a disorder. Both modules required administration by a trained clinician and took approximately 10 minutes to administer.

Test-retest reliability of the SCID-II was examined by Williams et al. (1992) in a multisite study that included both clinical and nonclinical settings. Across clinical sites, kappas for current diagnoses ranged from .40 to .86, with a median of .59. The range of kappas was moderately high for both alcohol abuse/dependence (current diagnosis, .48-.73; lifetime diagnosis, .64-.87) and drug abuse/dependence (current diagnosis, .63-.84; lifetime diagnosis, .73-.83). Agreement for alcohol abuse and dependence diagnoses varied considerably across sites. Inter-rater reliability of the SCID-II was consistently

high for a range of disorders. Psychometric data specifically for Module B, Psychotic and Associated Symptoms could not be found in the literature.

Form 90.

The primary assessment measure for substance use was a modified Form 90 DI (Drug Intake) and Form 90 DF (Drug Follow-Up) (Tonigan et al., 1997). The Form 90 is a structured assessment interview for drinking and related behaviors. Form 90 DI has excellent test-retest reliability for indices of drug use in major categories ($r \geq 0.90$ for 57 of 81 comparisons; Tonigan et al., 1997). This instrument uses a timeline follow-back interview procedure to reconstruct daily substance use and was found to have good reliability ($r \geq 0.77$ for cocaine, opiates, and marijuana) and validity (Westerberg, Tonigan, & Miller, 1998). In addition to substance use, this instrument also yields the total number and type of drugs used, age of first use, level of use, as well as school and work attendance, and living arrangements. During their weekly MET sessions, participants were asked to report any substance using episodes on a weekly basis (what drugs, frequency, and amount) and the results were recorded and kept on file to help reconstruct the Week 4, Form 90 assessments. The Form 90 was used for the initial assessment, and 1- and 3-month follow-ups.

Addiction Severity Index (ASI) Lite.

The Addiction Severity Index (ASI) is a structured interview that was used to assess substance use and secondary effects associated with drug use (McLellan et al., 1992). Seven areas are covered: medical status, employment status, alcohol use, drug use, legal status, family/social relationships, and psychological status. The seven ASI composite scores range from 0 to 1, with higher scores indicating more severe problems.

The ASI Lite version is becoming more widely adopted because of the practicality of a shorter questionnaire. The ASI Lite was used to collect general personal and demographic information, along with medical status, employment/support data, alcohol/drug use, legal status, family/social relationship information, and psychiatric status. The ASI Lite contains 22 fewer questions than the ASI, and omits items related to severity ratings. The internal consistency of the ASI Lite version ($0.59 < \alpha < 0.89$) is similar to the full version of the ASI ($0.61 < \alpha < 0.89$) and demonstrates good reliability (Cacciola, Alterman, McLellan, Lin, & Lynch, 2007). The ASI Lite was used for the initial assessment, and 1- and 3-month follow-ups.

The Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES)

The Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES; Miller & Tonigan, 1996) is a measure of readiness to change substance abuse behaviors and displays good reliability for Ambivalence ($r = 0.83$), Recognition (0.94), and Taking Steps (0.91). Two forms were given to assess alcohol use (SOCRATES 7A) and drug use (SOCRATES 7D). Maisto, Chung, Cornelius, & Martin (2003) found support for a 14-item, two-factor structure of the SOCRATES for alcohol based upon a clinical sample of adolescents. Excellent internal consistency was found for the 7-item Taking Steps factor ($\alpha = 0.93$) and the 7-item Recognition factor ($\alpha = 0.88$) that reflects an individual's awareness of his or her alcohol problem.

The three factors that serve as subscales to identify readiness to change are the Recognition, Ambivalence and the Taking Steps subscales. The Recognition subscale represents the extent to which the participant acknowledges experiencing a problem

related to their substance use and perceives that harm will come if they do not change their behavior. The Ambivalence subscale represents the degree to which participants have conflicting emotions about the pros and cons of their substance use. The Taking Steps subscale represents the extent to which participants are actively engaged in changing their substance using behaviors. The SOCRATES was used for the initial assessment, and 1- and 3-month follow-ups.

Outcome Measures

Two primary dependent variables were considered for analysis: Job Corps' retention and number of days abstinent. Retention was defined as the percentage of trainees who passed their second official urine screen and were retained in the Job Corps program. Total number of days abstinent was the sum of days the participant did not consume alcohol or smoke marijuana as evidenced by both urine test and self-report. Given the persistence of marijuana in the system for up to three weeks after last use for chronic users, self report was relied upon for the first three weeks of entry into Job Corps and the urine screen was relied upon for their fourth week and beyond.

Analyses

Subjects were initially randomly and then alternatively assigned to either ST or MET+CM+ST. Differences between the two groups were examined by calculating the covariance between groups for gender, ethnicity, total months of addiction and therapist.

Descriptive statistics (mean and standard deviation) were calculated for the demographic data and initial scores for various values from the Form-90, ASI, and SOCRATES questionnaires. Retention rates between groups were compared using a two-tailed t-test for means.

The dependent variable of interest, days abstinent, was analyzed using ANOVA to contrast outcomes between the treatment and control group, and repeated measures ANOVA was done to compare outcomes over time within treatment group. In addition to abstinence, the data from the self-report instruments (Form 90, ASI, and SOCRATES) were analyzed using ANOVA to compare between-group scores and repeated ANOVA to test for time effects within a treatment group. However, due to the small sample size, the results of the ANOVAs are not reported in the results section of this study.

Correlations between treatment outcomes and self-report scores were analyzed within each treatment group. Finally, because marijuana and alcohol were concurrent target drugs, the abstinence rates for the two drugs were compared to determine if they were positively or negatively correlated. The correlation analyses did not add any additional findings above and beyond the *t*-tests and are not included in the results section of the study.

For all independent-samples *t* tests, Levene's tests were used to evaluate the assumption that the population variances for the two groups were equal. For those tests that were significant for the equality of variance assumption being violated, the corrected independent-samples *t* tests for unequal variances were used. For all analyses, the alpha level was set at .05. Due to sample size, alpha values were not corrected for multiple comparisons. Statistical analyses were conducted using SPSS version 14.0.

Results

Intake

Demographics.

The original study sample (N=14) was comprised of 10 males and 4 females with a mean age of 19.3 (*SD* = 2.58) (see Table 5). The ethnicity of this sample included: 7 American Indians; 3 Hispanics; 3 Caucasians; and 1 "other." Participants completed an average of 10.3 (SD = 2.35) years of education. Eleven trainees lived on the Job Corp campus while 3 lived off-campus. The demographic characteristics are included in Table 5 and are similar to the general population at the Albuquerque Job Corps Center.

Table 5
Demographic Characteristics of Randomized Participants (N=14)

Characteristic	Treatment Group MET+CM+ST (*n*=7)		Control Group ST (*n*=7)		Total (N=14)	
Demographic						
Age, mean (*SD*)	18.71	(2.36)	19.86	(2.85)	19.3	(2.58)
Male, percent (N)	71.43	(5)	71.43	(5)	71.4	(10)
Female, percent (N)	28.57	(2)	28.57	(2)	28.5	(4)
Ethnicity, percent (N)						
American Indian	42.86	(3)	57.14	(4)	50.0	(7)
Hispanic	28.57	(2)	14.29	(1)	21.43	(3)
Caucasian	14.29	(1)	28.57	(2)	21.43	(3)
Other	14.29	(1)	0.00	(0)	7.14	(1)
Resident, percent (N)	85.71	(6)	71.43	(5)	78.57	(11)
Education, mean (*SD*)	10.71	(1.29)	9.07	(2.96)	10.3	(2.35)

Note. MET = motivational enhancement therapy; CM = contingency management; and ST = standard treatment. N = total number in sample. *n* = number in subsample. *SD* = standard deviation.

Substance use.

Approximately 78.57% (*n* =11) of the sample met criteria for a primary diagnosis of marijuana dependence. The remaining 21.43% (*n* =3) met diagnostic criteria for

polysubstance dependence, not including tobacco dependence. In the 90 days prior to intake, all of the participants had used cannabis; 50.0% (*n* =7) used alcohol; 7.14% (*n* =1) used cocaine; 7.14% (*n* =1) used amphetamines; and, 85.71% (*n* =12) used tobacco (see Table 6 for details). The average number of substances used per using day at intake was 1.25 (*SD* = .35), and did not differ significantly between the treatment (*M* = 1.35, *SD* = .42) and control (*M* = 1.15, *SD* = .27) groups, *t*(12) = 1.061, *ns* (see Table 7 for details).

Table 6

Substances Used in the Previous 90 Days—Intake (N=14)

Measure	Treatment Group MET+CM+ST (*n*=7)		Control Group ST (*n*=7)		Total (N=14)	
	Percent	*(N)*	*Percent*	*(N)*	*Percent*	*(N)*
THC Only	28.6	(2)	42.9	(3)	35.7	(5)
THC & Alcohol	42.9	(3)	42.9	(3)	42.9	(6)
THC & Hallucinogen	14.3	(1)	0	(0)	7.1	(1)
THC, Cocaine & Amphetamines	14.3	(1)	0	(0)	7.1	(1)
THC, Opioids & Alcohol	0	(0)	14.3	(1)	7.1	(1)
Total	100	(7)	100	(7)	100	(14)

Note. MET = motivational enhancement therapy; CM = contingency management; and ST = standard treatment. ThC = Tetrahydrocannabinol/marijuana. N = total number in sample. *n* = number in subsample. *SD* = standard deviation.

Table 7

Intake Measures Comparisons by Study Group (N=14)

Measure	Treatment Group MET+CM+ST (*n*=7)		Control Group ST (*n*=7)		Comparison Tests
	Mean	*(SD)*	*Mean*	*(SD)*	
PDA, marijuana	69.32	(29.27)	31.14	(30.75)	$t(12) = 2.38$, $p = .04$*
PDA, alcohol	96.61	(5.73)	99.20	(0.85)	$t(6.29) = -1.53$, $p = .17$
Joints smoked per using day	4.46	(2.88)	4.39	(2.17)	$t(12) = .052$, $p = .96$
Standard drinks per using day	5.67	(6.49)	2.91	(3.61)	$t(12) = .98$, $p = .35$
ASI, ThC composite***	0.06	(0.05)	0.16	(0.11)	$t(12) = -2.07$, $p = .06$
ASI, Alcohol composite***	0.03	(0.03)	0.02	(0.02)	$t(12) = .32$, $p = .76$
SOCRATES, drug scale					
Recognition	51.43	(3.78)	55.71	(11.34)	$t(12) = -0.95$, $p = .36$
Ambivalence	34.29	(31.01)	24.29	(13.97)	$t(12) = 0.78$, $p = .45$
Taking Steps	58.57	(27.95)	37.14	(22.89)	$t(12) = 1.57$, $p = .14$

Note. ASI = Addiction Severity Index. SOCRATES = Stages of Change Readiness and Treatment Eagerness Scale. MET = motivational enhancement therapy; CM = contingency management; and ST = standard treatment. PDA = percent days abstinent. ThC = Tetrahydrocannabinol/marijuana. N = total number in sample. *n* = number in subsample. *SD* = standard deviation.

* $p < .05$

** $p < .01$

*** ASI Composite scores range from 0 to 1; higher scores indicate greater severity.

Group equivalence.

Univariate tests (t-test or chi-square) were conducted on the demographic and main substance use variables at intake. The MET+CM+ST and the ST group did not differ significantly in age, education, gender, ethnicity, residence, number of weeks of lifetime use of marijuana, or number of weeks of lifetime use of alcohol. Significant differences were found in the number of lifetime weeks of tobacco use, with the ST group having smoked significantly more weeks than the MET+CM+ST group.

Independent-samples *t* tests were conducted to evaluate the differences between percent days abstinent (PDA) for marijuana and number of joints smoked per using day at intake for the both groups. The test was significant for PDA for marijuana use, with the ST group using on more days than the MET+CM+ST group. However, the number of joints smoked per using day did not differ significantly between the groups.

Independent-samples *t* tests were conducted to evaluate the differences between PDA for alcohol and for number of standard drinks per using day at intake for the both groups. The groups did not differ significantly on PDA for alcohol use or the number of standard drinks per using day.

Independent-samples *t* tests were conducted to evaluate differences between groups on all subscales of the ASI at intake, and none were found to be significant. The marijuana composite and alcohol composite did not differ significantly between groups. Participants in the MET+CM+ST group and the ST group reported similar levels of life difficulties associated with marijuana and with alcohol.

Independent-samples *t* tests were conducted to evaluate differences between groups on three SOCRATES subscores—Recognition, Ambivalence, and Taking Action—for drug use between groups, and none were found to be significant. SOCRATES results for alcohol use were not computed due to the high number (n=12) of subjects who reported very low alcohol use.

Within Treatment Behavior

Attendance and rewards.

The attendance rate, measured as the percentage of ST sessions attended by the participants, was not significantly different between the MET+CM+ST and ST groups

(see Table 8). Eight was the maximum number of ST sessions available. The potential for earnings and the number of awards earned and dollar value of winning draws were significantly higher for the MET+CM+ST group than the ST group (see Table 8). The maximum number of potential awards for the treatment group was 84, earned by attending all MET sessions and passing the study drug screens for weeks 2, 3, and 4. For the ST group, the maximum number of awards was 20; these were earned if they met with the researcher weekly and submitted the urine tests. Assuming the expected payout per award was $1.27 as outlined in the study proposal, the maximum expected payout was $106.68 for the MET+CM+ST group if all 84 awards were earned, more than the actual average payout of $85.85. For the ST group, the maximum expected payout was $25.40 if all 20 awards for attendance were earned, and the actual average payout was $18.71.

Table 8

Attendance and Reward Measures, Comparisons by Study Group (N=14)

Measure	Treatment Group MET+CM+ST (*n*=7)		Control Group ST (*n*=7)		Comparison Tests
	Mean	*(SD)*	*Mean*	*(SD)*	
ST Treatment Sessions Attended (%)	89.74	(12.99)	78.27	(25.78)	t (11) = 1.05, p = .31
Number of Awards Earned	57.71	(26.80)	16.43	(5.56)	t (6.52) = 3.99, p = .00**
Dollar value of winning draws ($)	85.85	(48.64)	18.71	(9.18)	t (6.43) = 3.59, p = .01**

Note. MET = motivational enhancement therapy; CM = contingency management; and ST = standard treatment. N = total number in sample. *n* = number in subsample. *SD* = standard deviation.

* $p < .05$

** $p < .01$

Differences between therapists.

There was a significant difference between MET-consistent responses between therapists, $t(14) = 4.83$, $p < .001$, with Therapist #1 having an average of 88.46% (SD=2.87) MET-consistent responses and Therapist #2 having a mean of 82.61% (SD=1.82) MET-consistent responses. However, no therapist effect for retention was found, as all participants in the MET+CM+ST group were retained by Job Corps. Further, no therapist differences were found for the participant's Week 4 study urine screens, $\chi^2(1, N=7) = .058$, *ns*, or for the 3-month follow-up urine screens, $\chi^2(1, N=7) = 1.22$, *ns*.

Week 4 Outcomes

Urine drug screen.

Five of the seven participants in the ST group passed the final Job Corp drug screen; each of those five were granted extensions. Seven participants in the treatment group passed the final Job Corp drug screen and one person received an extension. Weekly extensions were offered by the TEAP counselor if the participants acknowledged they were likely to fail their official drug screen which would result in being expelled from Job Corp.

A two-way contingency table analysis was conducted to evaluate whether study participants in the MET+CM+ST group were more likely to pass their Week 4 study urine screen than those in the ST group. The two variables were study group with two levels (MET+CM+ST group and ST group) and results of Week 4 study urine test with two levels (failed or passed). The study group (MET + CM + ST or ST alone) and results of the Week 4 drug test were significantly related (see Table 9) with the MET+CM+ST

group passing the urine tests significantly more than the ST group. However, because the groups differed significantly in PDA for marijuana at intake (see Table 7), a logistic regression was conducted to control for the effect of PDA on treatment outcomes (see Table 10). In this regression model, the treatment condition did not significantly change the model fit compared to a model based on initial PDA for marijuana, $\chi^2(1, N = 14) = 1.269$, *ns*. Due to small sample size, individual coefficients in the regression model were not interpretable (Greenland, Schwartzbaum, & Finkle, 2000).

In a logistic regression model predicting Week 4 urine test results based on treatment condition and Week 4 PDA for marijuana, the addition of treatment condition to the model significantly improved model fit above prediction based on PDA alone, χ^2 (1, N= 14) = 10.385, $p < .01$. Again, individual coefficients in the regression model were not interpretable due to small sample size (Greenland et al., 2000).

Table 9

Week 4 Outcome Measures, Comparisons by Study Group (N=14)

Measure	Treatment Group MET+CM+ST (*n*=7)		Control Group ST (*n*=7)		Comparison Tests
	Mean	*(SD)*	*Mean*	*(SD)*	
Pass Job Corps' final drug screen (%)	100.0	n/a	71.4	n/a	$\chi^2(1, N=14)= 2.23, p = .13$
Pass Week 4 study drug screen (%)	71.0	n/a	0.0	n/a	$\chi^2(1, N=14)= 7.78, p = .01$**
PDA, marijuana	96.42	(4.63)	72.95	(36.70)	$t(6.22) = 1.68, p = .14$
PDA, alcohol	86.76	(25.50)	95.67	(7.85)	$t(11) = -.883, p = .40$
Joints smoked per using day	0.94	(1.16)	3.07	(2.71)	$t(11) = -1.78, p = .10$
Standard drinks per using day	3.12	(3.60)	4.08	(5.44)	$t(11) = -.368, p = .72$
ASI, ThC composite***	0.03	(0.05)	0.11	(0.15)	$t(7.28) = -1.26, p = .25$
ASI, Alcohol composite***	0.05	(0.11)	0.02	(0.02)	$t(11) = .82, p = .43$
SOCRATES, drug scale					
Recognition	46.67	(5.16)	51.43	(9.00)	$t(11) = -1.14, p = .28$
Ambivalence	31.67	(19.41)	22.86	(11.13)	$t(11) = 1.03, p = .33$
Taking Steps	61.67	(26.39)	35.71	(19.88)	$t(11) = 2.02, p = .07$

Note. ASI = Addiction Severity Index. SOCRATES = Stages of Change Readiness and Treatment Eagerness Scale. MET = motivational enhancement therapy; CM = contingency management; and ST = standard treatment. PDA = percent days abstinent. ThC = Tetrahydrocannabinol/marijuana. N = total number in sample. *n* = number in subsample. *SD* = standard deviation.

* $p < .05$

** $p < .01$

*** ASI Composite scores range from 0 to 1; higher scores indicate greater severity.

** $p < .01$

*** ASI Composite scores range from 0 to 1; higher scores indicate greater severity.

Table 10

Fit Coefficients for Logistic Regression Models Predicting Week 4 Urine Tests

Blocks	χ^2
Predicting Week 4 Urine Tests, Week 1 PDA	
Week 1, PDA for ThC Only	19.039
Week 1, PDA + Treatment Group	17.770
Predicting Week 4 Urine Tests, Week 4 PDA	
Week 4, PDA for ThC Only	6.938
Week 4, PDA + Treatment Group	17.323

Note. χ^2 = computed value of chi square test. PDA = percent days abstinent. Treatment group = MET (motivational enhancement therapy) + CM (contingency management) + ST (standard treatment). ThC = Tetrahydrocannabinol/marijuana.

Additional independent-samples *t* tests were conducted to identify significant differences between those individuals who passed their Week 4 study drug test (*n*=5) and those who failed (*n*=9). A *t* test for PDA for marijuana at intake, $t(11.73) = -4.79$, $p = .00$ found that participants who failed the Week 4 drug test ($M = 31.46$, $SD = 28.30$) reported significantly fewer days abstinent in the past 90 days at intake than those who passed the Week 4 drug test ($M = 84.02$, $SD = 12.54$). Also, there was a significant difference in reported lifetime days of use of tobacco $t(12) = 3.98$, $p = .00$ between those who failed the Week 4 drug test ($M = 291.78$, $SD = 143.46$) and those who passed ($M = 25.60$, $SD = 44.32$).

PDA–marijuana and alcohol.

The mean PDA for marijuana and alcohol at Week 4 did not differ significantly between the MET+CM+ST and ST groups.

ASI scores.

The ASI composite scores at Week 4 comparing the MET+CM+ST group to the ST group were not found to be significant for either the drug or marijuana scores.

SOCRATES drug scores.

Independent-samples *t* tests were conducted to test for significant differences between groups for three subscales of the SOCRATES regarding drug use. None of the SOCRATES drug score subscales at Week 4 were found to be significant when comparing study groups; however, differences approached significance, p=.07, for the Taking Steps subscale, with the MET+CM+ST group tending to report more behavioral changes than the ST group.

3-Month Outcomes

Urine drug screen.

All seven participants in the ST group either failed the drug test or admitted to marijuana use at the 3-month follow-up. Three participants in the MET+CM+ST group submitted negative drug tests, one participant was not reachable and was assumed to have failed, and the remaining three failed by either providing a positive drug test or by admitting to drug use that would have resulted in a positive test.

A chi-square test was conducted to evaluate differences in the urine tests pass-fail for marijuana at the 3-month follow-up comparing the MET+CM+ST group relative to the ST group (see Table 11). The chi-square probability was significant, with participants in the MET+CM+ST group on the average having a greater pass rate than the ST group.

Table 11

3-Month Follow-Up Outcome Measures, Comparisons by Treatment Group (N=14)

Measure	Treatment Group MET+CM+ST (*n*=7)		Control Group ST (*n*=7)		Comparison Tests
	Mean	*(SD)*	*Mean*	*(SD)*	
Pass 3-month follow-up drug screen (%)	42.9	n/a	0.0	n/a	$\chi^2(1, N=14) = 3.82$, $p = .05$*
PDA, ThC	87.83	(20.67)	46.29	(44.40)	$t(8.75) = 2.21$, $p = .055$
PDA, alcohol	82.67	(28.59)	97.50	(3.55)	$t(5.13) = -1.26$, $p = .26$
Joints smoked per using day	2.25	(2.64)	4.64	(3.11)	$t(11) = -1.50$, $p = .16$
Standard drinks per using day	1.62	(3.41)	4.07	(5.57)	$t(11) = -.94$, $p = .37$
ASI, ThC composite***	0.05	(0.06)	0.22	(0.02)	$t(11) = -2.91$, $p = .01$**
ASI, Alcohol composite***	0.09	(0.15)	0.02	(0.02)	$t(5.12) = 1.29$, $p = .25$
SOCRATES, drug scale					
Recognition	51.67	(4.08)	52.86	(7.56)	$t(11) = -0.34$, $p = .74$
Ambivalence	28.33	(16.02)	22.86	(13.80)	$t(11) = 0.66$, $p = .52$
Taking Steps	66.67	(25.03)	31.43	(17.73)	$t(11) = 2.97$, $p = .01$**

Note. ASI = Addiction Severity Index. SOCRATES = Stages of Change Readiness and Treatment Eagerness Scale. MET = motivational enhancement therapy; CM = contingency management; and ST = standard treatment. PDA = percent days abstinent. ThC = Tetrahydrocannabinol/marijuana. N = total number in sample. *n* = number in subsample. *SD* = standard deviation.

* d$p < .05$

** $p < .01$

*** ASI Composite scores range from 0 to 1; higher scores indicate greater severity.

PDA for marijuana.

An independent-samples *t* test was conducted to compare PDA for marijuana for the MET+CM+ST group versus the ST group. The test approached significance, $p = .055$, with participants in the MET+CM+ST group having greater PDA for marijuana than the ST group at the 3-month follow-up.

PDA for alcohol.

Independent-samples *t* test were conducted to compare the MET+CM+ST group to the ST group for PDA and for standard drinks per using day at intake and at the 3-month follow-up. No significant differences were found between the MET+CM+ST and the ST groups with respect to PDA for alcohol, and the *t*- test for the standard drinks per using day indicated similar drinking in both groups.

In addition, regarding total lifetime weeks of alcohol use, the independent-samples *t*- test found no significant difference between groups, $t(12) = .46$, *ns*, with the participants in the MET+CM+ST group ($M = 115.86$, $SD = 187.40$) drinking similarly to the ST group ($M = 81.00$, $SD = 76.82$).

ASI for marijuana.

An independent-samples *t*- test was conducted to evaluate differences in composite ASI score for marijuana at the 3-month follow-up in the MET+CM+ST group relative to the ST group. The test was significant with participants in the MET+CM+ST group on the average having lower marijuana composite scores than the ST group.

SOCRATES drug scores.

Independent-samples *t*- tests were conducted to identify significant differences between groups for the three subscales of the SOCRATES regarding drug use. Only the

Taking Steps scale for the 3-month follow-up was found to be significant with the MET+CM+ST group reporting greater endorsement of Taking Steps than the ST group.

Differences related to week 4 urine screen.

Additional independent-samples *t*- tests were conducted to identify significant differences in 3-month outcomes between those individuals who passed their Week 4 study drug test (*n*=5) and those who failed (*n*=9). At the 3-month follow-up there was a significant difference in PDA for marijuana, $t(7.51) = -3.35$, $p = .01$, reported between those who failed the Week 4 drug test ($M = 46.41$, $SD = 41.11$) and those who passed ($M = 95.95$, $SD = 6.27$). An additional *t*- test found that the composite drug score, $t(8.19) = 4.25$, $p = .00$, was significantly different for those who failed their Week 4 drug test ($M = .05$, $SD = .03$) than those who passed ($M = .01$, $SD = .01$). In addition, the composite marijuana score was significantly different, $t(8.17) = 4.21$, $p = .00$, for those who failed their Week 4 drug test ($M = .21$, $SD = .12$) than those who passed ($M = .02$, $SD = .03$).

Study participants versus non-randomized participants.

The non-randomized participant sample (N=22) was comprised of 17 males and 5 females with a mean age of 18.36 ($SD = 1.81$). The ethnicity of this sample included: 10 American Indians, 9 Hispanics, 2 African Americans, and 1 Caucasian. There were no significant differences in demographics between those who consented into the study (N=14) and those who were not in the study (N=22) in relation to: gender, χ^2 (1, N=36) = .01, *ns;* age, $t(34) = -1.26$, *ns;* or ethnicity, $\chi^2(4, N=36) = 6.05$, *ns.*

A two-way contingency table analysis was conducted to evaluate whether trainees in the MET+CM+ST group, ST group, and those not consented into the study were retained equally at Job Corps. The two variables were treatment condition with three

levels (MET+CM+ST, ST, or not consented) and results of final mandatory drug test with two levels (failed or passed). The group they were in and results of the final mandatory drug test trended towards significance, $\chi^2(2, N=36) = 5.03$, $p = .08$. This suggested a movement towards significant differences between groups, with the Job Corps retaining 100.00% of the MET+CM+ST group; 71.43% for the ST; and 54.55% for the non-randomized participant control group.

Additional analyses were conducted to compare retention rates after the probationary period at Job Corps for those who entered the study and those who were not consented into the study, but who were eligible based on testing positive for marijuana on their initial drug screens. A two-way contingency table analysis was conducted to evaluate whether trainees were more likely to be retained by Job Corps if they were consented into the study versus not being consented into the study. The two variables were study status with two levels (enrolled in the study or not consented into the study) and results of final mandatory drug test with two levels (failed or passed). Study status and results of final mandatory drug test were significantly related, $\chi^2(1, N=36) = 3.74$, $p = .05$. The proportions of trainees who were retained included: 85.71% for study participants (100.00% for the MET+CM+ST group; 71.43% for the ST group); and, 54.55% for those not enrolled in the study.

Discussion

The primary purpose of this study was to investigate whether the addition of MET and CM to the Job Corps' ST package significantly impacted retention rates, therapy attendance, and substance use for incoming trainees who tested positive during their initial drug screen compared to ST alone. The main hypotheses of the study were that trainees receiving MET+CM+ST would demonstrate (a) statistically significant higher rates of retention and therapy attendance and (b) lower rates of marijuana use compared to ST group. Due to the limited sample size, a third, non-randomized participant group was added for comparison purposes—this group included those individuals who failed their initial drug screen for marijuana but were not consented into the study. The hypothesis was that the non-randomized participant group would have a reduced retention rate compared those in the study.

Retention was defined as passing the final mandatory drug test administered by Job Corp after the probationary period. The differences in retention rates for the three groups (MET+CM+ST, ST, and not consented) trended towards significance, with 100% retained for the treatment group, 71.43% for the control group, and 54.55% for the non-randomized participant control group. And, those in enrolled in the study had significantly better retention rates in comparison to the non-randomized participant control group.

Official retention rates were not found to differ significantly between the MET+CM+ST and ST group, however, this finding may be due to the extensions granted by the TEAP specialist for those individuals who reported they had failed their Week 4 study drug screen. In contrast, there were significant differences found between

the MET+CM+ST group and ST group for those who passed their Week 4 study drug screen, suggesting a potential treatment effect that should be investigated with a larger sample. The MET+CM+ST group also demonstrated significantly higher pass rates for the 3-month drug screen than the ST group, and they reported higher PDA for marijuana that approached statistical significance (p= 0.055) at the 3-month follow-up.

The improved Job Corps retention rate found in the present study is in accord with prior clinical trials focusing on MET and substance use, especially those targeted at reinforcing retention (Hettema et al., 2005). In addition, these findings offer additional support for the use of CM in improving retention (Higgins et al, 1994; Petry et al, 2005). However, due to the design of this study, it is impossible to determine whether it was MET or CM or the combination of those with ST that increased the likelihood of passing the Week 4 and 3-month follow-up study drug screens.

Participants in the treatment group may have been motivated to succeed not only because of the rewards provided by the CM component or the heightened awareness achieved in MET, but also because of their desire to please their therapist. This desire is evidenced by participants' statements in relation to their study drug screens such as "I want *you* to see that *I've* been good" and "I'm sorry, I'll pass next week, I promise", which may reflect the reporting bias acknowledged in another MET study (Baer et al., 1992). There were no differences between therapists for retention rates, Week 4 study drug screen or the 3-month follow-up study drug screen, and feelings of wanting to please both therapists were expressed during the course of the study. Many participants came from troubled homes or the foster care system, therefore, the sense of feeling "special" and wanting to please may have played a significant role in their motivation

towards abstinence. Working alliance (i.e., the bond between therapist and patient) has been found to be an effective predictor of post-treatment use in adolescent substance users (Tetzlaff et al., 2005). Further, the CM component may have reinforced this connection with the therapist, as it may have signified a reward for this positive relationship. Also, because all of these individuals came from impoverished backgrounds, the simple act of earning/getting "gifts" may have been a powerful motivator or reinforcer to them, perhaps more so than similar rewards for those who are from more affluent populations. Noteworthy, among cocaine abusers, studies have demonstrated that CM is equally effective in treating substance users with higher income levels as lower levels (Rash, Olmstead, & Petry, 2009).

In addition, CM component of this study may have helped improve PDA during the study not only because of the escalating reward system but also because of the unexpected requests of many of the participants to "bank" their winnings to purchase more expensive and more desirable prizes (e.g. Ipods, DVD players). The decision for delayed reinforcement was an investment that suggested a commitment to maximize their opportunities to add to their winnings by submitting negative urine samples and attending therapy sessions, which may have contributed to the high study retention rates. Perhaps the addition of the option of "banking your winnings" to the typical CM structure may enhance the effectiveness of CM in future studies, and also brings into question the general consensus that CM is most effective with those participants who desire immediate reinforcement (e.g., Griffith, Rowan-Szal, Roark, & Simpson, 2000).

Notably, one of the issues regarding the use of CM in the treatment of substance use is the cost (Higgins et al., 1994, 2000). This study provides limited evidence for the

reduction of substance use achieved even when the expected payout is decreased by 20% ($1.60 versus $1.27 expected payout per award) and the time in which rewards are offered are reduced, 4 weeks versus 3 months. Additional research is needed to determine if the long term success rates in reducing substance use are similar.

The attendance rate, measured as the percentage of ST sessions attended, did not differ between the treatment (89.74%, SD 12.99) and control group (78.27%, SD 25.78) and both were relatively high. The expectation was that the addition of MET+CM to ST would result in a significantly higher attendance rate than for ST alone. In a population with similar ages to the Job Corps trainees, Aubrey (1998) reported a doubling of outpatient substance abuse treatment sessions attended by adolescents given a single session of MET at intake. Moreover, CM has been shown to improve session attendance for young adults in marijuana studies (Carroll et al., 2006; Sinha et al., 2003), and in alcohol treatment settings (Helmus et al., 2003; Petry et al., 2000). However, a prior study (Budney et al., 2000) demonstrated lower than expected attendance rates in an MET+CM+CBT group, which was partially attributed to the small voucher amounts and lower intrinsic motivation to change.

In the current study, the attendance rate for ST was quite high (>75%) for both the MET+CM+ST group and the ST group, which is perhaps unusual for this historically apathetic demographic, especially given the relatively small reward payout design ($1.27 expected payout per draw and 84 potential draws for the MET+CM+ST group and 20 potential draws for the ST group). One confounding factor was that the ST participants earned CM draws for submitting urine tests, albeit designed to have the least impact possible, this small collateral reinforcement may have improved attendance in the ST.

Also, this particular population is under much stricter controls than most young substance users in that their time is structured with adult supervision throughout the day with classes, meals, and recreational activities, making it difficult to avoid attending the required ST when on campus. Furthermore, compared to most substance users, those at Job Corp have the additional motivator to attend the required therapy and stay in the program rather than return to the streets or to broken homes and lose their housing, meals, small stipends and vocational and educational training.

Measurements Issues

The ASI is a structured interview that allows for assessment of substance use and secondary effects associated with drug use (McLellan et al., 1992). The ASI drug composite and ASI marijuana scores at the 3-month follow-up were statistically lower for the treatment group than the control group, suggesting fewer marijuana related problems for the treatment group. These results were similar to one other CM marijuana study (Carroll et al. 2006); however, in general the composite ASI scores exhibited little difference between treatment groups in marijuana (Budney et al., 2000, 2006; Sinha et al., 2003) and alcohol (Petry et al., 2000) studies. Therefore, it is possible that the ASI may not be the best measure for discerning treatment differences in certain groups.

In addition, depending on the demographics of the participants of a given study, certain accommodations need to be made to normalize the ASI composite scores. For example, individuals under probation-referred treatment may have mandatory court appearances that will inflate their Legal Composite, and pregnant women or people with a pre-existing medical condition may make more frequent medical appointments than a nominally healthy individual. In addition, the family/social score is biased against those

who are homeless or come from bad family situations, and drug use may not be the full reason for their family issues.

In addition, psychometric properties for the ASI in relation to adolescents have not been researched adequately, and the ASI does not account for individuals in controlled environments, such as inpatient substance abuse programs or those in a confined vocational training program. Consequently, care must be taken when applying the ASI to groups that do not fit the 'general population' demographics. For instance, Sinha et al. (2003) used the standard research ASI in their study of marijuana treatment for probation-referred young adults, and this may not have been the best method for this population to assess psychosocial difficulties related to their drug use.

In spite of these criticisms, the ASI has become the *de facto* measure of consequences related to drug use, and is strongly recommended to be included in research supported by federal funding agencies when conducting addictions research. Therefore, although the ASI has some limitations, it is highly regarded, and was included in this study.

Limitations of the Study

There were several limitations of the study that need to be addressed in future research. First, a larger sample size is needed to adequately test the hypotheses. Also, due to unexpected complications relating to study therapists, randomization to therapist had to be compromised. At the beginning of the study, participants were randomly assigned via urn randomization to balance on: gender, ethnicity, total months of addiction(s) and therapist. However, due to unexpectedly having to replace one therapist with another who was under time constraints, the first seven participants were

randomized to either treatment or control group by gender, ethnicity, and total months of addiction and more heavily weighted to the new therapist if assigned to the treatment group. Also, three months into the study there were unexpected time limitations imposed on the duration of the study by the Job Corps due to supervisory issues, and participants were then alternatively assigned to either the control group or treatment group based on entry into Job Corps to ensure equal representation for both groups. In addition, the participants unexpectedly reported their drug screen results to the TEAP counselor, and were often granted extensions for their final retest, thereby compromising the study's measure of retention in Job Corps. Furthermore, the researcher who conducted the 3-month follow-ups was not blind to study conditions, introducing potential reporting bias. Finally, longer term follow-ups of 6- to 12-months would be useful to ascertain delayed treatment effects or changes in overall behavior.

Challenges of Conducting Research in the Field

One of the significant contributions of this study is that it brought empirically supported treatment into a real world, non-clinical treatment setting. However, there were many challenges of conducting this study in the field. Due to the nature of the setting, a federally funded vocational program, additional time and compromises were required to obtain initial approval to conduct this study, and Job Corps was able to enforce an unexpected mandatory study end date three months into the study, which limited and greatly shortened the recruitment time (6 months versus an unlimited amount of time). Also, this particular center unexpectedly reached maximum capacity early on in the study, and subsequently became much stricter about whom they allowed into the

program. As a result, they were able to screen out many who would typically fail their initial drug screen, which greatly limited recruitment activity.

In addition, since many participants reported their drug screen results to the TEAP specialist, and were often granted extensions for their final retest, the study's primary measure of Job Corps retention rate was compromised. However, the participants benefited personally because they were able to monitor their urine screens via the study and were aware if they would fail if tested by Job Corps, and these extensions made it possible for many to stay in the program, which was ultimately in their best interest, though admittedly not in the best interest of the study. Noteworthy, these extensions were granted in part because this program is federally funded and a portion of their funding is based on their actual retention of students, therefore they did not always adhere to their "zero tolerance" policy for substance use.

Further, substance using teenagers and young adults are typically considered a difficult population to treat as they are often either in the contemplation or even precontemplation stage of change (Sinha et al., 2003; Walker et al., 2006), and are not yet actively preparing for change. Moreover, since most of the participants lived on campus and spent the majority of their time together, there may have been greater peer pressure to use substances since substances were widely available on campus. Additional unexpected challenges of conducting this study in a real life setting included: one participant in the treatment group found out she was pregnant and her motivation for abstinence was most likely based on the health of her child and not due to any treatment intervention; two participants in the control group became actively suicidal (not study related) and required brief interventions by the researcher due to the lack of mental health

care available to them; and, there were problems associated with the lack of mandatory on-site supervision for the study therapists.

Clinical Implications

To the extent that that findings can be generalized from such a small sample, this study provides the first limited evidence that the population of marijuana-using adolescents and young adults enrolled in Job Corps responds well to both MET and CM. The nonconfrontational, client-centered philosophy of MI was easily embraced by this population. The majority of treatment participants arrived enthusiastic for their sessions, engaged actively in the treatment process, and appeared to enjoy the positive relationship with their therapist. And, in general, study participants became quite animated and excited about the CM portion of the study. All of these individuals came from impoverished backgrounds and many had little experience with being positively reinforced for good behavior, therefore they were enthusiastic about the opportunity to get material items that were reinforcing to them, and to be acknowledged for being responsible and making better life choices in relation to their substance use. Noteworthy, the majority opted for delayed reinforcement for their awards, demonstrating an unexpected finding of discipline, as substance users are often thought of as desiring immediate reinforcement. Further, this study may suggest that trainees who can simply monitor drugs in their system on a weekly basis may be more likely to achieve abstinence as it makes them more accountable to themselves and/or to the researcher or therapist; or perhaps the tests simply give frequent, concrete evidence of positive life choices, which further encourages abstinence.

Future Directions

Based on this study, there are many areas in need of further investigation for treating substance using adolescents and young adults in the Job Corps setting. First and foremost, larger study groups would provide greater confidence in the findings of this study. A 2x2 study design that included 4 groups: ST, ST+MET, ST+CM, and ST+MET+CM would allow one to separate the effects of ST, MET and CM. Further, 6- and 12-month follow-up periods would allow for the investigation of delayed treatment effects, and preferable, those follow-ups should be conducted by a researcher blind to study conditions. And, implementing 'booster' MET sessions over a 12 month period may help in maintaining the gains achieved during the first 4 weeks of the study.

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Appendix A Schedule of Assessments

SCHEDULE OF ASSESSMENTS

	Minutes	Pre-assessment (Week 0)	Weekly (Weeks 1-4)	Post-Assessment (Week 4)	3 month Follow-Up (Week 12)
❑ Quick Screen	2	♦			
❑ Structured Clinical Interview for DSM-IV Axis I Disorders (Substance Abuse and Dependence/ Psychosis)	20	♦			
❑ Consent Form	10	♦			
❑ HIPAA Authorization	5	♦			
❑ Locator Form	2	♦			
❑ Demographic Form	3	♦			
❑ Form 90/ Time-Line Follow Back	30/5	♦	♦	♦	♦
❑ ASI	30	♦		♦	♦
❑ SOCRATES	5	♦		♦	♦
❑ Urine Drug Screen/ Mouth Swab	5	♦	♦	♦	♦
TOTAL EXPECTED TIME (Minutes):		**112**	**10**	**45**	**60**

Appendix B Screening Form for Potential Participants

Study: Job Corps
ID:
Date:

SCREENING FORM

1. Are you over 18 years of age or considered legally emancipated by New Mexico State Law? YES ____ NO____

   If no, would you be willing and able to get parental/guardian permission to participate in this study? This would require them knowing that you tested positive for drugs upon entering the Job Corps.

   YES ____ NO____ (discontinue)

2. Are you currently in your probationary period at the Job Corps and are you enrolled in the TEAP program? YES ____ NO____ (discontinue)

3. Did you test positive for marijuana within the first 48 hours of being at the Albuquerque Center ("initial drug screen"), or do you have a marijuana problem?

   YES ____ NO____ (discontinue)

4. Do you have a current or past gambling problem?

   YES ____ (discontinue) NO____

5. Have you ever been diagnosed with any type of psychosis, or thought disorder (e.g. Schizophrenia, Bipolar, etc)?

   YES ____ (discontinue, if not currently controlled for by medication and also meet the requirement for an active thought disorder according to the SCID)

   NO____

* Emancipation: In New Mexico, an "emancipated minor" is an individual under 18 years of age and meets one of the following criteria: is or ever has been married; currently serving in the U.S.

military; or is 16 or17 and has been emancipated by Court Order, and that order does not exclude the minor from making health care decisions for himself or herself.

If eligible for the study, then say:

This study asks participants to describe their drug use experiences in a confidential, individual manner, fill out several questionnaires, and submit breath and urine screens on 6 different occasions. Please understand, absolutely everything will be kept confidential, that is, your name will not appear on your forms that contain drug use information or your urine results. There is nothing in this study that will negatively impact your place at the Job Corps in any manner—that means, you cannot be kicked out of the Job Corps for any information submitted during this research study!

There will be a 4 week treatment period, and during this time you have a 50% chance of attending weekly 50-minute psychotherapy sessions in addition to your required therapy in TEAPS. These sessions will be used to better understand your values and motivation for change and drug use.

A breath and urine sample will be collected weekly and your attendance cards for therapy in TEAPS will be reviewed. Everyone in the study submits this information weekly.

In addition, everyone will receive the opportunity to win prizes—however, for those assigned to receive additional weekly therapy sessions (50%), you must be abstinent and complete activities (for example, attending your required TEAPS therapy on-time and attending our therapy session on-time) in order to have the opportunity to win prizes. For the others, simply submitting urine screens and therapy attendance cards each week, regardless of outcome, will have the opportunity to win prizes, though they will have much fewer chances. Are you okay with this?

Lastly, 1 hour posttreatment assessments will occur on Week 4 and 12 after completion of the treatment phase in which you would be asked to fill out many of the same assessments and submit a breath and urine screen. Would you be willing to participate?

If yes, continue with the informed consent, and assessments, or schedule an appointment for the pre-assessment in the next 48 hours.

Day and time scheduled _____

Appendix C Screening Questions From Modules of SCID

SCREENING SCID QUESTIONS

Study: Job Corps
ID:
Date:

SCID-CV: Quick Screen

B. PSYCHOTIC AND ASSOCIATED SYMPTOMS

SCID Question	DSM Criteria: Delusions	Meets Criteria	Notes
B1	Delusion of reference	Y N	
B2	Persecutory delusion	Y N	
B3	Grandiose delusion	Y N	
B4	Somatic delusion	Y N	
B5	Other delusions	Y N	
B6	Auditory hallucinations	Y N	
B7	Visual hallucinations	Y N	
B8	Tactile hallucinations	Y N	
B9	Other hallucinations	Y N	
B10	Catatonic behaviors	Y N	
B11	Grossly disorganized behavior	Y N	
B12	Grossly inappropriate affect	Y N	
B13	Disorganized speech	Y N	
B14	Negative symptoms	Y N	
B15	IF DELUSIONS OR HALLUCINATIONS HAVE EVER BEEN PRESENT, FILL OUT CHRONOLOGY SECTION		

CHRONOLOGY: Age (or Date) Brief description Treatment

SCID-CV: Quick Screen E. ALCOHOL AND OTHER SUBSTANCE USE DISORDERS

SCID Question	DSM Criteria	Meets Criteria	Notes
E1	History of excessive drinking OR evidence of alcohol-related problems	Y N	
	DSM Criteria: Alcohol Abuse		
	A. Maladaptive pattern of alcohol use, leading to clinically significant impairment or distress, as manifested by 1 (or more) of the following occurring within a 12-month period:		
E2	A1. failure to fulfill major role obligations at work, school or home	Y N	
E3	A2. use in situations in which it is physically hazardous	Y N	
E4	A3. recurrent alcohol-related legal problems	Y N	
E5	A4. continued alcohol use despite having problems caused or exacerbated by the effects of alcohol	Y N	
E6	AT LEAST 1 ABUSE ITEM (E2-E5)	Y N	

SCID-CV: Quick Score E. ALCOHOL AND OTHER SUBSTANCE USE

DISORDERS

SCID Question	DSM Criteria: Alcohol Dependence	Meets Criteria	Notes
	A. Maladaptive pattern of alcohol use, leading to clinically significant impairment or distress, as manifested by 3 (or more) of the following, occurring at any time in the same 12-month period		
E7	A3. often taken in larger amounts OR over a longer period than was intended	Y N	
E8	A4. there is a persistent desire OR unsuccessful effort to cut down or control alcohol use	Y N	
E9	A5. a great deal of time is spent in activities necessary to obtain alcohol, use alcohol, or recover from its effects	Y N	
E10	A6. important social, occupational, or recreational activities are given up or reduced because of use	Y N	
E11	A7. continued use despite knowledge of having a persistent or recurrent physical or psychological problems	Y N	
E12	A1. tolerance	Y N	
E13	A2. withdrawal	Y N	
E14	AT LEAST 3 DEPENDENCE ITEMS (E7-E13) OCCURRING WITHIN THE SAME 12-MONTH PERIOD	Y N	
E15	**Alcohol Dependence**	Y N	
E16	**Alcohol Abuse**	Y N	

SCID-CV: Quick Score E. ALCOHOL AND OTHER SUBSTANCE USE DISORDERS

SCID Question	DSM Criteria: Nonalcohol Substance Use Disorders	Meets Criteria	Notes
	CIRCLE THE NAME OF EACH DRUG EVER USED		DOCUMENT HISTORY OF DRUG USAGE
	Sedatives-hypnotics-anxiolytics: Quaalude, Seconal, Valium, Xanax, Librium, barbiturates, Miltown, Ativan, Dalmane, Halcion, Restoril, other (specify)	Y N	
	Cannabis: marijuana, hashish, THC, other (specify)	Y N	
	Stimulants: amphetamine, "speed", crystal meth, dexadrine, Ritalin, "ice", other (specify)	Y N	
	Opioids: heroin, morphine, opium, Methadone, Darvon, codeine, Percodan, Demerol, Dilaudid, unspecified or other (specify)	Y N	
	Cocaine: intranasal, IV, freebase, crack, "speedball", unspecified or other (specify)	Y N	
	Hallucinogens/PCP: LSD, mescaline, peyote, psilocybin, STP, mushrooms, PCP ("angel dust"), Special K (ketamine), Ecstasy, MDMA, other (specify)	Y N	
	Other: steroids, "glue", paint, inhalants, nitrous oxide ("laughing gas"), amyl or butyl nitrate ("poppers"), nonprescription sleep or diet pills, unknown or other (specify)	Y N	

E17	**Drugs with heaviest use / most problems**		

SCID-CV: Quick Score E. ALCOHOL AND OTHER SUBSTANCE USE DISORDERS

SCID Question	DSM Criteria: Nonalcohol Substance Abuse	Meets Criteria	Notes
	A. Maladaptive pattern of substance use leading to clinically significant impairment or distress, as manifested by one (or more) of the following occurring within a 12-month period		
E18	A1. failure to fulfill major role obligations at work, school or home	Y N	
E19	A2. use in situations in which it is physically hazardous	Y N	
E20	A3. recurrent substance-related legal problems	Y N	
E21	A4. continued substance use despite having problems caused or exacerbated by the effects of substance	Y N	
E22	AT LEAST 1 ABUSE ITEM (E18-E21)	Y N	

SCID-CV: Quick Score E. ALCOHOL AND OTHER SUBSTANCE USE DISORDERS

SCID Question	DSM Criteria: Nonalcohol Substance Dependence	Meets Criteria	Notes
	A. Maladaptive pattern of substance use, leading to clinically significant impairment or distress, as manifested by three (or more) of the following, occurring at any time in the same 12-month period		
	A3. often taken in larger amounts OR over a longer		

E23	period than was intended	Y	N	
E24	A4. there is a persistent desire OR unsuccessful effort to cut down or control substance use	Y	N	
E25	A5. a great deal of time is spent in activities necessary to obtain substance, use substance, or recover from its effects	Y	N	
E26	A6. important social, occupational, or recreational activities are given up or reduced because of use	Y	N	
E27	A7. continued use despite knowledge of having a persistent or recurrent physical or psychological problems	Y	N	
E28	A1. tolerance	Y	N	
E29	A2. withdrawal	Y	N	
E30	AT LEAST 3 DEPENDENCE ITEMS (E23-E29) OCCURRING WITHIN THE SAME 12-MONTH PERIOD	Y	N	
E31	**Substance Dependence**	Y	N	
E32	**Substance Abuse**	Y	N	

Appendix D Informed Consent

CONSENT TO PARTICIPATE IN RESEARCH

• INTRODUCTION

You are asked to participate in a research study conducted by Julie Steele, M.S., principal investigator and graduate student from the Psychology Department at the University of New Mexico, entitled **"Eliciting Abstinence and Improving Retention in a Vocational and Educational Training Program for Young People: A Pilot Study."**

The results of this study will contribute to her dissertation. You were selected as a possible participant in this study because you responded to a request by your TEAPS counselor for interested participants who have either tested positive for illicit drugs at the Albuquerque Job Corps Center in your initial drug screen, or were self-referred to the program in your first 7 days at the Job Corps.

• PURPOSE OF THE STUDY

The purpose of this research is to investigate the effect of Motivational Enhancement Therapy (MET) and Contingency Management (CM) in addition to the TEAPS treatment program, specifically looking at therapy attendance, abstinence, and staying in the Job Corps after the probationary period.

• PROCEDURES

After signing the informed consent and the HIPAA authorization form, a demographics questionnaire will be used to collect basic data (name, age, and ethnicity), and then a locator form will be filled out. You will then be given a numerical ID that will be used on questionnaires and drug screen results, and this information will be kept in your therapist's office at the Mental Health Center in a locked file cabinet. All information identifying you by name (the brief screen, demographics, and informed consent) will be kept in a separate locked file cabinet in the office of the Mental Health Director, Dr. Howard M. Ottenheimer.

Next, you will complete three (3) assessments. A time line follow-back interview will be used to collect information on the types and frequency of use of illicit drugs and alcohol, in the past 3 months (approximately 30 minutes). A short form will be used to assess readiness to change substance abuse behaviors (10 minutes). And a final assessment will be done to see how your substance using behaviors may affect other areas of your life (30 minutes). These questionnaires were chosen to assess the degree to which substances are being used, current level of functioning, consequences of use on your life, and motivation to change. **Finally, you will be asked to submit a mouth swab (for alcohol) and urine sample (for illicit drugs).**

After completing the assessments and submitting a urine and mouth swab, you will then be randomized and notified as to which group you will be assigned to, and an appointment for either your first individual therapy session or meeting with a researcher will be scheduled. The total amount of time for this initial assessment is 2 hours, though

it may be shorter or longer. Breaks, snacks, and sodas will be offered during this period, and if you would prefer, it could be completed over two sessions rather than one.

As mentioned during the brief screen, this study consists of a 4 week treatment period, and 50% of participants will receive one (1), 50-minute psychotherapy session each week in addition to their regular required participation in TEAPS. These sessions will be used to better understand your values and motivation for changing your drug using behaviors. This portion of your treatment will be provided by either a master or doctoral level therapist. Please note, audio recording will be used for all MET therapy sessions to make sure the therapist is providing the best care possible and these tapes will be labeled with only your numerical I.D.

A mouth swab (for alcohol) and urine sample (for illicit drugs) will be collected before each session. Everyone in the study is required to submit drug screens and therapy attendance cards on 6 different occasions.

In addition, for those receiving additional weekly therapy, they will receive the added opportunity to win prizes as a reward for weekly abstinence from alcohol and marijuana, and attendance (attending all weekly required TEAPS sessions, group and individual therapy, and the individual MET therapy session). However, for those not assigned to additional weekly therapy sessions, they also will receive opportunities to win prizes simply based on submitting drug tests and attendance cards, regardless of outcome, but they will have fewer opportunities.

After you complete your required drug re-test at the Wellness Center (on approximately day 38 from your entry into the Job Corps), you will then be asked to repeat the same 3 questionnaires, and submit a mouth swab and urine sample within 1 week. In addition, you will be asked to return in 7 weeks from the day of mandatory re-test to repeat the questionnaires, mouth swab, and urine sample. The total amount of time schedule for each is 1 ½ hours for each of those post-assessments, though will most likely be shorter. Regardless of treatment group, you will receive 20 chances to win prizes for completing each follow-up assessment. **The total amount of time you will be connected with this research study is 3 months.**

• **CM WITH PRIZES**

Again, only 50% of the participants in this study will be randomized to receive prizes based on abstinence and therapy attendance, and 50% will receive the opportunity to win prizes simply for submitting drug screens and attendance cards. The process and rules will be fully explained by the assigned therapist or researcher. Briefly, participants who earn an "award" will draw two chips out of a bag and attempt to match any of three colors: two white chips will represent a $1 prize; 2 blue chips a $20 prize; and 2 red chips a $100 prize. **If two chips of different colors are drawn, the individual will not win anything.** This study will use a chip bag that will *always* contain 500 chips in which 405 (81%) are white, 75 (15%) are blue, and 20 (4%) are red, and you must draw two chips in

a row of the same color to win a prize. **The chance of winning a blue or red prize, and therefore winning a $20 prize is 2.25% (about 2 out of 100) and a $100 prize is 0.16% (less than 1 out of 100) for each award, so the chances of winning 'big' are very, very low.**

The average award (where an award is drawing two chips) is $1.27. With an average award of $1.27, and the opportunity to win no more than 84 awards throughout the four week study for the group required to attend additional weekly therapy, the most they could earn, on average, is $106.68 in prizes; and for the group not required to attend additional weekly therapy, the most they could earn is 20 awards and on average, $25.40 in prizes. However, this amount could be more or less depending on how many awards are earned and chance or 'luck'. All prizes will be given out right away, and will be chosen together by the participants and researchers to support a drug-free lifestyle.

• CONFIDENTIALITY

Any information obtained in connection with this study that can be identified with you will remain confidential and will be disclosed only with your permission. In an effort to protect your privacy, employability, and reputation, a Federal Certificate of Confidentiality was issued by the National Institutes of Health (NIH) for this study. This certificate protects sensitive identifiable information, such as drug use behaviors, from being released to any federal, state or local agencies, including Job Corps' employees and administrators as long as the certificate remains in effect. However, it does not protect from information requested to be released by your written consent.

Absolutely no records identifying you by name will be kept with your actual data, questionnaires, urine and/or breathe sample results, and no information with your name on it will be shared with individuals outside of this research project. This information will be kept in a locked file cabinet in your therapist's office. Every effort will be made to sure that nothing you submit or disclose in this research project can or will be used against you (e.g., being forced to exit the program due to a positive urinalysis).

Your name will be replaced by a number that will be your personal identification number. All drug related material pertaining to you will be kept in a secure locked cabinet with only your numerical I.D. and kept separate from all the forms with your actual name. Dr. Ottenheimer will keep all forms with your name on it in a separate locked file cabinet in his office (brief screen, informed consent, and demographics).

The only people that will have access to this research data will be Julie Steele, MS and her supervisors Barbara McCrady, Ph.D., Jane Ellen Smith, Ph.D., G. Will Goodall, Ph.D., and Timothy Goldsmith, Ph.D. Julie Steele and Howard Ottenheimer, Ph.D. are the only people from the Job Corps that will ever see your personal information.

• PARTICIPATION AND WITHDRAWAL

You can choose whether to participate in this study or not. If you volunteer to participate, you may withdraw at any time without penalty or loss of benefits to which you might otherwise be entitled. You may also refuse to answer any questions you do not want to answer and still stay in the study. The investigator may withdraw you from this research if circumstances arise which warrant doing so (e.g., threatening behavior). *By signing this consent form, you are not waiving any legal claims, rights or remedies because of your participation in this research study, and nothing in this study will affect your Job Corps opportunities.*

• POTENTIAL RISKS AND DISCOMFORTS

There is risk involved in participating in this study. While every precaution will be taken to ensure your confidentiality at all times and your name will never be directly connected with any of your actual drug using behaviors, it still might be possible for someone not connected to this study to gain access to your data and identify you, and this may cause difficulties for you, including legal difficulties or expulsion from the Job Corps.

You are not guaranteed to be in the group with 4 individual therapy sessions. However, for those of you assigned to receive weekly MET sessions, they are designed for you to better explore and understand your values, and while doing so you may experience distress. If this occurs, you may request additional consultation with Dr. Ottenheimer or any other therapist available at the Job Corps, or you may reschedule your MET session with no penalty.

Also, due to the duration and intensity of the assessments, you may become bored or restless; therefore you may request a break at any time or complete the assessments over two sessions rather than one. Refreshments will be available.

• POTENTIAL BENEFITS TO PARTICIPANTS AND/OR TO SOCIETY

There are a few potential benefits for your participation in this study. You may find that while exploring your values, you will find greater motivation to change your drug using behaviors, and by making changes, have a better opportunity to remain active at the Job Corps.

You also may appreciate the opportunity to participate in a study that may ultimately affect the type of therapeutic treatment other incoming Job Corp trainees receive who are attempting to overcome their drug using behaviors.

In addition, if you would like a copy of the results of this study, the researcher will be happy to provide one for you at the completion of the study. Beyond these potential benefits, there are no other foreseeable benefits to you.

• IDENTIFICATION OF INVESTIGATORS AND REVIEW BOARD

If you have any questions or concerns about this research, please feel free to contact: Julie M. Steele, MS, Intern/Researcher, Job Corps, Student Development Building, 1500 Indian School Rd. NW, Albuquerque, NM 87104 or call (505) 222-4244. Also, you may reach her at the Department of Psychology, MSC03 2220, 1 University of New Mexico, Albuquerque, NM 87131-0001 (505) 277-9528, jmsteele@unm.edu.

Or

Clinical supervisor, Howard M. Ottenheimer, Ph.D., Mental Health Consultant, Job Corps, Student Development Building, 1500 Indian School Rd. NW, Albuquerque, NM 87104 or call (505) 222-4172.

Or

Barbara McCrady, Ph.D., Dissertation Chair, Department of Psychology, MSC03 2220, 1 University of New Mexico, Albuquerque, NM 87131-0001 or call (505) 277-8857.

If you have other concerns or complaints, please contact the Institutional Review Board at the University of New Mexico, Tim J. Ward, Ph.D., P.E., 1717 Roma NE, Room 205, Albuquerque, NM 87131, (505) 277-2328.

SIGNATURE OF RESEARCH PARTICIPANT

I understand the procedures described above. My questions have been answered to my satisfaction, and I agree to participate in this study. I have been provided a copy of this form.

_____

Name of Participant (please print)

_____

Signature of Participant Date

SIGNATURE OF INVESTIGATOR

In my judgment the participant is voluntarily and knowingly giving informed consent and possesses the legal capacity to give informed consent to participate in this research study

_____

Signature of Investigator or Designee Date

Appendix E Informed Consent for Parent or Guardian

CONSENT FOR MINOR TO PARTICIPATE IN RESEARCH

• INTRODUCTION

Your minor is asked to participate in a research study conducted by Julie Steele, M.S., principal investigator and graduate student from the Psychology Department at the University of New Mexico, entitled **"Eliciting Abstinence and Improving Retention in a Vocational and Educational Training Program for Young People: A Pilot Study."**

The results of this study will contribute to her dissertation. Individuals were selected as possible participants in this study because they responded to a request by the Job Corps' counselor for interested participants who have either tested positive for illicit drugs at the Albuquerque Job Corps Center in their initial drug screen, or were self-referred to the program in their first 7 days at the Job Corps.

• PURPOSE OF THE STUDY

The purpose of this research is to investigate the effect of Motivational Enhancement Therapy (MET) and Contingency Management (CM) in addition to the TEAPS treatment program, specifically looking at therapy attendance, abstinence, and staying in the Job Corps after the probationary period.

• PROCEDURES

After you sign the informed consent and HIPAA authorization form, your minor will then sign a similar form stating they are willing participants in this study. They will then complete a locator form and demographics questionnaire that will be used to collect basic data (name, age, and ethnicity). And at that point your minor will be given a numerical ID that will be used on questionnaires and drug screen results, and this information will be kept in the therapist's office at the Mental Health Center in a locked file cabinet. All information identifying your minor by name (the brief screen, demographics, and informed consent) will be kept in a separate locked file cabinet in the office of the Mental Health Director, Dr. Howard M. Ottenheimer.

Next, your minor will complete three (3) assessments. A time line follow-back interview will be used to collect information on the types and frequency of use of illicit drugs and alcohol, in the past 3 months (approximately 30 minutes). A short form will be used to assess readiness to change substance using behaviors (10 minutes). And a final assessment will be administered to see how their substance using behaviors may affect other areas of your life (30 minutes). These questionnaires were chosen to assess the degree to which substances are being used, current level of functioning, consequences of use on their life, and motivation to change. **Finally, your minor will be asked to submit a mouth swab (for alcohol) and urine sample (for illicit drugs).**

After completing the assessments and submitting a urine and mouth swab, they will then be randomized and notified as to which group they will be assigned to, and an appointment for their first session will be scheduled. The total amount time scheduled

for this initial assessment is 2 hours, though it may be shorter or longer. Breaks, snacks, and sodas will be offered during this period, and if they prefer, the assessment could be completed over two sessions rather than one.

This study consists of a 4 week treatment period, and 50% of participants will receive one (1), 50-minute psychotherapy session each week in addition to their regular required participation in TEAPS. These sessions will be used to better understand your minor's values and motivation for changing their drug using behaviors. This portion of their treatment will be provided by either a master or doctoral level therapist. Please note, audio recording will be used for all MET therapy sessions to make sure the therapist is providing the best care possible and these tapes will be labeled with only your minor's numerical I.D.

A mouth swab (for alcohol) and urine sample (for illicit drugs) will be collected before each session. Everyone in the study is required to submit drug screens and therapy attendance cards on 6 different occasions.

In addition, for those receiving additional weekly therapy, they will receive the added opportunity to win prizes as a reward for weekly abstinence from alcohol and marijuana, and attendance (attending all weekly required TEAPS sessions, group and individual therapy, and the individual MET therapy session). However, for those not assigned to additional weekly therapy sessions, they also will receive opportunities to win prizes simply based on submitting drug tests and attendance cards, regardless of outcome, but they will have fewer opportunities.

After they complete the mandatory drug re-test at the Wellness Center (on approximately day 38 from their entry into the Job Corps), they will then be asked to repeat the same 3 questionnaires, and submit a mouth swab and urine sample within 1 week. In addition, they will be asked to return in 7 weeks from their mandatory re-test to repeat these questionnaires, mouth swab, and urine sample. The total amount of time scheduled for each is 1 ½ hours for the post-assessments, though will be most likely shorter. Regardless of treatment group, your minor will receive 20 chances to win prizes for completing each follow-up assessment. The total amount of time your minor will be connected with this research study is 3 months.

• CM GROUP WITH PRIZES

Again, only 50% of the participants in this study will be randomized to receive prizes based on abstinence and therapy attendance, and 50% will receive the opportunity to win prizes simply for submitting drug screens and attendance cards. The process and rules will be fully explained by the assigned therapist or researcher. Briefly, participants who earn an "award" will draw two chips out of a bag and attempt to match any of three colors: two white chips will represent a $1 prize; 2 blue chips a $20 prize; and 2 red chips a $100 prize. **If two chips of different colors are drawn, the individual will not win anything.** This study will use a chip bag that will *always* contain 500 chips in which 405 (81%) are white, 75 (15%) are blue, and 20 (4%) are red, and they must draw two chips

in a row of the same color to win a prize. **The chance of winning a blue or red prize, and therefore winning a $20 prize is 2.25% (about 2 out of 100) and a $100 prize is 0.16% (less than 1 out of 100) for each award, so the chances of winning 'big' are very, very low.**

The average award (where an award is drawing two chips) is $1.27. With an average award of $1.27, and the opportunity to win no more than 84 awards throughout the four week study for the group required to attend additional weekly therapy, the most they could earn, on average, is $106.68 in prizes; and for the group not required to attend additional weekly therapy, the most they could earn is 20 awards and on average, $25.40 in prizes. However, this amount could be more or less depending on how many awards are earned and chance or 'luck'. All prizes will be given out right away, and will be chosen together by the participants and researchers to support a drug-free lifestyle.

• CONFIDENTIALITY

Any information obtained in connection with this study that can be identified with your minor will remain confidential and will be disclosed only with both your and their permission. In an effort to protect their privacy, employability, and reputation, a Federal Certificate of Confidentiality was issued by the National Institutes of Health (NIH) for this study. This certificate protects sensitive identifiable information, such as drug use behaviors, from being released to any federal, state or local agencies, including Job Corps' employees and administrators as long as the certificate remains in effect. It does not protect from information requested to be released by both you and your minor's written consent.

Absolutely no records identifying your minor by name will be kept with their actual data, questionnaires, urine and/or breathe sample results, and no information with their name on it will be shared with individuals outside of this research project. This information will be kept in a locked file cabinet in their therapist's office. Every effort will be made to be sure that nothing they submit or disclose in this research project can or will be used against them (e.g., being forced to exit the program due to a positive urinalysis).

Their name will be replaced by a number that will be their personal identification number. All drug related material pertaining to your minor will be kept in a secure locked cabinet separate from all the forms with their actual name. Dr. Ottenheimer will keep all forms with their name on it in a separate locked file cabinet in his office (brief screen, informed consent, and demographics).

The only people that will have access to this research data will be, Julie Steele, MS and her supervisors Barbara McCrady, Ph.D., Howard Ottenheimer, Ph.D., Jane Ellen Smith, Ph.D., G. Will Goodall, Ph.D., and Timothy Goldsmith, Ph.D. Howard Ottenheimer, Ph.D. and Julie Steele are the only people from the Job Corps that will ever see your minor's individual data.

• PARTICIPATION AND WITHDRAWAL

You and your minor can choose whether they will participate in this study or not. If they volunteer to participate with your informed consent, they may withdraw at any time without penalty or loss of benefits to which they might otherwise be entitled, and you may choose for them to stop participation at any time with no penalty to your minor. They may also refuse to answer any questions they do not want to answer and still stay in the study. The investigator may withdraw them from this research if circumstances arise which warrant doing so (e.g., threatening behavior). *By signing this consent form, you or they are not waiving any legal claims, rights or remedies because of their participation in this research study, and nothing in this study will affect their Job Corps opportunities.*

• POTENTIAL RISKS AND DISCOMFORTS

There is risk involved in participating in this study. While every precaution will be taken to ensure your minor's confidentiality at all times and their name will never be directly connected with any of their actual drug using behaviors, it still might be possible for someone not connected to this study to gain access to their data and identify them, and this may cause difficulties for them, including legal difficulties or expulsion from the Job Corps.

Your minor also is not guaranteed to be in the group with 4 individual therapy sessions. However, the MET sessions are designed for them to better explore and understand their values, and while doing so they may experience distress. If this occurs, they may request additional consultation with Dr. Ottenheimer or any other therapist available at the Job Corps, or they may reschedule their MET session with no penalty.

Also, due to the duration and intensity of the assessments, they may become bored or restless; therefore they may request a break at any time or complete the assessments over two sessions rather than one. Refreshments will be available.

• POTENTIAL BENEFITS TO PARTICIPANTS AND/OR TO SOCIETY

There are a few potential benefits for their participation in this study. They may find that while exploring their values, they will find greater motivation to change their drug using behaviors, and by making changes, have a better opportunity to remain active at the Job Corps.

They also may appreciate the opportunity to participate in a study that may ultimately affect the type of therapeutic treatment other incoming Job Corp trainees receive who are attempting to overcome their drug using behaviors.

In addition, if you or they would like a copy of the results of this study, the researcher will be happy to provide one at the completion of the study. Beyond these potential benefits, there are no other foreseeable benefits.

• IDENTIFICATION OF INVESTIGATORS AND REVIEW BOARD

If you have any questions or concerns about this research, please feel free to contact: Julie M. Steele, MS, Intern/Researcher, Job Corps, Student Development Building, 1500 Indian School Rd. NW, Albuquerque, NM 87104 or call (505) 222-4244. Also, you may reach her at the Department of Psychology, MSC03 2220, 1 University of New Mexico, Albuquerque, NM 87131-0001 (505) 277-9528, jmsteele@unm.edu.

Or

Clinical supervisor, Howard M. Ottenheimer, Ph.D., Mental Health Consultant, Job Corps, Student Development Building, 1500 Indian School Rd. NW, Albuquerque, NM 87104 or call (505) 222-4172.

Or

Barbara McCrady, Ph.D., Dissertation Chair,. Department of Psychology, MSC03 2220, 1 University of New Mexico, Albuquerque, NM 87131-0001 or call (505) 277-8857

If you have other concerns or complaints, please contact the Institutional Review Board at the University of New Mexico, Tim J. Ward, Ph.D., P.E., 1717 Roma NE, Room 205, Albuquerque, NM 87131, (505) 277-2328.

SIGNATURE OF PARENT/GUARDIAN
I understand the procedures described above. My questions have been answered to my satisfaction, and I give permission for my minor, _____to participate in this study. I have been provided a copy of this form.

_____
Name of Parent/Guardian (please print)

_____
Signature of Parent/Guardian Date

SIGNATURE OF INVESTIGATOR
In my judgment the parent/guardian is voluntarily and knowingly giving informed consent for their minor and possesses the legal capacity to give informed consent for their minor to participate in this research study

_____
Signature of Investigator or Designee Date

Appendix F Informed Assent for Minor

ASSENT TO PARTICIPATE IN RESEARCH

• INTRODUCTION

My name is Julie Steele. I am a graduate student from the Psychology Department at the University of New Mexico, and I am conducting a research study entitled **"Eliciting Abstinence and Improving Retention in a Vocational and Educational Training Program for Young People: A Pilot Study."**

The results of this study will contribute to my dissertation. You were selected as a possible participant in this study because you responded to a request by your TEAPS counselor for interested participants who have either tested positive for illicit drugs at the Albuquerque Job Corps Center in your initial drug screen, or were self-referred to the program in your first 7 days at the Job Corps.

• PURPOSE OF THE STUDY

The purpose of this research is to investigate the effect of Motivational Enhancement Therapy (MET) and Contingency Management (CM) in addition to the TEAPS treatment program, specifically looking at therapy attendance, abstinence, and staying in the Job Corps after the probationary period.

• PROCEDURES

After obtaining your parent or guardian's signature representing their informed consent for you to participate in this study and HIPAA authorization, and your signature on this form representing your voluntary willingness to participate in this study, a demographics questionnaire will be used to collect basic data (name, age, and ethnicity) and locator form will be filled out.

You will then be given a numerical ID that will be used on questionnaires and drug screen results, and this information will be kept in the your therapist's office at the Mental Health Center in a locked file cabinet. All information identifying you by name (the brief screen, demographics, and informed consent) will be kept in a separate locked file cabinet in the office of the Mental Health Director, Dr. Howard M. Ottenheimer.

Next, you will complete three (3) assessments. A time line follow-back interview will be used to collect information on the types and frequency of use of drugs and alcohol, in the past 3 months (approximately 30 minutes). A short form will be used to assess readiness to change substance abuse behaviors (10 minutes). And a final assessment will be done to see how your substance using behaviors may affect other areas of your life (30 minutes). These questionnaires were chosen to assess the degree to which substances are being used, current level of functioning, consequences of use on your life, and motivation to change. **Finally, you will be asked to submit a mouth swab (for alcohol) and urine sample (for illicit drugs).**

After completing the assessments and submitting a urine and mouth swab, you will then be randomized and notified as to which group you will be assigned to, and an appointment for either your first MET session or meeting with a researcher will be scheduled. The total amount time scheduled for this initial assessment is 2 hours, though it may be shorter or longer. Breaks, snacks, and sodas will be offered during this period, and if you would prefer, it could be completed over two sessions rather than one.

As mentioned during the brief screen, this study consists of a 4 week treatment period, and 50% of participants will receive one (1), 50-minute psychotherapy session each week in addition to their regular required participation in TEAPS. These sessions will be used to better understand your values and motivation for changing your drug using behaviors. This portion of your treatment will be provided by either a master or doctoral level therapist. Please note, audio recording will be used for all MET therapy sessions to make sure the therapist is providing the best care possible and these tapes will be labeled with only your numerical I.D.

In addition, for those receiving additional weekly therapy, they will receive the added opportunity to win prizes as a reward for weekly abstinence from alcohol and marijuana, and attendance (attending all weekly required TEAPS sessions, group and individual therapy, and the individual MET therapy session). However, for those not assigned to additional weekly therapy sessions, they also will receive opportunities to win prizes simply based on submitting drug tests and attendance cards, regardless of outcome, but they will have fewer opportunities. Individuals will be **randomly assigned** to treatment groups via a computer program.

After you complete your required drug re-test at the Wellness Center (on approximately day 38 from your entry into the Job Corps), you will then be asked to repeat the same 3 questionnaires, and submit a mouth swab and urine sample within 1 week. In addition, you will be asked to return in 7 weeks from the day of mandatory re-test to repeat the questionnaires, mouth swab, and urine sample. The total amount of time schedule for each is 1 ½ hours for each of those post-assessments, though will most likely be shorter. Regardless of treatment group, you will receive 20 chances to win prizes for completing each follow-up assessment. The total amount of time you will be connected with this research study is 3 months.

• CM GROUP WITH PRIZES

Again, only 50% of the participants in this study will be randomized to receive prizes based on abstinence and therapy attendance, and 50% will receive the opportunity to win prizes simply for submitting drug screens and attendance cards. The process and rules will be fully explained by the assigned therapist or researcher. Briefly, participants who earn an "award" will draw two chips out of a bag and attempt to match any of three colors: two white chips will represent a $1 prize; 2 blue chips a $20 prize; and 2 red chips a $100 prize. **If two chips of different colors are drawn, the individual will not win anything.** This study will use a chip bag that will *always* contain 500 chips in which 405 (81%) are white, 75 (15%) are blue, and 20 (4%) are red, and you must draw two chips in

a row of the same color to win a prize. **The chance of winning a blue or red prize, and therefore winning a $20 prize is 2.25% (about 2 out of 100) and a $100 prize is 0.16% (less than 1 out of 100) for each award, so the chances of winning 'big' are very, very low.**

The average award (where an award is drawing two chips) is $1.27. With an average award of $1.27, and the opportunity to win no more than 84 awards throughout the four week study for the group required to attend additional weekly therapy, the most they could earn, on average, is $106.68 in prizes; and for the group not required to attend additional weekly therapy, the most they could earn is 20 awards and on average, $25.40 in prizes. However, this amount could be more or less depending on how many awards are earned and chance or 'luck'. All prizes will be given out right away, and will be chosen together by the participants and researchers to support a drug-free lifestyle.

• **CONFIDENTIALITY**
Any information obtained in connection with this study that can be identified with you will remain confidential and will be disclosed only with your permission. In an effort to protect your privacy, employability, and reputation, a Federal Certificate of Confidentiality was issued by the National Institutes of Health (NIH) for this study. This certificate protects sensitive identifiable information, such as drug use behaviors, from being released to any federal, state or local agencies, including Job Corps' employees and administrators as long as the certificate remains in effect. It does not protect from information voluntarily released by your written consent.

Absolutely no records identifying you by name will be kept with your actual data, questionnaires, urine and/or breathe sample results, and no information with your name on it will be shared with individuals outside of this research project. This information will be kept in a locked file cabinet in your therapist's office. Every effort will be made to be sure that nothing you submit or disclose in this research project can or will be used against you (e.g., being forced to exit the program due to a positive urinalysis).

Please note, information gathered in this study will not be shared with your parent or guardian without first obtaining your written permission.

Your name will be replaced by a number that will be your personal identification number. All drug related material pertaining to you will be kept in a secure locked cabinet separate from all the forms with your actual name. Dr. Ottenheimer will keep all forms with your name on it in a separate locked file cabinet in his office (brief screen, informed consent, and demographics).

The only people that will have access to this research data will be, Julie Steele, MS and her supervisors Barbara McCrady, Ph.D., Howard Ottenheimer, Ph.D., Jane Ellen Smith, Ph.D., G. Will Goodall, Ph.D., and Timothy Goldsmith, Ph.D. Howard Ottenheimer, Ph.D. and Julie Steele are the only people from the Job Corps that will ever see your individual data.

• PARTICIPATION AND WITHDRAWAL

If you don't want to be in this study, you don't have to participate. Remember, being in this study is up to you and no one will be upset if you don't want to participate or even if you change your mind later and want to stop.

Since you are a minor, your parent or guardian can also require you to withdraw at anytime. The investigator may withdraw you from this research if circumstances arise which warrant doing so (e.g., threatening behavior). *By signing this consent form, you are not waiving any legal claims, rights or remedies because of your participation in this research study, and nothing in this study will affect your Job Corps opportunities.*

Please talk this over with your parents before you decide whether or not to participate. We will also ask your parents to give their permission for you to take part in this study. But even if your parents say "yes", you can still decide not to do this.

You can ask any questions that you have about the study. If you have a question later that you didn't think of now, you can call me *505-362-8765* or ask me next time.

Signing your name at the bottom means that you agree to be in this study. You and your parents will be given a copy of this form after you have signed it.

• POTENTIAL RISKS AND DISCOMFORTS

There is risk involved in participating in this study. While every precaution will be taken to ensure your confidentiality at all times and your name will never be directly connected with any of your actual drug using behaviors, it still might be possible for someone not connected to this study to gain access to your data and identify you, and this may cause difficulties for you, including legal difficulties or expulsion from the Job Corps.

You are not guaranteed to be in the group with 4 individual therapy sessions. However, for those of you assigned to receive weekly MET sessions, they are designed for you to better explore and understand your values, and while doing so you may experience distress. If this occurs, you may request additional consultation with Dr. Ottenheimer or any other therapist available at the Job Corps, or you may reschedule your MET session with no penalty.

You also are not guaranteed to be in the group eligible to win prizes, and therefore the primary potential benefit to you would be 4 individual therapy sessions.

Also, due to the duration and intensity of the assessments, you may become bored or restless; therefore you may request a break at any time or complete the assessments over two sessions rather than one. Refreshments will be available.

• POTENTIAL BENEFITS TO PARTICIPANTS AND/OR TO SOCIETY
There are a few potential benefits for your participation in this study. You may find that while exploring your values, you will find greater motivation to change your drug using behaviors, and by making changes, have a better opportunity to remain active at the Job Corps.

You also may appreciate the opportunity to participate in a study that may ultimately affect the type of therapeutic treatment other incoming Job Corp trainees receive who are attempting to overcome their drug using behaviors.

In addition, if you would like a copy of the results of this study, the researcher will be happy to provide one for you at the completion of the study. Beyond these potential benefits, there are no other foreseeable benefits to you.

• IDENTIFICATION OF INVESTIGATORS AND REVIEW BOARD
If you have any questions or concerns about this research, please feel free to contact: Julie M. Steele, MS, Intern/Researcher, Job Corps, Student Development Building, 1500 Indian School Rd. NW, Albuquerque, NM 87104 or call (505) 222-4244. Also, you may reach her at the Department of Psychology, MSC03 2220, 1 University of New Mexico, Albuquerque, NM 87131-0001 (505) 277-9528, jmsteele@unm.edu.

Or

Clinical supervisor, Howard M. Ottenheimer, Ph.D., Mental Health Consultant, Job Corps, Student Development Building, 1500 Indian School Rd. NW, Albuquerque, NM 87104 or call (505) 222-4172.

Or

Barbara McCrady, Ph.D., Dissertation Chair, Department of Psychology, MSC03 2220, 1 University of New Mexico, Albuquerque, NM 87131-0001 or call (505) 277-8857.

If you have other concerns or complaints, please contact the Institutional Review Board at the University of New Mexico, Tim J. Ward, Ph.D., P.E., 1717 Roma NE, Room 205, Albuquerque, NM 87131, (505) 277-2328.

SIGNATURE OF RESEARCH PARTICIPANT
I understand the procedures described above. My questions have been answered to my satisfaction, and I agree to participate in this study. I have been provided a copy of this form.

_____
Name of Participant (please print)

_____
Signature of Participant Date

SIGNATURE OF INVESTIGATOR

In my judgment the participant is voluntarily and knowingly giving informed assent and has obtained informed consent from there parent or guardian to participate in this research study

_____

Signature of Investigator or Designee Date

Appendix G HIPAA Authorization

UNIVERSITY OF NEW MEXICO
MAIN CAMPUS INSTITUTIONAL REVIEW BOARD
HIPAA[1] AUTHORIZATION TO USE AND DISCLOSE
INDIVIDUAL HEALTH INFORMATION FOR RESEARCH PURPOSES

1. **Authorization.** As a research participant, you authorize Julie M. Steele, MS and the researcher's staff to use and disclose your individual health information for the purpose of conducting the research project entitled **"Eliciting Abstinence and Improving Retention in a Vocational and Educational Training Program for Young People: A Pilot Study."**

2. **Information to be Use or Disclosed.** Your individual health information that may be used or disclosed to conduct the study includes: demographic information, drug use information, and previous medical conditions.

3. **Parties Authorized to Disclose Information.** The researcher and the researcher's staff may obtain your individual health information from: _____

4. **Parties Who May Receive or Use Information.** Your individual health information disclosed by parties listed in item three and information disclosed by you or discovered about you during the course of the research may be received and used by Julie M. Steele, MS and the researcher's staff .

5. **Right to Refuse to Sign this Authorization.** You understand that you do not have to sign this Authorization. If you do not sign, then you will not be allowed to participate in the study or receive any treatment that may be provided through the study. However, your decision not to sign this Authorization will not affect any other treatment, payment, or enrollment in health plans or eligibility for benefits.

6. **Right to Withdraw Authorization.** You understand you can change your mind and withdraw this Authorization at any time by sending a written notice to Julie M. Steele, MS (Job Corps, Student Development Building, 1500 Indian School Rd. NW, Albuquerque, NM 87104) to inform the researcher of your decision. If you withdraw this Authorization, the researcher may only use and disclose individual health information already collected for the study. No additional health information about you will be collected by or disclosed to the researcher for the study.

7. **Potential Re-disclosure.** Your individual health information disclosed under this Authorization may be subject to re-disclosure outside the research study and no longer protected under certain circumstances such as mandated reporting of abuse or neglect, and for health oversight activities and public health purposes.

8. **Suspension of Access to Health Records.** You understand that you may not be allowed to review information collected about you for this study, including information recorded in your medical record, until the study is completed. When the study is over you will have the same rights to access the information as you had before enrolling in the study.

9. **Expiration of Authorization.** This authorization does not have an expiration date.

[1] HIPAA is the Health Insurance Portability and Accountability Act of 1996, a federal law related to privacy of health information.

I am the research participant or the personal representative authorized to act on behalf of the participant. I have read this information, and I understand I will receive a copy of this Authorization when it has been signed.

_____
Name of Subject (type or print)

_____
Name of Legal Representative
(Legal guardian, authorized surrogate under Uniform Health Care Decisions Act)

_____
Describe authority of personal representative to act on behalf of the research subject

_____ _____
Signature of Subject or Legal Representative Date

Appendix H Demographic Questionnaire

Study: Job Corps
ID:
Date:

CASAA Research Division
DEMOGRAPHIC INTERVIEW 2.2—Modified

1. Gender: ___(1) Male ___(2) Female
2. Your Age: _____ Years
3. Where do you live? ___ (1) On-campus ___ (2) Off-campus
4. Ethnic Group (check all that apply)

____(1) American Indian or Alaskan Native
____(2) Asian, Asian-American, or Pacific Islander
____(3) Black or African-American
____(4) Hispanic, Cuban
____(5) Hispanic, Mexican
____(6) Hispanic, New Mexican (or Spanish-American)
____(7) Hispanic, Puerto-Rican
____(8) Hispanic, Other Latin American
____(9) White, not of Hispanic origin
____(0) Some other ethnic group

If Other (0) please specify: _____

Appendix I Locator Form

Study: Job Corps
Name:
Date:

LOCATOR FORM

Please list two individuals that you would feel comfortable for a researcher to contact and request information regarding your location in the event that you leave the Job Corps before the end of this study (3 months from today). Either one or both of these individuals would be contacted and the only statement that would be made is the following:

"Hello, my name is (researcher's first name) and I work with the Job Corps. (Your name) gave me permission to contact you regarding getting back in touch with him/her for some follow-up information. Would you please ask (your name) to contact me as soon as possible, my number is 505-362-8765, thank you!"

No additional information would be shared.

1.) Name:
Address:

Telephone Number:
E-mail:

2.) Name:
Address:

Telephone Number:
E-mail:

Appendix J Name-Identification Number Form

NAME-NUMERICAL I.D. FORM

Participant's Name:

Identification Number:

Assigned Therapist: □ Julie Steele □ Kathy Wiggins

Assigned Treatment Group: □ MET+CM+ST □ ST

Appendix K Drug Screen Results Card

DRUG SCREEN RESULTS CARD

Participant's Numerical I.D: _____

Date: _____

Week: □ 0, □ 1, □ 2, □3, □4, or □12
Urine Test: □ Negative for marijuana

□ Positive for marijuana

Mouth Swab: □ Negative for alcohol

□ Positive for alcohol
Therapist/Researcher Signature:

Appendix L Form 90-DI/Form 90-DF

CASAA Research Division

FOR OFFICE USE ONLY
_____Study
_____ID
_____Point
_____Date
_____Raid
F9D000- Revised 8/1/95 10 Pages

Form 90-DI

DRUG USE ASSESSMENT (Intake)

1. For period from ____/_____/____ through ____/_____/____

2. Number of days in this assessment period: ____/____/____

3. This is: (0) Pretreatment

4. __(1) Male __(2) Female

5. Current body weight in pounds:____/____/____

6. Weight was obtained by: __(1) weighing or __(2) self-report

7. This interview was conducted:

__(1) on site __(2) by telephone
__(3) home visit __(4) other location

8. Presenting drug _____

"I'd like to begin by reminding you that whatever you say here is confidential. In this first interview, I am going to be asking you some specific questions about your drug use in the 90 days before your last use. I'll be asking about drugs that were prescribed for you as well as others that you have used during this period. [Place calendar in front of client.] Here is a calendar to help you remember this period of time. First of all, when was the last time that you used any drug? **[Drug is as defined above; count back 89 days and cross out with Xs the days preceding this period.]** *So the period I'm going to be asking you about is from* **[beginning date,]** *up through* **[end date].***"*

"I realize that this is a long period of time to remember things that happened, so we will use this calendar to help you identify events that occurred during this period. Notice that a few events are already printed on the calendar. **[Point out some specific events already printed on the calendar.]** *Were there any particularly memorable things that happened during this time - any birthdays, illnesses or accidents, anniversaries, parties, hospitalizations, vacations, changes in your work or at home, things like that?"* **[Record on calendar.]**

"Now, the rest of the questions that I will ask you are also about this time period, from _____ up through _____. I'll be asking you about your drug use in a few minutes, but first I'd like to know about a few other things. Feel free to take your time in answering, since it is important for you to remember as accurately as you can. Let me know if you're not sure what I am

Form 90-DI: Page 2

asking, or what I mean by a particular question. OK?"

TREATMENT / INCARCERATION / LIVING EXPERIENCES

"During this period, how many days did you spend in a hospital or treatment program where you stayed overnight?" **[Mark days on calendar]**

Hm **total number of hospital days for medical problems** 8._____

Htox **total number of hospital days for detoxification** 9._____

Rtox **total number of non-hospital residential detox days:** 10._____

total number of ambulatory detox treatment days: 11._____

Rd **total number of residential days for other drug problems** 12. _____

Ra **total number of residential days alcohol treatment** 13._____

Rp **total residential days for emotional/psych problems** 14._____

Total days in residential treatment during this period: [Sum of 8 + 9 + 10 + 12 + 13 + 14. Do not include 11] 15._____

"During this period, did you spend any time in jail or prison?" **[Mark days on calendar]**

In **total days incarcerated during period** 16._____

Total days in institutions **[add 15 + 16]** 17._____

"During this period, where did you live? How many days did you live in:" **[Do not record on calendar unless useful as memory aids.]**

Total number of days in own house, apartment, room: 18._____

Total number of days living with others (no rent): 19._____

Total number of days living in halfway house: 20._____

Total number of days homeless (shelters, etc.): 21._____

Lines 17 + 18 + 19 + 20 + 21 must equal Line 2

Form 90-DI: Page 4

OTHER ACTIVITIES

[Do not enter activity days on the calendar unless they appear to be of value for recalling drinking.]

WORK: *"How many days have you been paid for working during this period?"* **WORK days** 27._____

EDUCATION: *"How many days have you been in school or training during this period?"*
EDUCATION days 28. _____

RELIGIOUS ATTENDANCE: *"On how many days during this time did you attend a worship service or other religious celebration?"*

RELIGIOUS ATTENDANCE days 29._____

MEDICATIONS

"During this period, on how many days did you take any medications prescribed by a physician?" **[Do not enter medication days on the calendar unless they appear to be of memory value.]**

to treat a medical problem 30._____
specify:

to prevent you from drinking **(Antabuse only)** 31._____

to help you detoxify/come off drugs or alcohol 32._____
specify:

to help you stabilize or change your use of drugs 33._____
specify:
maintaining/stabilizing drugs (e.g., methadone)
serotonin uptake inhibitors (make sure not for depression)

to help you keep from using drugs 34._____
specify:
drug antagonists/blockers

for psychological or emotional problems 35._____

Form 90-DI: Page 4

OTHER ACTIVITIES

[Do not enter activity days on the calendar unless they appear to be of value for recalling drinking.]

WORK: *"How many days have you been paid for working during this period?"* **WORK days** 27._____

EDUCATION: *"How many days have you been in school or training during this period?"*
EDUCATION days 28. _____

RELIGIOUS ATTENDANCE: *"On how many days during this time did you attend a worship service or other religious celebration?"*

RELIGIOUS ATTENDANCE days 29._____

MEDICATIONS

"During this period, on how many days did you take any medications prescribed by a physician?" **[Do not enter medication days on the calendar unless they appear to be of memory value.]**

to treat a medical problem 30._____
specify:

to prevent you from drinking **(Antabuse only)** 31._____

to help you detoxify/come off drugs or alcohol 32._____
specify:

to help you stabilize or change your use of drugs 33._____
specify:
maintaining/stabilizing drugs (e.g., methadone)
serotonin uptake inhibitors (make sure not for depression)

to help you keep from using drugs 34._____
specify:
drug antagonists/blockers

for psychological or emotional problems 35._____

specify:

Form 90-DI: Page 6

DRUG ASSESSMENT

Card Sort

"Now I am going to show you this set of cards. Each card names a kind of drug that people sometimes use. I'd like you to sort them into two piles for me. In one pile here (indicate position and use marker card) I'd like you to place those cards that name a kind of drug that you have tried at least once in your life. In the other pile (indicate position and use marker card), place the cards that name the types of drugs that you have never used at all."

[Give cards to client IN NUMERICAL ORDER - with Alcohol on top, Tobacco next, Marijuana next, and so on. When the sorting has been completed, take the pile on the right, and check all these categories as "NO" in the LIFETIME USE column below. For convenience, record here the client's CURRENT AGE: _____

DRUG TYPE	Lifetime Use Ever?	Age at First Use	Lifetime weeks of Use
Alcohol (al)	( ) 0 No ( ) 1 Yes		
Tobacco (to)	( ) 0 No ( ) 1 Yes		
Marijuana/Cannabis (ma)	( ) 0 No ( ) 1 Yes		
Tranquilizers (tr)	( ) 0 No ( ) 1 Yes		
Sedatives/Downers (do)	( ) 0 No ( ) 1 Yes		
Steroids (sd)	( ) 0 No ( ) 1 Yes		
Stimulants/Uppers (up)	( ) 0 No ( ) 1 Yes		
Cocaine (co)	( ) 0 No ( ) 1 Yes		
Hallucinogens (ha)	( ) 0 No ( ) 1 Yes		
Opiates (op)	( ) 0 No ( ) 1 Yes		
Inhalants (in)	( ) 0 No ( ) 1 Yes		
Other Drugs (xx)	( ) 0 No ( ) 1 Yes		
	Total Yes:		xxxxxxx

Then continue with the "Yes" pile:

"Now for each of these types of drugs, I'd like you to give me an estimate of how long you have used them in your lifetime. What I will want to know is: about how many weeks during your lifetime have you used each type of drug at least once. Let's start with _____ **[Use first YES card from numerical sequence].** *How many weeks, during your lifetime, would you say that you used _____ at least once?"*

Record responses on the chart on Page 5. Convert all responses into weeks. Year = 52 weeks if used every week. Month = 4 weeks. etc. Repeat the query for each

YES drug card. Then give YES pile back to client.]

Periods of Abstinence

> ***"Now I'd like to ask you about your drug use during this same period we were discussing before. The things already recorded on the calendar here may help you to remember better. I'm not asking here about drugs that were prescribed for you for medical problems, like antibiotics, stomach or blood pressure medicine. I'm asking about drugs not prescribed for you, although I do want to know about any medication prescribed for pain, or to help you relax or sleep. I will also ask you about your use of alcohol. First of all, were there any periods of days during this time when you used no drugs (including alcohol) at all?"***

[Mark all abstinent days with a capital "A" on calendar.]

36. Date of first drug use during period: _____/_____/_____

Drug: _____

37. Date of last drug use during period: _____/_____/_____

Drug: _____

Give back the YES pile and say:

> ***"Now I'd like you to sort these cards again, to say which kinds of drugs you have used at least once during the period we've been talking about on this calendar, from _____ up through _____. If you used the drug at least once during this time, put it in a pile on the left here, and if you never used it at all during this period, put it on the right."***
> **[Alternatively, if there are few cards, simply ask: *"Which of these have you used at least once during this period we've been talking about?"*]**

For each NO card in this sort, print a zero (0) under "Total Days Use in Period" on the USE PATTERN CHART on Page 7. For the remainder, proceed with the CALENDAR instructions on Page 8.

Form 90-DI: Page 8

USE PATTERN CHART

Drug Classes		Used in this period? Y/N	1	2	3	Total Days	Route of Use: Oral Ingest	Smoke	Nasal Inhale	Needle	Other
Alcohol	al							----	----	----	
Marijuana/ Cannabis	ma									----	
Tranquilizers	tr							----	----		
Sedatives/ Downers	do							----	----		
Steroids	sd							----	----		
Stimulants/ Uppers	up										
Cocaine	co										
Hallucinogens	ha										
Opiates	op										
Inhalants	in						----	----		----	
Other Drugs	xx										
Totals	11										
Tobacco	to									----	

Use Categories: 1 = Single use 2 = Several uses 3 = Steady or heavier use

Enter days of each type of use. 1+2+3 must equal Total Days of use.

Enter days of each route of administration (use rules from manual). These must total at least to the number of days of use, but total may be higher if multiple routes of administration were used on the same day.

If OTHER route of administration, specify drug(s) and route here:

"Now I'd like to ask you about each of the drugs that you have used during this period. I'd want to get an idea of what your pattern of use was during this period of time for each of these drugs. We'll use this calendar to make it easier. Let's start with _____. When were you using _____ during this period?

Proceed drug by drug, entering drug codes for each day of use. For a day on which alcohol, marijuana, and cocaine were used, for example, three codes would be entered into the box for that day: al, ma, co. Using different colored pencils for different drugs can be helpful.

Using the calendar, carefully count the total number of days of use during the assessment period for each drug class, and put this information on the USE PATTERN CHART (Page 5).

"Now I'm going to go back through these drugs once again and ask you two more questions about each. For each one, I will tell you the total number of days that you said you used the drug during this period, and I will want to know how many of those days you think fell into each of these three categories." **(Show use categories)**

"According to the calendar we did, you used _____ on a total of _____ days during this period. Help me divide those days up among these three categories. On how many of those _____ days would you say that you used _____ only once? How many of those days did your use fall in between? And that would mean that on _____ days your use of _____ fell in this third category - does that seem right? And how did you give yourself (take) _____ during this period time we have been talking about? Any other way? **If more than one route of administration for a drug class, ask:**

"According to the calendar we did, you used _____ on a total of _____ days during this period. On how many of those _____ days would you say that you gave yourself __**[drug]**___ *by* ___**[route]**___*?*

Repeat for each drug class. Be sure you have accounted for all days of use. The total across routes of administration should be at least the same as the number of days of use, although the total may be higher if multiple routes are used on the same day.

Fill in the information on the Use Pattern Chart. Be sure 1+2+3 totals to the number of days of use.

Form 90-DI: Page 10

When you have completed the calendar for all drug classes used, show the subject the CONFIDENCE SCALE and ask:

> ***"Now I'd like you to tell me, using this line, how confident you feel about the information you've given me about your drug use. How accurate do you think you have been in estimating your drug use on this calendar? I'm not asking if you got each drug on the exact days you used it. But overall, how accurate is this calendar in showing <u>how much</u> you used drugs during this period?***

Circle the subject's response below.

5	4	3	2	1
Very Accurate		**Fairly Accurate**		**Not at all Accurate**

CATEGORIES FOR DAYS OF USE

(1) Single use. On this day you used the drug only once.

Examples: One alcoholic drink
One cigarette
One dose

(2) Medium use. On this day you used the drug more than once, but not steadily or heavily.

Examples: 2-4 drinks
2-9 cigarettes
Two doses of other drugs

(3) Heavier use. On this day you used the drug more heavily than the "medium" category

Examples: 5 or more drinks
10 or more cigarettes (half a pack or more)
Three or more doses of other drugs

WAYS OF TAKING DRUGS

Orally	**Eating, drinking, swallowing, placing the drug under the tongue, chewing, dipping**
Smoking	**Lighting and smoking the drug**
Inhaling	**Snorting, breathing in the drug (but not smoking)**
Injecting	**Taking a drug by needle; injecting under the skin or into a vein**

CONFIDENCE SCALE

5	4	3	2	1
Very Accurate		**Fairly Accurate**		**Not at all Accurate**

CASAA Research Division

FOR OFFICE USE ONLY
_____Study
_____ID
_____Point
_____Date
_____Raid
F9DOFU-- Revised 4/18/95 9 Pages

Form 90-DF

DRUG USE ASSESSMENT (Follow up)

1. For period from ____/_____/____ through ____/_____/____

2. Number of days in this assessment period: ____/____/____

3.This is: _____ month follow up

4. __(1) Male __(2) Female

5. Current body weight in pounds:____/____/____

6. Weight was obtained by: __(1) weighing or __(2) self-report

7. This interview was conducted:

__(1) on site __(2) by telephone
__(3) home visit __(4) other location

"Now, as in the interview(s) you've had before, I'd like to remind you that whatever you say here is confidential. I am going to be asking you some specific questions about your drug use in the time period from _____ up through yesterday. I'll be asking about drugs that were prescribed for you as well as others that you have used during this period. [Place calendar in front of client.] Here is a calendar to help you remember this period of time.
"I realize that this is a long period of time to remember things that happened, so we will use this calendar to help you identify events that occurred during this period. As before there are some events already printed on the calendar. Were there any particularly memorable things that happened during this time - any birthdays, accidents, anniversaries, parties, things like that?" **[Record on calendar.]**

"Now, the rest of the questions that I will ask you are also about this time period, from _____ up through yesterday. I'll be asking you about your drug use in a few minutes, but first I'd like to know about a few other things. Feel free to take your time in answering, since it is important for you to remember as accurately as you can. Let me know if you're not sure what I am asking, or what I mean by a particular question. OK?"

Form 90-DF: Page 2

TREATMENT / INCARCERATION / LIVING EXPERIENCES

"During this period, how many days did you spend in a hospital or treatment program where you stayed overnight?" **[Mark days on calendar]**

Hm **Total number of hospital days for medical problems** 8._____

Htox **Total number of hospital days for detoxification** 9._____

Rtox **Total number of non-hospital residential detox days:** 10._____

Total number of ambulatory detox treatment days: 11._____

Rd **Total number of residential days for non-alcohol drug problems** 12._____

Ra **Total number of residential days alcohol treatment** 13._____

Rp **Total residential days for emotional/psych problems** 14._____

Total days in residential treatment during this period: [Sum of 8 + 9 + 10 + 12 + 13 + 14. *Do not include 11*] 15._____

"During this period, did you spend any time in jail or prison?" **[Mark days on calendar]**

In **Total days incarcerated during period** 16._____

Total days in institutions [add 15 + 16] 17._____

"During this period, where did you live? How many days did you live in:" **[Do not record on calendar unless useful as memory aids.]**

Total number of days in own house, apartment, room: 18._____

Total number of days living with others (no rent): 19._____

Total number of days living in halfway house: 20._____

Total number of days homeless (shelters, etc.): 21._____
Lines 17 + 18 + 19 + 20 + 21 must equal Line 2

"During this period, how many days were there [not including hospital or detox days]
when you saw a doctor, nurse, nurse-practitioner, or physician's assistant for any kind of
medical care?" **[Do not record on calendar unless useful as memory aids.]**

Total days seen for medical care **22.____**

"During this period, on how many days did you have a session with a counselor or therapist?" **[Do not record on calendar unless useful as memory aids.]**

Total number of days for drug problems (EXCEPT alcohol)
Write down the drug or drugs _____ **23.____**
_____

If treatment was received, describe briefly:

Total number of days for alcohol problems **24.____**

If treatment was received, describe briefly:

Total days for emotional/psychological problems **25.____**

If treatment was received, describe briefly:

"During this period, on how many days did you attend a Twelve-Step meeting like NA, CA, or AA?"
[Do not record on calendar unless useful as memory aids.]

Total number of days attending 12-step meetings: **26.____**
[enter 0 if none]

Form 90-DF: Page 4

OTHER ACTIVITIES

[Do not enter activity days on the calendar unless they appear to be of value for recalling drug use.]

WORK: *"How many days have you been paid for working during this period?"* **WORK days**
27._____

EDUCATION: *"How many days have you been in school or training during this period?"*
EDUCATION days **28.**____

RELIGIOUS ATTENDANCE: *"On how many days during this time did you attend a worship service or other religious celebration?"*
RELIGIOUS ATTENDANCE days **29.**____

MEDICATIONS

"During this period, on how many days did you take any medications prescribed by a physician?" **[Do not enter medication days on the calendar unless they appear to be of memory value.]**

to treat a medical problem **30.**____
specify:

to prevent you from drinking **(Antabuse only)** **31.**____

to help you detoxify/come off drugs or alcohol **32.**____
specify:

to help you stabilize or change your use of drugs **33.**____
specify:
maintaining/stabilizing drugs (e.g., methadone)
serotonin uptake inhibitors (make sure not for depression)

to help you keep from using drugs **34.**____
specify:
drug antagonists/blockers

for psychological or emotional problems **35.**_____

specify:

Form 90-DF: Page 6

DRUG ASSESSMENT

Periods of Abstinence

"Now I'd like to ask you about your drug use during this period. The things already recorded on the calendar here may help you to remember better. I'm not asking here about drugs that were prescribed for you for medical problems, like antibiotics, stomach or blood pressure medicine. I'm asking about drugs not prescribed for you, although I do want to know about any medication prescribed for pain, or to help you relax or sleep. I will also ask you about your use of alcohol. First of all, were there any periods of days during this time when you used no drugs (including alcohol) at all?"

[Mark all abstinent days with a capital "A" on calendar.]

36. Date of first drug use during period: _____/_____/_____

Drug: _____

37. Date of last drug use during period: _____/_____/_____

Drug: _____

Card Sort

"Now I'd like you to sort these cards again, to say which kinds of drugs you have used at least once during this period. If you used the drug at least once during this time, put it in a pile on the left here, and if you never used it at all during this period, put it on the right." **[Alternatively, if there are few cards, simply ask:** *"Which of these have you used at least once during this period we've been talking about?"***]**

For each NO card in this sort, print a zero (0) under "Used in this period" on the USE PATTERN CHART on Page 6. For the remainder, proceed with the CALENDAR instructions on Page 7.

Form 90-DF: Page 7

USE PATTERN CHART

Drug Classes		Used in this period ?	Total Days	1	2	3	Oral Ingest	Smoke	Nasal Inhale	Needle	Other
Alcohol	al							----	----	----	
Tobacco	to									----	
Marijuana/ Cannabis	ma									----	
Tranquilizers	tr							----	----		
Sedatives/ Downers	do							----	----		
Steroids	sd							----	----		
Stimulants/ Uppers	up										
Cocaine	co										
Hallucinogens	ha										
Opiates	op										
Inhalants	in						----	----		----	
Other Drugs	xx										
Totals	12										

Enter days of each type of use. 1+2+3 must equal Total Days of use.

Enter days of each route of administration (use rules from manual). These must total at least to the number of days of use, but total may be higher if multiple routes of

administration were used on the same day.

If OTHER route of administration, specify drug(s) and route here:

"Now I'd like to ask you about each of the drugs that you have used during this period. I want to get an idea of what your pattern of use was during this period of time for each of these drugs. We'll use this calendar to make it easier. Let's start with _____. When were you using _____ during this period?

Proceed drug by drug, entering drug codes for each day of use. For a day on which alcohol, marijuana, and cocaine were used, for example, three codes would be entered into the box for that day: al, ma, co. Using different colored pencils for different drugs can be helpful.

Using the calendar, carefully count the total number of days of use during the assessment period for each drug class, and put this information on the USE PATTERN CHART (Page 6).

"Now I'm going to go back through these drugs once again and ask you two more questions about each. For each one, I will tell you the total number of days that you said you used the drug during this period, and I will want to know how many of those days you think fell into each of these three categories." **(Show use categories)**

"According to the calendar we did, you used _____ on a total of _____ days during this period. Help me divide those days up among these three categories. On how many of those _____ days would you say that you used _____ only once? How many of those days did your use fall in between? And that would mean that on _____ days your use of _____ fell in this third category - does that seem right? And how did you give yourself (take) _____ during this period of time we have been talking about? Any other way? **If more than one route of administration for a drug class, ask:**

"According to the calendar we did, you used _____ on a total of _____ days during this period. On how many of those _____ days would you say that you gave yourself **__[drug]___** *by* **___[route]___***?*

Repeat for each drug class. Be sure you have accounted for all days of use. The total across routes of administration should be at least the same as the number of days of use, although the total may be higher if multiple routes are used on the same day.

Fill in the information on the Use Pattern Chart. Be sure 1+2+3 totals to the number of days of use.

When you have completed the calendar for all drug classes used, show the subject the CONFIDENCE SCALE and ask:

> ***"Now I'd like you to tell me, using this line, how confident you feel about the information you've given me about your drug use. How accurate do you think you have been in estimating your drug use on this calendar? I'm not asking if you got each drug on the exact days you used it. But overall, how accurate is this calendar in showing <u>how much</u> you used drugs during this period?***

Circle the subject's response below.

5	4	3	2	1
Very Accurate		**Fairly Accurate**		**Not at all Accurate**

Form 90-DF: Page 10

CATEGORIES FOR DAYS OF USE

(1) Single use. On this day you used the drug only once.

Examples: One alcoholic drink
One cigarette
One dose

(2) Medium use. On this day you used the drug more than once, but not steadily or heavily.

Examples: 2-4 drinks
2-9 cigarettes
Two doses of other drugs

(3) Heavier use. On this day you used the drug more heavily than the "medium" category.

Examples: 5 or more drinks
10 or more cigarettes (half a pack or more)
Three or more doses of other drugs

WAYS OF TAKING DRUGS

Orally	**Eating, drinking, swallowing, placing the drug under the tongue, chewing, dipping**
Smoking	**Lighting and smoking the drug**
Inhaling	**Snorting, breathing in the drug (but not smoking)**
Injecting	**Taking a drug by needle; injecting under the skin or into a vein**

CONFIDENCE SCALE

5	4	3	2	1
Very Accurate		**Fairly Accurate**		**Not at all Accurate**

Appendix M SOCRATES 7DS/ 7AS

CASAA Research Division*

Personal Drug Use Questionnaire (SOCRATES 7DS)

FOR OFFICE USE ONLY
_____Study
_____ID
_____Point
_____Date
_____Raid
SOCDS- Revised 8/94 2 Pages

INSTRUCTIONS: Please read the following statements carefully. Each one describes a way that you might (or might not) feel about your drug use. For each statement, circle one number from 1 to 5, to indicate how much you agree or disagree with it right now. Please circle one and only one number for every statement.

	Strongly Disagree	Disagree	Undecided or Unsure	Agree	Strongly Agree
1. I really want to make changes in my use of drugs.	1	2	3	4	5
2. Sometimes I wonder if I am an addict.	1	2	3	4	5
3. If I don't change my drug use soon, my problems are going to get worse.	1	2	3	4	5
4. I have already started making some changes in my use of drugs.	1	2	3	4	5
5. I was using drugs too much at one time, but I've managed to change that.	1	2	3	4	5
6. The only reason I'm here is that somebody made me come.	1	2	3	4	5
7. Sometimes I wonder if my drug use is hurting other people.	1	2	3	4	5
8. I have a drug problem.	1	2	3	4	5
9. I'm not just thinking about changing my drug use, I'm already doing something about it.	1	2	3	4	5
10. I have already changed my drug use, and I am looking for ways to keep from slipping back to my old pattern.	1	2	3	4	5
11. I have serious problems with drugs.	1	2	3	4	5
12. Sometimes I wonder if I am in control of my drug use.	1	2	3	4	5

	Strongly Disagree	Disagree	Undecided or Unsure	Agree	Strongly Agree
13. My drug use is causing a lot of harm.	1	2	3	4	5
14. I am actively doing things now to cut down or stop my use of drugs.	1	2	3	4	5
15. I want help to keep from going back to the drug problems that I had before.	1	2	3	4	5
16. I know that I have a drug problem.	1	2	3	4	5
17. There are times when I wonder if I use drugs too much.	1	2	3	4	5
18. I am a drug addict.	1	2	3	4	5
19. I am working hard to change my drug use.	1	2	3	4	5
20. I have made some changes in my drug use, and I want some help to keep going.	1	2	3	4	5

CASAA Research Division*

FOR OFFICE USE ONLY
_____Study
_____ID
_____Point
_____Date
_____Raid
SOCDAS- Revised 8/04 2 Pages

Personal Drinking Questionnaire (SOCRATES 7AS)

INSTRUCTIONS: Please read the following statements carefully. Each one describes a way that you might (or might not) feel about your drinking. For each statement, circle one number from 1 to 5, to indicate how much you agree or disagree with it right now. Please circle one and only one number for every statement.

	Strongly Disagree	Disagree	Undecided or Unsure	Agree	Strongly Agree
1. I really want to make changes in my drinking.	1	2	3	4	5
2. Sometimes I wonder if I am an alcoholic.	1	2	3	4	5
3. If I don't change my drinking soon, my problems are going to get worse.	1	2	3	4	5
4. I have already started making some changes in my drinking.	1	2	3	4	5
5. I was drinking too much at one time, but I've managed to change my drinking.	1	2	3	4	5
6. The only reason I'm here is that somebody made me come.	1	2	3	4	5
7. Sometimes I wonder if my drinking is hurting other people.	1	2	3	4	5
8. I am a problem drinker.	1	2	3	4	5
9. I'm not just thinking about changing my drinking, I'm already doing something about it.	1	2	3	4	5
10. I have already changed my drinking, and I am looking for ways to keep from slipping back to my old pattern.	1	2	3	4	5
11. I have serious problems with drinking.	1	2	3	4	5

12. Sometimes I wonder if I am in control of my drinking.	1	2	3	4	5
13. My drinking is causing a lot of harm.	1	2	3	4	5
14. I am actively doing things now to cut down or stop drinking.	1	2	3	4	5
15. I want help to keep from going back to the drinking problems that I had before.	1	2	3	4	5
16. I know that I have a drinking problem.	1	2	3	4	5
17. There are times when I wonder if I drink too much.	1	2	3	4	5
18. I am an alcoholic.	1	2	3	4	5
19. I am working hard to change my drinking.	1	2	3	4	5
20. I have made some changes in my drinking, and I want some help to keep from going back to the way I used to drink.	1	2	3	4	5

Appendix N ASI-Lite

Addiction Severity Index *Lite* - CF

Clinical/Training Version

Thomas McLellan, Ph.D.
John Cacciola, Ph.D.
Deni Carise, Ph.D.
Thomas H. Coyne, MSW

Remember: This is an interview, not a test

~Item numbers circled are to be asked at follow-up.~
~Items with an asterisk are cumulative and should be rephrased at follow-up.~*
~Items in a double border gray box are questions for the interviewer. Do not ask these questions of the client.~

INTRODUCING THE ASI: Seven potential problem areas: Medical, Employment/Support Status, Alcohol, Drug, Legal, Family/Social, and Psychological. All clients receive this same standard interview. All information gathered is confidential.
There are two time periods we will discuss:
1. The past 30 days
2. Lifetime Data

Patient Rating Scale: Patient input is important. For each area, I will ask you to use this scale to let me know how bothered you have been by any problems in each section. I will also ask you how important treatment is for you for the area being discussed.
The scale is:
0 - Not at all
1 - Slightly
2 - Moderately
3 - Considerably
4 - Extremely
If you are uncomfortable giving an answer, then don't answer.
Please do not give inaccurate information!

INTERVIEWER INSTRUCTIONS:
1. Leave no blanks.
2. Make plenty of Comments (if another person reads this ASI, they should have a relatively complete picture of the client's perceptions of his/her problems).
3. X = Question not answered.
   N = Question not applicable.
4. Terminate interview if client misrepresents two or more sections.
5. When noting comments, please write the question number.
6. Tutorial/clarification notes are preceded with "•".

HALF TIME RULE: If a question asks the number of months, round up periods of 14 days or more to 1 month. Round up 6 months or more to 1 year.

CONFIDENCE RATINGS: ⇒ Last two items in each section.
➡ Do not over interpret.
⇒ Denial does not warrant misrepresentation.
➡ Misrepresentation = overt contradiction in information.
Probe and make plenty of comments!

HOLLINGSHEAD CATEGORIES:
1. Higher execs, major professionals, owners of large businesses.
2. Business managers if medium sized businesses, lesser professions, i.e., nurses, opticians, pharmacists, social workers, teachers.
3. Administrative personnel, managers, minor professionals, owners/proprietors of small businesses, i.e., bakery, car dealership, engraving business, plumbing business, florist, decorator, actor, reporter, travel agent.
4. Clerical and sales, technicians, small businesses (bank teller, bookkeeper, clerk, draftsman, timekeeper, secretary).
5. Skilled manual - usually having had training (baker, barber, brakeman, chef, electrician, fireman, lineman, machinist, mechanic, paperhanger, painter, repairman, tailor, welder, policeman, plumber).
6. Semi-skilled (hospital aide, painter, bartender, bus driver, cutter, cook, drill press, garage guard, checker, waiter, spot welder, machine operator).
7. Unskilled (attendant, janitor, construction helper, unspecified labor, porter, including unemployed).
8. Homemaker.
9. Student, disabled, no occupation.

LIST OF COMMONLY USED DRUGS:

Alcohol:	Beer, wine, liquor
Methadone:	Dolophine, LAAM
Opiates:	Pain killers = Morphine, Dilaudid, Demerol, Percocet, Darvon, Talwin, Codeine, Tylenol 2,3,4, Syrups = Robitussin, Fentanyl
Barbiturates:	Nembutal, Seconal, Tuinal, Amytal, Pentobarbital, Secobarbital, Phenobarbital, Fiorinal
Sed/Hyp/Tranq:	Benzodiazepines = Valium, Librium, Ativan, Serax Tranxene, Dalmane, Halcion, Xanax, Miltown, Other = Chloral Hydrate, Quaaludes
Cocaine:	Cocaine Crystal, Free-Base Cocaine or Crack, and "Rock Cocaine"
Amphetamines:	Monster, Crank, Benzedrine, Dexedrine, Ritalin, Preludin, Methamphetamine, Speed, Ice, Crystal
Cannabis:	Marijuana, Hashish
Hallucinogens:	LSD (Acid), Mescaline, Psilocybin (Mushrooms), Peyote, Green, PCP (Phencyclidine), Angel Dust, Ecstacy
Inhalants:	Nitrous Oxide (Whippits), Amyl Nitrite (Poppers), Glue, Solvents, Gasoline, Toluene, Etc.

Just note if these are used: Antidepressants,
Ulcer Meds = Zantac, Tagamet
Asthma Meds = Ventolin Inhaler, Theodur
Other Meds = Antipsychotics, Lithium

ALCOHOL/DRUG USE INSTRUCTIONS:
The following questions look at two time periods: the past 30 days and lifetime. Lifetime refers to the time prior to the last 30 days. However if the client has been incarcerated for more than 1 year, you would only gather lifetime information, unless the client admits to significant alcohol /drug use during incarceration. This guideline only applies to the Alcohol/Drug Section.
⇒30 day questions only require the number of days used.
⇒Lifetime use is asked to determine extended periods of use.
⇒Regular use = 3+ times per week, binges, or problematic irregular use in which normal activities are compromised.
⇒Alcohol to intoxication does not necessarily mean "drunk", use the words felt the effects", "got a buzz", "high", etc. instead of intoxication. As a rule of thumb, 5+ drinks in one setting, or within a brief period of time defines "intoxication".
⇒ "How to ask these questions:
→ "How many days in the past 30 have you used....?
→ "How many years in your life have you regularly used....?"

Revised- 06/02/99 DC/TRJ

Addiction Severity Index *Lite* - Training Version
GENERAL INFORMATION

G1.ID No.: ☐☐☐☐☐☐☐☐☐☐

G2. SS No. : ☐☐☐ - ☐☐ - ☐☐☐☐

G3. Program No: ___ ___ ___

G4. Date of Admission: ☐☐ / ☐☐ / ☐☐☐☐

G5. Date of Interview: ☐☐ / ☐☐ / ☐☐☐☐

G8. Class: 1. Intake 2. Follow-up ☐

G9. Contact Code: 1. In person
2. Telephone (Intake ASI must be in person)
3. Mail ☐

G10. Gender: 1. Male 2. Female ☐

G11. Interviewer Code No.: ☐☐

G12. Special: 1. Patient terminated
2. Patient refused
3. Patient unable to respond ☐

Name

Address 1

Address 2

City State Zip Code ( ) Tel. No.

G14. How long have you lived at this address? ☐☐ Years ☐☐ Months

G16. Date of birth: (Month/Day/Year) ☐☐ / ☐☐ / ☐☐☐☐

G17. Of what race do you consider yourself? ☐
1. White (not Hisp) 5. Asian/Pacific 9. Other Hispanic
2. Black (not Hisp) 6. Hispanic-Mexican
3. American Indian 7. Hispanic-Puerto Rican
4. Alaskan Native 8. Hispanic-Cuban

G18. Do you have a religious preference? ☐
1. Protestant 3. Jewish 5. Other
2. Catholic 4. Islamic 6. None

G19. Have you been in a controlled environment in the past 30 days? ☐
1. No 4. Medical Treatment
2. Jail 5. Psychiatric Treatment
3. Alcohol/Drug Treat. 6. Other: _____
•A place, theoretically, without access to drugs/alcohol.

G20. How many days? ☐☐
•"NN" if Question G19 is No. Refers to total number of days detained in the past 30 days.

(Clinical/Training Version)

MEDICAL STATUS

M1.* How many times in your life have you been hospitalized for medical problems? ☐☐
- Include O.D.'s and D.T.'s. Exclude detox, alcohol/drug, psychiatric treatment and childbirth (if no complications). Enter the number of *overnight* hospitalizations for medical problems.

M3. Do you have any chronic medical problems which continue to interfere with your life? 0 -No 1 - Yes ☐
- *If "Yes", specify in comments.*
- A chronic medical condition is a serious physical condition that requires regular care, (i.e., medication, dietary restriction) preventing full advantage of their abilities.

M4. Are you taking any prescribed medication on a regular basis for a physical problem? 0 - No 1 - Yes ☐
- *If Yes, specify in comments.*
- Medication prescribed by a MD for medical conditions; *not psychiatric medicines*. Include medicines prescribed whether or not the patient is currently taking them. The intent is to verify chronic medical problems.

M5. Do you receive a pension for a physical disability? 0 - No 1 - Yes ☐
- *If Yes, specify in comments.*
- Include Workers' compensation, exclude psychiatric disability.

M6. How many days have you experienced medical problems in the past 30 days? ☐☐
- Do not include ailments directly caused by drugs/alcohol.
- Include flu, colds, etc. Include serious ailments related to drugs/alcohol, which would continue even if the patient were abstinent (e.g., cirrhosis of liver, abscesses from needles, etc.).

For Questions M7 & M8, ask the patient to use the Patient Rating scale.

M7. How troubled or bothered have you been by these medical problems in the past 30 days? ☐
- Restrict response to problem days of Question M6.

M8. How important to you *now* is treatment for these medical problems? ☐
- Refers to the need for ***new*** or ***additional*** medical treatment by the patient.

CONFIDENCE RATINGS

Is the above information significantly distorted by: ☐

M10. Patient's misrepresentation? 0 - No 1 - Yes

M11. Patient's inability to understand? 0 - No 1 - Yes ☐

MEDICAL COMMENTS

(Include question number with your notes)

EMPLOYMENT/SUPPORT STATUS

E1. Education completed:
- GED = 12 years, note in comments.
- Include formal education only.

Years ☐☐ Months ☐☐

E2. Training or Technical education completed:
- Formal/organized training only. For military training, only include training that can be used in civilian life, i.e., electronics or computers.

Months ☐☐

E4. Do you have a valid driver's license?
- Valid license; not suspended/revoked.

0 - No 1 - Yes ☐

E5. Do you have an automobile available?
- If answer to **E4** is "No", then **E5** must be "No". Does not require ownership, only requires availability on a regular basis.

0 - No 1 - Yes ☐

E6. How long was your longest full time job?
- Full time = 35+ hours weekly; does not necessarily mean most recent job.

☐☐ / ☐☐ Yrs / Mos

E7. Usual (or last) occupation?
(specify) _____
(use Hollingshead Categories Reference Sheet) ☐

E9 Does someone contribute the majority of your support? 0 - No 1 - Yes ☐

E10. Usual employment pattern, past three years? ☐
1. Full time (35+ hours)
2. Part time (regular hours)
3. Part time (irregular hours)
4. Student
5. Service
6. Retired/Disability
7. Unemployed
8. In controlled environment
- Answer should represent the *majority* of the last 3 years, not just the most recent selection. If there are equal times for more than one category, select that which best represents more current situation.

E11 How many days were you paid for working in the past 30 days? ☐☐
- Include "under the table" work, paid sick days and vacation.

EMPLOYMENT/SUPPORT COMMENTS
(Include question number with your notes)

EMPLOYMENT/SUPPORT (cont.)

For questions E12-17: How much money did you receive from the following sources in the past 30 days?

E12. Employment? ☐☐☐☐☐
- Net or "take home" pay, include any "under the table" money.

E13. Unemployment Compensation? ☐☐☐☐☐

E14. Welfare? ☐☐☐☐☐
- Include food stamps, transportation money provided by an agency to go to and from treatment.

E15. Pensions, benefits or Social Security? ☐☐☐☐☐
- Include disability, pensions, retirement, veteran's benefits, SSI & workers' compensation.

E16. Mate, family, or friends? ☐☐☐☐☐
- Money for personal expenses, (i.e. clothing), include unreliable sources of income (e.g. gambling). Record *cash* payments only, include windfalls (unexpected), money from loans, gambling, inheritance, tax returns, etc.).

E17. Illegal? ☐☐☐☐☐
- *Cash* obtained from drug dealing, stealing, fencing stolen goods, gambling, prostitution, etc. *Do not* attempt to convert drugs exchanged to a dollar value.

E18. How many people depend on you for the majority of their food, shelter, etc.? ☐☐
- Must be regularly depending on patient, do include alimony/child support, do not include the patient or self-supporting spouse, etc.

E19. How many days have you experienced employment problems in the past 30 ? ☐☐
- Include inability to find work, if they are actively looking for work, or problems with present job in which that job is jeopardized.

For Question E20, ask the patient to use the Patient Rating scale.

E20. How troubled or bothered have you been by these employment problems in the past 30 days? ☐
- If the patient has been incarcerated or detained during the past 30 days, they cannot have employment problems.

E21. How important to you *now* is counseling for these employment problems? ☐
- The patient's ratings in Questions E20-21 refer to Question E19.
- Stress help in finding or preparing for a job, not giving them a job.

CONFIDENCE RATINGS

Is the above information significantly distorted by:

E23. Patient's misrepresentation 0-No 1-Yes ☐

E24. Patient's inability to understand? 0-No 1-Yes ☐

EMPLOYMENT/SUPPORT COMMENTS
(Include question number with your notes)

ALCOHOL/DRUGS

Route of Administration Types:
1. Oral 2. Nasal 3. Smoking 4. Non-IV injection 5. IV

• *Note the usual or most recent route. For more than one route, choose the most severe. The routes are listed from least severe to most severe.*

		Past 30 Days	Lifetime (years)	Route of Admin
D1	Alcohol (any use at all)	☐☐	☐☐	■
D2	Alcohol (to intoxication)	☐☐	☐☐	■
D3	Heroin	☐☐	☐☐	☐
D4	Methadone	☐☐	☐☐	☐
D5	Other Opiates/Analgesics	☐☐	☐☐	☐
D6	Barbiturates	☐☐	☐☐	☐
D7	Sedatives/Hypnotics/ Tranquilizers	☐☐	☐☐	☐
D8	Cocaine	☐☐	☐☐	☐
D9	Amphetamines	☐☐	☐☐	☐
D10	Cannabis	☐☐	☐☐	☐
D11	Hallucinogens	☐☐	☐☐	☐
D12	Inhalants	☐☐	☐☐	☐
D13	More than 1 substance per day (including alcohol)	☐☐	☐☐	■

D17. How many times have you had Alcohol DT's? ☐☐

• ***Delirium Tremens*** (DT's): Occur 24-48 hours after last drink, or significant decrease in alcohol intake, shaking, severe disorientation, fever, , hallucinations, they usually require medical attention.

ALCOHOL/DRUGS COMMENTS
(Include question number with your notes)

Page 5

ALCOHOL/DRUGS (cont.)

How many times in your life have you been treated for :

D19* Alcohol abuse? ☐☐

D20* Drug abuse? ☐☐

* Include detoxification, halfway houses, in/outpatient counseling, and AA or NA (if 3+ meetings within one month period).

How many of these were detox only:

D21. Alcohol? ☐☐

D22. Drugs? ☐☐

* If D19 = "00", then question D21 is "NN"
If D20 = "00", then question D22 is "NN"

How much money would you say you spent during the past 30 days on:

D23. Alcohol? ☐☐☐☐☐

D24. Drugs? ☐☐☐☐☐

* Only count actual *money* spent. What is the financial burden caused by drugs/alcohol?

D25. How many days have you been treated as an outpatient for alcohol or drugs in the past 30 days? * Include AA/NA ☐☐

For Questions D28-D31, ask the patient to use the Patient Rating scale. The patient is rating the need for additional substance abuse treatment.

How many days in the past 30 have you experienced:

D26. Alcohol problems? ☐☐

How troubled or bothered have you been in the past 30 days by these

D28. Alcohol problems? ☐

How important to you *now* is treatment for these:

D30. Alcohol problems? ☐

How many days in the past 30 have you experienced:

D27. Drug problems? ☐☐

* Include only: Craving, withdrawal symptoms, disturbing effects of use, or wanting to stop and being unable to.

How troubled or bothered have you been in the past 30 days by these

D29. Drug problems? ☐

How important to you *now* is treatment for these:

D31. Drug problems? ☐

CONFIDENCE RATINGS

Is the above information significantly distorted by:

D34. Patient's misrepresentation? 0-No 1-Yes ☐

D35. Patient's inability to understand? 0-No 1-Yes ☐

ALCOHOL/DRUGS COMMENTS
(Include question number with your notes)

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LEGAL STATUS

L1. Was this admission prompted or suggested by the criminal justice system? 0 - No 1 - Yes ☐
- Judge, probation/parole officer, etc.

L2. Are you on parole or probation? 0 - No 1 - Yes ☐
- Note duration and level in comments.

How many times in your life have you been arrested and charged with the following:

L3* Shoplift/Vandal	☐☐	L10* Assault	☐☐
L4* Parole/Probation	☐☐	L11* Arson	☐☐
L5* Drug Charges	☐☐	L12* Rape	☐☐
L6* Forgery	☐☐	L13* Homicide/Mansl.	☐☐
L7* Weapons Offense	☐☐	L14* Prostitution	☐☐
L8* Burglary/Larceny/B&E	☐☐	L15* Contempt of Court	☐☐
L9* Robbery	☐☐	L16* Other: _____	☐☐

- Include total number of counts, not just convictions. Do not include juvenile (pre-age 18) crimes, unless they were charged as an adult.
- Include formal charges only.

L17* How many of these charges resulted in convictions? ☐☐
- If L03-16 = 00, then question L17 = "NN".
- Do not include misdemeanor offenses from questions L18-20 below.
- Convictions include fines, probation, incarcerations, suspended sentences, and guilty pleas.

How many times in your life have you been charged with the following:

L18* Disorderly conduct, vagrancy, public intoxication? ☐☐

L19* Driving while intoxicated? ☐☐

L20* Major driving violations? ☐☐
- Moving violations: speeding, reckless driving, no license, etc.

L21* How many months were you incarcerated in your life? ☐☐
- If incarcerated *2 weeks or more*, round this up to 1 month. List total number of months incarcerated.

L24 Are you presently awaiting charges, trial, or sentence? 0 - No 1 - Yes ☐

L25 What for? ☐☐
- Use the number of the type of crime committed: 03-16 and 18-20
- Refers to Q. L24. If more than one, choose most severe.
- Don't include civil cases, unless a criminal offense is involved.

L26 How many days in the past 30, were you detained or incarcerated? ☐☐
- Include being arrested and released on the same day.

LEGAL COMMENTS
(Include question number with your notes)

Page 7

LEGAL STATUS (cont.)

L27. How many days in the past 30 have you engaged in illegal activities for profit? ☐☐
- Exclude simple drug possession. Include drug dealing, prostitution, selling stolen goods, etc. May be cross checked with Question E17 under Employment/Family Support Section.

For Questions L28-29, ask the patient to use the Patient Rating scale.

L28. How serious do you feel your present legal problems are? ☐
- Exclude civil problems

L29. How important to you *now* is counseling or referral for these legal problems? ☐
- Patient is rating a need for ***additional*** referral to legal counsel for defense against criminal charges.

CONFIDENCE RATINGS

Is the above information significantly distorted by:

L31. Patient's misrepresentation? 0 - No 1 - Yes ☐

L32. Patient's inability to understand? 0 - No 1 - Yes ☐

LEGAL COMMENTS
(Include question number with your notes)

FAMILY/SOCIAL RELATIONSHIPS

F1. Marital Status:
1-Married 3-Widowed 5-Divorced
2-Remarried 4-Separated 6-Never Married
• Common-law marriage = 1. Specify in comments.

F3. Are you satisfied with this situation?
0-No 1-Indifferent 2-Yes
• Satisfied = generally liking the situation. - Refers to Questions F1 & F2.

F4. Usual living arrangements (past 3 years):
1-With sexual partner & children
2-With sexual partner alone
3-With children alone
4-With parents
5-With family
6-With friends
7-Alone
8-Controlled Environment
9-No stable arrangement
• Choose arrangements most representative of the past 3 years. If there is an even split in time between these arrangements, choose the most recent arrangement.

F6. Are you satisfied with these arrangements?
0-No 1-Indifferent 2-Yes

Do you live with anyone who:

F7. Has a current alcohol problem? 0-No 1-Yes

F8 Uses non-prescribed drugs? 0-No 1-Yes

F9. With whom do you spend most of your free time? 1-Family 2-Friends Alone
• If a girlfriend/boyfriend is considered as family by patient, then they must refer to them as family throughout this section, not a friend.

F10 Are you satisfied with spending your free time this way? 0-No 1-Indifferent 2-Yes
• A satisfied response must indicate that the person generally likes the situation. Referring to Question F9.

Have you had significant periods in which you have experienced serious problems getting along with:

	0 - No 1 - Yes Past 30 days	In Your Life
F18 Mother		
F19 Father		
F20 Brother/Sister		
F21 Sexual Partner/Spouse		
F22 Children		
F23 Other Significant Family (specify)_____		
F24 Close Friends		
F25 Neighbors		
F26 Co-workers		

• "Serious problems" mean those that endangered the relationship.
• A "problem" requires contact of some sort, either by telephone or in person.

Did anyone abuse you?

	0- No 1-Yes Past 30 days	In Your Life
F28. Physically? • Caused you physical harm.		
F29. Sexually? • Forced sexual advances/acts.		

FAMILY/SOCIAL COMMENTS
(Include question number with your notes)

FAMILY/SOCIAL (cont.)

How many days in the past 30 have you had serious conflicts:

F30. With your family? ☐☐

For Questions F32-34, ask the patient to use the Patient Rating scale.

How troubled or bothered have you been in the past 30 days by:

F32. Family problems ? ☐

FHow important to you now is treatment or counseling for these:

F34. Family problems ☐

- Patient is rating *his/her* need for counseling for family problems, not whether the family would be willing to attend.

How many days in the past 30 have you had serious conflicts:

F31. With other people (excluding family)? ☐☐

For Questions F33-35, ask the patient to use the Patient Rating scale.

How troubled or bothered have you been in the past 30 days by:

F33. Social problems? ☐

How important to you now is treatment or counseling for these:

F35. Social problems ☐

- Include patient's need to seek treatment for such social problems as loneliness, inability to socialize, and dissatisfaction with friends. Patient rating should refer to dissatisfaction, conflicts, or other serious problems.

CONFIDENCE RATING

Is the above information significantly distorted by:

F37. Patient's misrepresentation? 0-No 1-Yes ☐

F38. Patient's inability to understand? 0-No 1-Yes ☐

FAMILY/SOCIAL COMMENTS

(Include question number with your notes)

PSYCHIATRIC STATUS

How many times have you been treated for any psychological or emotional problems:

P1.* In a hospital or inpatient setting? ☐☐

P2.* Outpatient/private patient? ☐☐

- Do not include substance abuse, employment, or family counseling.

Treatment episode = a series of more or less continuous visits or treatment days, not the number of visits or treatment days.

- Enter diagnosis in comments if known.

P3. Do you receive a pension for a psychiatric disability? ☐

0-No 1-Yes

Have you had a significant period of time (that was not a direct result of alcohol/drug use) in which you have:

		0-No 1-Yes: Past 30 Days	Lifetime
P4.	Experienced serious depression-sadness, hopelessness, loss of interest, difficulty with daily function?	☐	☐
P5.	Experienced serious anxiety/ tension, uptight, unreasonably worried, inability to feel relaxed?	☐	☐
P6.	Experienced hallucinations-saw things or heard voices that were not there?	☐	☐
P7.	Experienced trouble understanding, concentrating, or remembering?	☐	☐

For Items P8-10, Patient can have been under the influence of alcohol/drugs.

P8.	Experienced trouble controlling violent behavior including episodes of rage, or violence?	☐	☐
P9.	Experienced serious thoughts of suicide? • Patient seriously considered a plan for taking his/her life.	☐	☐
P10.	Attempted suicide? • Include actual suicidal gestures or attempts.	☐	☐
P11.	Been prescribed medication for any psychological or emotional problems? • Prescribed for the patient by MD. Record "Yes" if a medication was prescribed *even if* the patient is not taking it.	☐	☐

P12. How many days in the past 30 have you experienced these psychological or emotional problems? ☐☐
- This refers to problems noted in Questions P4-P10.

For Questions P13-P14, ask the patient to use the Patient Rating scale

P13. How much have you been troubled or bothered by these psychological or emotional problems in the past 30 days? ☐
- Patient should be rating the problem days from Question P12.

P14. How important to you *now* is treatment for these psychological or emotional problems? ☐

CONFIDENCE RATING

Is the above information significantly distorted by:

P22. Patient's misrepresentation? 0-No 1-Yes ☐

P23. Patient's inability to understand? 0-No 1-Yes ☐

PSYCHIATRIC STATUS COMMENTS

(Include question number with your comments)

Appendix O Standard Treatment Attendance Cards

TRAINEE'S NAME:	THERAPY	COUNSELOR'S SIGNATURES
Week 1:	□ Group Therapy (AA/NA)	
	□ Group Therapy (Relapse Prevention)	
	□ Group Therapy (Drug & Alcohol Prevention)	
Week 2:	□ Group Therapy (AA/NA)	
	□ Group Therapy (Relapse Prevention)	
	□ Group Therapy (Drug & Alcohol Prevention)	
Week 3:	□ Individual Therapy	
Week 4:	□ Individual Therapy	

Appendix P Values Card Sort Instructions

Personal Values Card Sort Instructions (modified)

W.R. Miller, J. C'de Baca, D.B. Matthews and P.L. Wilbourne
University of New Mexico, 2001

1. Place five anchor cards in order from 1-5 in front of the participant (Least important should be on the left; Most important on the right).

2. Shuffle the 50 value cards; keep the 2 blank cards separate.

3. Instruct the participant to sort the cards using the following script: "I placed three title cards in front of you—important to me, very important to me, and not very important to me. I'm going to give you a stack of 50 cards. Each card describes something that may represent a personal value for you. I would like you to look at each card and place each card under one of the three title cards. There are also two blank cards. If there is a value you would like to include, write it on the card and put it in whichever pile you would like. I would like you to sort all 50 cards, but whether you use the two additional cards is optional. The only rule is that you can have no more than 10 cards under the Most Important stack. After you are finished with this part, I will ask you to do one other small task. Do you have any questions?"

4. When participant indicates s/he is finished with the sorting, look at the Most Important deck to make sure there are no more than 10 cards under this deck.

5. Read the following: "For the second task, I'd like you to focus on the top values you chose and sort them from 1 to n (total number participant has in the most important pile—no more than 10) using the ranking sheet. In this spot (point to #1) you will put the card that is your top value. Then you will put your second top value here (point to #2). Do you have any questions?"

6. When participant indicates s/he is finished rank ordering the most important pile, check to make sure you understand how the cards were sorted (ascending or descending). Point to the #1 spot and say, "I just want to make sure I have this right--Is this your number one value"

7. Record values on scoring sheet using either card number or value name. Indicate which stack each value was put under and for stack #5 (most important), indicate rank order. 1= number one value.

Appendix Q Values Card Sort

W. R. Miller, J. C'de Baca, D.B. Matthews and P.L. Wilbourne
University of New Mexico, 2001

PERSONAL VALUES Card Sort W.R. Miller, J. C'de Baca, D.B. Matthews, P.L. Wilbourne University of New Mexico, 2001	**IMPORTANT TO ME**
VERY IMPORTANT TO ME	**NOT IMPORTANT TO ME**
ACCEPTANCE to be accepted as I am 1 9/01	**ACCURACY** to be accurate in my opinions and beliefs 2 9/01
ACHIEVEMENT to have important accomplishments 3 9/01	**ADVENTURE** to have new and exciting experiences 4 9/01
ATTRACTIVENESS to be physically attractive 5 9/01	**AUTHORITY** to be in charge of and responsible for others 6 9/01

AUTONOMY to be self-determined and independent 7 9/01	**BEAUTY** to appreciate beauty around me 8 9/01
CARING to take care of others 9 9/01	**CHALLENGE** to take on difficult tasks and problems 10 9/01
CHANGE to have a life full of change and variety 11 9/01	**COMFORT** to have a pleasant and comfortable life 12 9/01
COMMITMENT to make enduring, meaningful commitments 13 9/01	**COMPASSION** to feel and act on concern for others 14 9/01
CONTRIBUTION to make a lasting contribution in the world 15 9/01	**COOPERATION** to work collaboratively with others 16 9/01

FLEXIBILITY to adjust to new circumstances easily 27 9/01	**FORGIVENESS** to be forgiving of others 28 9/01
FRIENDSHIP to have close, supportive friends 29 9/01	**FUN** to play and have fun 30 9/01
GENEROSITY to give what I have to others 31 9/01	**GENUINENESS** to act in a manner that is true to who I am 32 9/01
GOD'S WILL to seek and obey the will of God 33 9/01	**GROWTH** to keep changing and growing 34 9/01
HEALTH to be physically well and healthy 35 9/01	**HELPFULNESS** to be helpful to others 36 9/01

HONESTY to be honest and truthful 37 9/01	**HOPE** to maintain a positive and optimistic outlook 38 9/01
HUMILITY to be modest and unassuming 39 9/01	**HUMOR** to see the humorous side of myself and the world 40 9/01
INDEPENDENCE to be free from dependence on others 41 9/01	**INDUSTRY** to work hard and well at my life tasks 42 9/01
INNER PEACE to experience personal peace 43 9/01	**INTIMACY** to share my innermost experiences with others 44 9/01
JUSTICE to promote fair and equal treatment for all 45 9/01	**KNOWLEDGE** to learn and contribute valuable knowledge 46 9/01

LEISURE to take time to relax and enjoy 47 9/01	**LOVED** to be loved by those close to me 48 9/01	**ORDER** to have a life that is well-ordered and organized 57 9/01	**PASSION** to have deep feelings about ideas, activities, or people 58 9/01
LOVING to give love to others 49 9/01	**MASTERY** to be competent in my everyday activities 50 9/01	**PLEASURE** to feel good 59 9/01	**POPULARITY** to be well-liked by many people 60 9/01
MINDFULNESS to live conscious and mindful of the present moment 51 9/01	**MODERATION** to avoid excesses and find a middle ground 52 9/01	**POWER** to have control over others 61 9/01	**PURPOSE** to have meaning and direction in my life 62 9/01
MONOGAMY to have one close, loving relationship 53 9/01	**NON-CONFORMITY** to question and challenge authority and norms 54 9/01	**RATIONALITY** to be guided by reason and logic 63 9/01	**REALISM** to see and act realistically and practically 64 9/01
NURTURANCE to take care of and nurture others 55 9/01	**OPENNESS** to be open to new experiences, ideas, and options 56 9/01	**RESPONSIBILITY** to make and carry out responsible decisions 65 9/01	**RISK** to take risks and chances 66 9/01

ROMANCE to have intense, exciting love in my life 67 9/01	**SAFETY** to be safe and secure 69 9/01	**SPIRITUALITY** to grow and mature spiritually 77 9/01	**STABILITY** to have a life that stays fairly consistent 78 9/01
SELF-ACCEPTANCE to accept myself as I am 68 9/01	**SELF-CONTROL** to be disciplined in my own actions 70 9/01	**TOLERANCE** to accept and respect those who differ from me 79 9/01	**TRADITION** to follow respected patterns of the past 80 9/01
SELF-ESTEEM to feel good about myself 71 9/01	**SELF-KNOWLEDGE** to have a deep and honest understanding of myself 72 9/01	**VIRTUE** to live a morally pure and excellent life 81 9/01	**WEALTH** to have plenty of money 82 9/01
SERVICE to be of service to others 73 9/01	**SEXUALITY** to have an active and satisfying sex life 74 9/01	**WORLD PEACE** to work to promote peace in the world 83 9/01	**Other Value:**
SIMPLICITY to live life simply, with minimal needs 75 9/01	**SOLITUDE** to have time and space where I can be apart from others 76 9/01	**Other Value:**	**Other Value:**

Appendix R Personal Values Record Form

Study: Job Corps
ID:
Date:

PERSONAL VALUES
Record Form

W. R. Miller, J. C'de Baca, D.B. Matthews and P.L. Wilbourne
University of New Mexico, 2001

Not at all important:
_____
_____
_____

Somewhat important:
_____
_____
_____

Very Important:
_____
_____
_____

Top Ten:
1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____