The Importance of Life Goals in the Treatment of Marijuana Dependence

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ABSTRACT

Theory and previous research indicate that a person's broader set of life goals may have motivational properties for specific behavior change efforts. The present study examined the types of life goals and ratings of life goal attributes as predictors of marijuana treatment outcomes in a sample of marijuana dependent individuals. Results were generally not consistent with hypotheses. It was expected that ratings of conflict between life goals and marijuana use would be associated with less marijuana use and fewer related problems and dependence symptoms following treatment, but results indicated few associations between life goal ratings and treatment outcome variables. Similarly, types of goals expected to be associated with better treatment outcome were not significantly correlated with reductions in outcome variables at follow-up assessments. Some support was demonstrated for a causal model in which goal conflict with marijuana use influenced posttreatment symptoms of dependence via indirect associations with outcome expectancies and readiness to change.

Table of Contents

List of Tables

List of Figures

Appendices

Introduction

The Importance of Life Goals in the Treatment of Marijuana Dependence

In 2009, an estimated 8.9% of people in the United States over the age of 12 met the criteria for alcohol and/or illicit drug abuse or dependence (SAMHSA, 2010). While most of these people were abusing or dependent on alcohol (15.4 million), over 7 million people had an illicit drug use disorder (3.2 million of these people had a concurrent alcohol use disorder). Marijuana use disorders are the most common among the illicit substance use disorders, with 4.3 million Americans meeting criteria for abuse or dependence in 2009. Given the prevalence of substance use disorders, it is important to develop a clearer understanding of people's motivations for drug use as well as their motivations to change. While psychological treatments for substance use disorders have proven efficacious (Miller et al., 1995; Burke, Arkowitz, & Menochola, 2003), more research is necessary in order to identify factors that predict intervention outcomes and that may be targeted in future interventions. One factor that might influence one's motivation to change may be life goals.

Life goals have been defined using varying conceptualizations within psychological literature. One such conceptualization of life goals, life tasks, is defined as a "set of tasks that a person sees himself or herself working on and devoting energy to solving during a specified time period in life" (Cantor, Norem, Neidenthal, Langston, & Brower, 1987). Similarly, personal projects are described as sets of interrelated, personally relevant actions intended to achieve a desired state (Little, 1983). Another conceptualization of life goals, termed "current concerns", refers to the state in which a goal has been identified, but has not yet been either achieved or disregarded (Klinger, 1977). Goal strivings, defined as "what a person is characteristically trying to do", reflect more overarching or superordinate goals (Emmons, 1986). In order to assess these

constructs, participants are typically instructed to list goals and then rate each goal on various dimensions (e.g. importance, likelihood of success). Despite these differing theoretical characterizations of goal constructs, participants tend to list similar types of goals and similar goal content regardless of whether they are asked to list personal projects, current concerns, or personal strivings (Omodei & Wearing, 1990). In sum, these somewhat differing characterizations of goals seem to be measuring a single construct that could be termed "life goals".

Life goals may be thought of as part of the broader construct of motivation. For instance, Emmons and McAdams (1991) found that content-coded life goals correlated with both the Thematic Apperception Test, an implicit measure of motives, as well as the Affiliation, Achievement, Dominance, and Nurturance scales of the Personality Research Form, an explicit measure of motives. Within the substance use domain, the link between life goals and motivation may be important inasmuch as some researchers hypothesize that motivation represents a final common pathway to drug use (Cox & Klinger, 1988). Consequently, the use of other substances may depend on the "totality and properties of an individual's current goal pursuits" (Cox & Klinger, 2002). Investigating which properties of life goals are related to drug use and disuse may be important in predicting individuals' motivation to use drugs.

The content of life goals may be important in predicting substance use. Simons, Christopher, and Mclaury (2004) coded college students' life goals into four mutually exclusive categories: achievement, affiliation, health, and self-presentation. They found that achievement life goals were associated with fewer binge-drinking episodes and alcohol related problems while self-presentation goals were associated with more binge drinking episodes. Affiliation and health goals were unrelated to binge drinking. Another study confirmed that achievement-

related goals had a negative relationship binge drinking episodes and alcohol-related problems, as well as alcohol use frequency and quantity (Palfai & Weafer, 2006). In contrast, a study examining the relationship between life goal content and alcohol, marijuana, and other drug use frequency found that achievement strivings were unrelated to alcohol, marijuana, and other drug use in the preceding 30 days (Simons, Christopher, Oliver, & Stanage, 2006). As in previous research, high self-presentation strivings were associated with increased alcohol use; however self-presentation strivings were not associated with days of marijuana or other drug use. Affect regulation strivings were positively associated with all types of substance use. In contrast, interpersonal strivings were positively associated with alcohol use, negatively associated with marijuana use, and unrelated to the use of other drugs. Although some research has demonstrated support that certain types of life goals predict substance use, the majority of studies have focused on various dimensions or properties of life goals.

Researchers have demonstrated that certain properties of life goals may be more useful than others in predicting alcohol and other drug use. For instance, one study found that participants with lower scores on life goal meaningfulness (indicated by lower ratings of goal commitment and importance), had more binge drinking episodes and alcohol-related problems; however, those with lower scores for life goal efficacy (indicated by lower ratings of perceived control and likelihood of success) did not differ on alcohol use or related problems from participants with higher ratings (Palfai and Weafer, 2006). Lecci, MacLean, and Croteau (2002) found similar results: while life goal commitment predicted more frequent and problematic alcohol use, life goal efficacy did not predict drinking frequency.

One life goal rating that may be especially important in predicting substance use is the degree to which using the substance is perceived as facilitating or impeding life goals. Simons

(2003) found that perceived conflict between alcohol use and goal strivings predicted future alcohol use problems among college students; however this relationship was mediated by frequency of alcohol use. Other studies have demonstrated that the perceived level of agreement between life goals and alcohol use predicted a significant amount of variance in alcohol consumption, over and above ratings of goal attributes including goal involvement, difficulty, and efficacy (Williams, 1999; Williams, 2004).

Life goal conflict has also been investigated within the context of marijuana use. Simons and Carey (2003) examined the relationship between the perceived effect of marijuana on life goals and marijuana use initiation, frequency, and related problems among college students and found that perceived conflict was a significant predictor of both marijuana use initiation and frequency of marijuana use. Participants with greater conflict between life goals and marijuana use were less likely to have tried marijuana and if they had, they used less frequently than those with lower levels of conflict. Additionally, conflict between life goals and marijuana use was associated with fewer problems related to marijuana use; however, this relationship was fully mediated by frequency of use. Additionally, another study found that the perception that marijuana use facilitated one's goals was related to marijuana use (Simons, Christopher, Oliver, & Stanage, 2006).

Conversely, the perception that reducing substance use will be detrimental to one's life goals may predict greater drug use and poorer treatment outcome. McKeeman & Karoly (1991) found that cigarette smokers who successfully quit had significantly lower ratings of the perceived conflict between quitting cigarettes and life goals than smokers who relapsed or did not attempt to quit. In a review of German literature, Michalak, Heidenreich, & Hoyer (2004) cited two studies in which substance use patients had significantly greater conflict between life

goals and reduced use than non-patients (Völp, 1984; Hoyer, 1995; as cited in Michalak, Heidenreich, & Hoyer, 2004). In another study reviewed by the same authors, it was demonstrated that greater conflict between reduced alcohol use and treatment was associated with more severe symptoms of psychopathology among a clinical sample of alcoholic patients (Hoyer, 1992; as cited in Michalak, Heidenreich, & Hoyer, 2004).

The motivational processes associated with life goal-substance use conflict may be mediated by other constructs related to motivation. One possible mediator may be one's expectations of the potential consequences of changing substance use (i.e. outcome expectancies). Within social-cognitive theory, positive outcome expectancies are hypothesized to predict an increased likelihood of an action, while negative expectancies predict a decreased likelihood of an action (Bandura, 1986). Following this reasoning, those who see more benefits and fewer costs to reducing their substance use will likely be more motivated to reduce their use. Given that those who perceive their life goals as in conflict with their use will likely also see more costs associated with use as well as benefits associated with quitting, outcome expectancies associated with reducing one's use may mediate the relationship between life goals and treatment outcome.

The consideration of the pros and cons of a specific course of action is also associated with another concept, stage of change (Miller & Tonigan, 1996). In Prochaska and DiClemente's model (1982), during the stage termed contemplation or ambivalence, the positive and negative consequences of change are weighed (Miller & Rollnick, 1991). Subsequently, if the positive consequences of change outweigh the negative consequences, one may progress into the preparation and actions stages (Miller and Tonigan, 1996). Because increased life goal-substance use conflict could lead to increased recognition of substance use as a problematic

behavior, life goals may facilitate movement from the contemplation stage to the preparation and action stages. Thus, treatment readiness or stage of change may also mediate any observed relationship between life goals and substance use treatment outcomes.

Based on the previously reviewed literature, there are many unanswered questions about the relationship between life goals and substance use. While several studies have demonstrated that life goals are related to substance use, most of these studies were conducted using college student samples with relatively little substance use or substance use disorder psychopathology. Heavy substance users may have significantly different motives for marijuana use than casual college student users; as a result, it may be important to understand how life goals affect substance use motivation among heavier users. Additionally, most studies have evaluated participants at a single time-point, assessing substance use retrospectively: such a design diminishes confidence in causal inferences. Finally, very few studies have examined the life goal construct in the context of a clinical treatment trial for substance dependence. In sum, while there is some evidence that life goals affect substance use treatment outcome (Michalak, Heidenreich, & Hoyer, 2004), no known study has examined whether life goals predict marijuana use over time among marijuana-dependent users. The present investigation explored the relationship between life goal content and characteristics and outcomes from a randomized controlled treatment trial for marijuana dependence treatment. The following hypotheses were evaluated:

1. Greater perceived conflict between life goals and marijuana use will be associated with greater reductions in marijuana use and related problems following treatment.
2. Ratings of life goal importance will interact with perceived conflict to explain additional variance beyond the main effects, such that goals in conflict with marijuana use that are

rated to be more important will be associated with the larger reductions in marijuana use and related problems following treatment.

3. Achievement and interpersonal (intimacy and affiliation) goals will be associated with better treatment outcomes.

In addition, the investigation tested a causal model in which conflict between life goals and marijuana use predicts marijuana treatment outcomes indirectly. Specifically, the model tested whether life goal-marijuana use conflict predicts marijuana reduction outcome expectancies (i.e. fewer costs, greater benefits), outcome expectancies predict greater readiness for change, and readiness for change predicts better treatment outcome (See Figure 1).

Method

Overview of Parent Clinical Trial

The present investigation is a secondary analysis of data collected as part of a randomized, controlled treatment-outcome study for marijuana-dependent adults (Stephens et al., 2006). Researchers assigned 87 participants to one of two treatment conditions: a 9-session condition in which participants received a combination of motivational enhancement therapy (MET), cognitive behavioral therapy (CBT), and case management (CM); or a "PRN" condition in which participants received 4 sessions of combined MET, CBT, and CM as well as additional treatment sessions that were available as needed over the following 30 months. Participants were assessed at baseline and 4, 10, 16, 22, 28, and 34 months after intake. The investigators found significant reductions in marijuana use following treatment in both conditions; however, frequency of self-reported marijuana differed between conditions only at the 4-month follow-up, with greater reductions occurring in the 9-session condition.

Participants

Participants were recruited from Seattle, Washington and the surrounding areas via flyers, brochures, and paid radio and newspaper advertisements. Of the 203 adults who were screened, 70 respondents were ineligible. Participants were excluded for the following reasons: dependent on alcohol or other drug(s) (N = 26), involved in another treatment (N = 27), fewer than 50 days of marijuana use in past 90 days (N = 21), and other (N = 15). Another 46 individuals were eligible, but chose not to enroll in the study. The remaining 87 eligible participants were randomized to either the 9-session condition (N = 44) or the PRN condition (N = 43). The mean age of participants in the sample was 35.6 years (sd = 8.7). The sample was predominantly Caucasian (86%). About 75% of the participants were male and half (49%) of the participants were married or cohabitating. The sample consisted of heavy marijuana users—on average, participants reported using marijuana on 85% of the 90 days prior to the baseline assessment and smoking marijuana an average of 3.9 times per day.

Measures

Life Goals. Life goals were assessed at baseline and at 4, 10, and 22-month follow-ups using procedures adapted from Emmons (1986) and Little (1989). The Life Goals assessment (Appendix A) prompted participants to list five to ten self-generated life goals. Reducing or quitting marijuana use was not intended to be assessed as a life goal and was deleted for the purposes of these analyses if listed by a participant. Participants were then prompted to rate each listed goal on seven dimensions. The first four dimensions—importance of the goal or commitment to the goal (Importance), amount of effort it would take to be successful in the goal (Effort), likelihood of succeeding in the goal (Success), and amount of happiness that will be felt if successful in the goal (Happiness)—were rated on a scale of 0 (not at all) to 5 (extremely/very much). Participants were next asked to rank-order the goals, with 1 representing the most

important goal and 10 representing the least important goal. Next, participants were asked to rate the degree to which their current level of use affected each of their goals (Conflict) on a scale of 1(very positively) to 5 (very negatively). Finally, participants were asked to rate how reducing their marijuana use would affect each of their goals on a scale of 1(very positively) to 5 (very negatively). Mean ratings on Importance, Effort, Success, Happiness, and Conflict were calculated for the participants' five most highly ranked goals.

In order to analyze the content of the goals listed by participants, goals were coded into one of 11 mutually exclusive categories based on Emmons (1999). The following ten categories from Emmons' (1999) original coding scheme were included (See Appendix B): achievement, affiliation, intimacy, power, personal growth and health, self-presentation, self-sufficiency, self-defeating, generativity, and self-transcendence. Additionally, an "other" category was added in order to capture goals that do not fit into any other categories. Life goals were content coded by two independent raters. Measures of inter-rater reliability indicated that life goals were reliably coded using the Emmons coding scheme. Specifically, raters agreed on the categorization of 82.4% of goals; furthermore, inter-rater reliability, as assessed by Cohen's kappa, was .76. A variable indicating whether the content category was endorsed among the participants' five most highly ranked goals was created for each of the 11 content categories.

Marijuana Use. Marijuana use frequency was assessed using the Timeline Follow-Back procedure (TLFB), a technique developed to aid the recall of alcohol use (Sobell & Sobell, 1992). The TLFB is a semi-structured interview in which assessors ask participants about key dates (e.g. birthdays, paydays, and holidays) and then record key dates on calendars. These calendars are subsequently used to recall the dates when substance use occurred, which are also recorded on the calendars. Participants completed the TLFB calendar exercise at baseline as

well as at all of the follow-up assessments. After the completion of the assessment, assessors recorded the frequency of substance use on a "tally form" (Appendix C). The tally form was used to derive participants' percentage of days of marijuana use for the preceding 90 days. The TLFB method has good to excellent validity and reliability as a method for assessing the frequency of marijuana and other substance use (Rohsenow, 2008). Moreover, previous studies have indicated that TLFB data is consistent with collateral reports as well as data from urine tests (Stephens, Roffman, & Curtin, 2000).

Dependence Symptoms. Marijuana dependence symptoms were assessed via the dependence modules of the Structured Clinical Interview for DSM-IV (SCID; First, Spitzer, Gibbon, & Williams, 1996). A clinically trained interviewer delivered the structured interview and determined the appropriate coding of seven marijuana dependence items. Each dependence item was coded as 1, indicating that the symptom was absent or the item was false; 2, indicating that the symptom was sub-threshold; or 3, indicating that the threshold for the criterion was met or that the criterion statement was true. A measure of marijuana dependence was created by taking the sum of the number of dependence items coded 3. The SCID was administered at baseline as well as at all follow-up assessments. The SCID is considered a valid method for determining a substance use disorder diagnosis (Rohsenow, 2008).

Marijuana Problems. Problems associated with the use of marijuana were assessed using the Marijuana Problems Scale (MPS; Stephens, Roffman, & Curtin, 2000; Appendix D). The MPS is a 19-item list of the potential negative consequences marijuana use in which participants are prompted to rate each item on a 3-point scale, where 0 means the item is not a problem caused by using marijuana, 1 means the item is a minor problem caused by marijuana use, and 2 represents a major problem caused by marijuana use. An index of marijuana problems

was created using the total number of items coded as a 1 or a 2. The measure uses a 90-day window and was administered at the baseline and at all follow-up assessments. Cronbach's alpha coefficient for the MPS was .81.

Outcome Expectancies. Participants' outcome expectancies associated with quitting or reducing marijuana will be assessed using the Costs and Benefits Scale (CB), a 40-item questionnaire designed to identify the perceived costs and benefits associated with quitting or reducing marijuana use (Appendix E). The CB questionnaire was administered at baseline as well as 4, 10, 16, 22, and 28-month follow-ups. The measure includes 20 positive potential outcomes (e.g. I would expect to be healthier), which make up the Benefits scale, and 20 negative potential outcomes (e.g. I would expect to enjoy life less), which make up the Costs scale. The CB prompts participants to indicate their levels of agreement with various potential outcomes of marijuana abstinence or reduced use on a scale of 1, strongly disagree, to 5, strongly agree. The sums of these ratings for the 20 negative outcomes and 20 positive outcomes were used to calculate the Costs and Benefits scales, respectively. An overall measure of outcome expectancy (Benefits-Costs) was created, by subtracting the Costs scale from the Benefits scale, for use in the testing of the proposed causal model. Good reliability was observed for both the Costs (α = .82) and Benefits scales (α = .87).

Readiness to Change. The Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES; Miller & Tonigan, 1996) was administered to assess participants' readiness to change their marijuana use (Appendix F). The scale was originally designed to assess for readiness to change among heavy alcohol users and was modified to assess for readiness to change drug use for the purposes of this trial. The SOCRATES prompts participants to indicate their level of agreement with a series of 19 statements (e.g. I have a drug problem, Sometimes I

wonder if I'm an addict) on a scale from 1, strongly disagree, to 5, strongly agree. The scale was administered at baseline and at the 4, 10, 16, 22, and 28-month follow-up assessments. The instrument contains three subscales: Recognition, which Ambivalence, and Taking Steps. For all of the subscales, higher scores are indicative of greater readiness to change. Reliability analyses demonstrated good internal consistency for the Recognition (α = .83) and Taking Steps (α = .89) scales, but poorer internal consistency for the Ambivalence scale (α = .51).

Procedures

A brief screening interview (Appendix G) was completed by phone with interested callers to determine eligibility for the study. Participants were excluded from study participation if any of the following were indicated: younger than 18 years of age at the time of informed consent, lack of access to reliable transportation, residence outside a 60-mile radius of Seattle, used marijuana fewer than 50 days during the previous 90 days, consumed 6 or more drinks on 10 or more days during the previous 30 days, used illicit drugs (including prescription drugs not used as prescribed by a physician) within the same drug class for 10 days or more within the previous 30 days, involvement in treatment or 12-step group for alcohol or drug use during the previous 30 days, or the presence of medical or psychiatric problem that might interfere with participation in the study because of the need for hospitalization (e.g. senile dementia, current psychosis, risk of harm). Once it was established that a participant was potentially eligible, he or she was scheduled for an introductory meeting in order to determine final eligibility.

To begin the introductory meeting, participants engaged in the informed consent process during which they watched video in which a principal investigator provided an overview of the consent form (Appendix H), read and signed the consent form, and received a copy of the consent form for their own records. Next, an interviewer-administered questionnaire, the Basic

Demographic Sheet (BDS: Appendix I) was used to gather further demographic information necessary to determine eligibility. The BDS was used to determine the following exclusion criteria: future unavailability due to legal problems or potential incarceration, mandatory drug testing conditional for employment or legal status, referred by a judge or parole officer as an alternative to incarceration, refusal to be randomized to condition, and not fluent in English. Regardless of eligibility status based on the BDS, selected modules from the Structured Clinical Interview for DSM-IV (SCID; First, Spitzer, Gibbon, & Williams, 1996) were administered to make the final determination of eligibility. SCID modules were used to confirm that participants were dependent on marijuana, not dependent on any other substance, and not actively psychotic. All participants were administered the SCID marijuana abuse and dependence modules as well as a screener for drug and alcohol use. Based on the screener, participants who drank 5 or more days within the 90-day window were administered the SCID alcohol dependence module; participants who used illicit drugs other than marijuana (including prescription drugs not used as prescribed by a physician) within the same drug class 2 to 9 times in a one-month time frame in the past 90 days were administered the SCID dependence module for the drug class(es) they reported using. Participants who reported using drugs other than marijuana more than 9 times in one month were ineligible for the study. Participants who displayed symptoms of active psychosis were administered the Psychosis module of the SCID to determine whether they met criteria for psychosis. Participants who were deemed eligible after the administration of the SCID modules were invited back for a baseline assessment and given a packet of self-report questionnaires to complete at home and bring to the baseline assessment.

At the baseline assessment, participants were asked to provide information about their recent marijuana, alcohol, and other drug use via a timeline follow-back interview (Sobell &

Sobell, 1992). Participants also provided a urine sample that was sent to an independent laboratory for analysis. Finally, participants were randomized to either the 9-session or PRN condition. Participants were re-assessed at 4, 10, 16, 22, 28, and 34 months after the baseline. At follow-up assessments, participants were asked to complete a packet of self reports, provide a urine sample, participate in a TLFB assessment, and complete a SCID interview for marijuana dependence. For the purposes of the present analyses, only treatment outcome data from the 4, 16, and 34-month assessments were used, in order to reduce the number of predictive analyses and the potential for Type I errors.

Results

Preliminary Analyses

Four participants who were abstinent for two weeks prior to the baseline assessment were excluded from the following analyses because instructions asked participants to rate how their current marijuana use affects their goals. As a result, these abstinent participants answered this question differently than the majority of participants who were using marijuana regularly at baseline. An additional case was excluded because goal rankings were not provided and, consequently, mean ratings for the top five ranked goals could not be computed. The resulting sample of 82 participants was used to conduct the subsequent analyses.

Of the sample of 82 participants included in the analyses, 94% of participants completed the 4-month follow-up assessment, 88% completed the 16-month assessment, and 80% completed the 34-month follow-up. To examine the potential effect of assessment attrition on the observed results, a series of one-way Analyses of Variance (ANOVAs) was used to compare baseline characteristics of those who completed follow-up assessments to those who did not complete follow-ups. When completers from the 4-month follow-up were compared to non-

completers, no significant differences on demographic variables, baseline predictors, or control variables were observed. At the 16-month follow-up, however, a significant difference between completers and non-completers was observed on baseline Taking Steps ($F(1, 80) = 5.05$, $p = .03$), such that non-completers had higher ratings of baseline Taking Steps. This difference between completers and non-completers was also observed at 34-months ($F(1, 80) = 5.65$, $p = .02$). Assessment completers at 16 and 34-month follow-ups did not significantly differ from non-completers on any other baseline predictors or control variables. Descriptive statistics for the control variables and predictors, as measured at baseline are provided in Table 1.

Bivariate correlations among predictors were examined to understand of how the various motivational predictors were associated (See Table 2). Conflict ratings were significantly and positively correlated with Happiness and Importance. Importance was also positively associated with Success and Happiness. Correlations among life goal ratings and Costs and Benefits scales showed that Costs was negatively correlated with Success, Benefits was positively associated with Conflict, and Benefits-Costs was positively correlated with both Success and Conflict. The scales from the SOCRATES showed that Conflict was significantly positively correlated with Recognition and Ambivalence, but not Taking Steps. Taking Steps was, however, correlated with Importance, Effort, and Success.

Hypothesis One

As an initial step in evaluating the first hypothesis that higher ratings of conflict between life goals and marijuana use would be associated with better treatment outcome, partial correlations between the motivational predictors and marijuana use outcome variables (percentage of days of marijuana use, number marijuana related problems, and number marijuana dependence symptoms) at 4, 16, and 34-month follow-ups were examined controlling for the

corresponding baseline measure of marijuana use or related consequences. Goal Conflict did not predict change in treatment outcome variables at either the 4-month or 16-month follow-up; at 34-months, Conflict predicted an increase in symptoms of marijuana dependence, but did not predict problems or percentage of days of use (See Table 3).

To rule out the possibility that treatment condition interacted with Goal Conflict ratings in predicting outcomes, a hierarchical regression approach was used. In each model, the baseline measure of the outcome of interest was entered as the first step. Conflict and treatment condition were entered as the second step. In order to enter the categorical treatment condition variable into the regression model, treatment condition was dummy-coded such that 0 represented the 4-session condition and 1 represented the 9-session condition. Additionally, Conflict was mean-centered (by subtracting each score by the mean Conflict score) in order to enhance the interpretability of the interaction term, which was created by multiplying the dummy-coded treatment condition by the mean-centered Conflict. The interaction term was entered into the regression model as a final step. Neither treatment condition nor the interaction term was a significant predictor of any of the treatment outcomes at 4, 16, or 34 months.

The relationships between other life goal scales and marijuana outcomes at follow-ups were also explored and partial correlations are displayed in Table 3. Results indicated that Importance and Success predicted an increase in marijuana use sporadically, at the 16-month follow-up only. Happiness was associated with an increase in marijuana use at all time-points as well as marijuana dependence symptoms at the 16-month follow-up. Predictors from other measures were also included in Table 3. Of the Costs and Benefits scales, Costs predicted an increase in both marijuana problems and dependence symptoms at 4 months and Benefits-Costs predicted a reduction in marijuana symptoms at 34 months. Of the SOCRATES scales, only

Taking Steps was associated with treatment outcome, predicting a reduction in marijuana dependence symptoms at 4 and 16 months.

Hypothesis Two

To test the second hypothesis that ratings of life goal importance would interact with perceived conflict to explain additional variance, an interaction term for life goal conflict and importance was created. Prior to the creation of the interaction term, Importance and Conflict were mean-centered in order to enhance model interpretability and reduce multicollinearity. Hierarchical regression was used to regress marijuana use outcomes onto predictors, with the baseline outcome variable entered as step one, mean-centered Importance and mean-centered Conflict entered as step two, and the interaction term entered as step three. With the exception of Importance, which was a significant predictor of percentage of days of use at 16 months (β = .31, $t(70) = 2.60$, $p = .01$) , neither of the main effects nor interactions were observed at any of the follow-ups.

Hypothesis Three

Table 4 shows the frequency of various types of goals at baseline. Achievement and personal growth and health goals were the most common categories of goals, followed by intimacy and affiliation. To test the hypotheses that achievement, affiliation, and intimacy goals would be associated with better treatment outcome, partial correlations between the presence versus absence of goals in each content category and marijuana use outcome variables were calculated, controlling for the corresponding baseline measure of marijuana use or related consequence (See Table 5). Results indicated that achievement goals were not associated with treatment outcome at any time-point. In contrast to predictions, affiliation goals were not significantly correlated with outcomes at 4 or 34-months, but were positively associated with

marijuana related problems and marijuana use at the 16-month follow-up. Intimacy goals were not significantly associated with treatment outcomes at any follow-ups, but negative correlations between intimacy goals and marijuana use approached significance at the 4 and 16-month assessments. Exploratory analyses were conducted with other goal content categories. Notably, spirituality goals were positively associated with marijuana use at the 4 and 16-month assessments as well as with marijuana-related problems and dependence symptoms at 16 months (See Table 5).

Causal Model

Although life goal conflict generally did not directly predict treatment outcome at follow-up, a model in which goal conflict predicted change in marijuana treatment outcomes indirectly was examined via path analysis using LISREL 8.8 software. The model predicted that goal conflict would influence outcome expectancies for reducing marijuana use. Outcome expectancies were expected to predict readiness to change. Readiness to change was expected to predict change in treatment outcome variables (See Figure 1). The model exhibited good fit when change in marijuana dependence symptoms at 4 months was used as the outcome variable ($x^2 = 1.74$, $p = 0.63$; RMSEA = 0.0; CFI = 1.00). Moreover, all causal paths were significant: Conflict directly predicted Benefits-Costs ($\beta = 0.30$, $p < .01$), Benefits-Costs directly predicted Taking Steps ($\beta = 0.36$, $p < .01$), and Taking Steps predicted a reduction in marijuana dependence symptoms at the 4-month follow-up ($\beta = -0.28$, $p < .01$; See Figure 2). Similarly, good model fit and significant causal paths were observed at the 16-month follow-up (See Figure 3). At 34 months, however, poor model fit was observed ($x^2 = 8.31$, $p = 0.04$; RMSEA = 0.14; CFI = 0.75); therefore, path coefficients for this model were not interpreted.

The model also showed a good fit when used to predict change in percentage of days of use at 4 months (x^2 = 0.54, p = 0.91; RMSEA = 0.0; CFI = 1.00). Additionally, when the causal paths were examined, Conflict directly predicted Benefits-Costs (β = 0.29, p < .01), which directly predicted Taking Steps (β = 0.37, p < .01); however, Taking Steps did not predict change in days of marijuana use at the 4-month follow-up (β = -0.09, p < .01; See Figure 4). Similar results (i.e. good model fit with non-significant casual path from Taking Steps to outcome variable) were found when this model was used to predict change in marijuana use at 16 and 34-month follow-ups, as well as when the model was used to predict change in marijuana-related problems at 4 and 16-month follow-ups. Poor model fit was observed when the model was used to predict change in marijuana related problems at 34 months (x^2 = 8.12, p = 0.04; RMSEA = 0.14; CFI = 0.82), so path coefficients for the model were not interpreted.

Discussion

The present investigation utilized data from a randomized controlled treatment trial to examine the influence of life goals on marijuana use, problems, and dependence symptoms following participation in marijuana dependence treatment. Results indicated that, overall, perceived conflict between marijuana use and life goals did not predict treatment outcome. Furthermore, of the significant correlations between life goal characteristics and follow-up rates of marijuana use and consequences, all were in the opposite direction as would be expected—that is higher ratings on the life goal were associated with higher rates of use, problems, and dependence symptoms at follow-up. The results also indicated that life goals in certain content areas predict change in outcome variables; however, this change was also in the opposite direction of what would be expected. Although life goal conflict did not predict outcome

directly, there was some evidence that it indirectly influenced better treatment outcome by way of outcome expectancies and readiness for change.

The first hypothesis that life goal conflict would be associated with reductions in marijuana use and related problems following treatment was not supported. Conflict between life goals and marijuana use was generally not a significant predictor of reduced marijuana use and associated problems. Conflict scores predicted marijuana dependence symptoms at the final follow-up assessment but were associated with an increase in dependence symptoms, rather than a reduction as predicted. Previous studies found that perceived conflict between goals and marijuana use was associated with lower frequency of marijuana use and related problems (e.g. Simons & Carey, 2003), but these studies used college student samples rather than the clinical sample used in the current investigation. Most participants in the current study reported that their current level of marijuana use negatively affected their goals with a mean 4.23 on a five-point scale of life goal conflict. The homogeneity of responses and insufficient variance in the predictor may partially explain the lack of prediction of posttreatment outcomes.

Similarly, the second hypothesis that life goal importance ratings would interact with conflict ratings in the prediction of reduced marijuana use and consequences was not supported. Ratings of importance actually predicted increased marijuana use at 16 months but otherwise were unrelated to treatment outcome and did not moderate the associations with goal conflict. Again, the clinical sample utilized in this investigation differs from college student samples in previous studies and the limited range on life goal conflict may have also precluded detecting any interaction effects with importance ratings. The paradoxical finding that goal importance is associated with an increase in marijuana use was incongruous with previous studies in which

similar life goal ratings predicted less substance use (e.g. Palfai and Weafer, 2006); however, this finding is in need of replication before much weight is attached.

Predictions related to the content of life goals were similarly not supported. Interpersonal goals, namely goals of affiliation and intimacy, were hypothesized to be associated with better treatment outcome. Affiliation goals were actually associated with significantly more marijuana use and marijuana-related problems at the 16-month follow-up but otherwise were unrelated to outcomes. Intimacy goals tended to predict reduced frequency of marijuana use but only approached significance at 4 and 16-months. The results are not consistent with those reported by Simons, Christopher, Oliver, & Stanage (2006), who found that interpersonal goals were related to lower rates of marijuana use. The results of the present study suggest that certain types of interpersonal goals may relate to marijuana use differently in a clinical population, lending support for coding affiliation and intimacy goals separately in future research. Achievement goals, which were also expected to be associated with better treatment outcome, were not predictive of treatment outcome at any timepoint. Such a finding is consistent with the limited research on marijuana user's life goals (Simons, Christopher, Oliver, & Stanage, 2006) but inconsistent with findings in the alcohol literature showing that achievement goals predict less alcohol use. Again, differences in the populations sampled (i.e. college students versus clinically dependent users seeking treatment) may explain the different findings in the current study. For instance, while affiliation and intimacy goals may be impeded by marijuana use for college students, the marijuana-dependent participants included in the present study may be more likely to have relationships with people who approve of or accept their use. Thus, affiliation and intimacy goals may be less important influencers of marijuana use among marijuana dependent individuals. Additionally, college students are likely highly motivated by achievement, whereas

this older, marijuana-dependent sample may be less influenced by aspirations related to achievement. Interestingly, goals related to spirituality were a predictor of poorer treatment outcome across all outcome variables at the 4 and 16-month assessments. Given that only 12 participants endorsed at least one spirituality goal, replication is necessary in order to draw conclusions about this finding.

The causal model tested the prediction that life goal conflict would predict positive outcome expectancy for reduced marijuana use, which would predict readiness to change, which would then predict treatment outcome. Some support was seen for these theoretically-based predictions. For all models tested, greater life goal conflict predicted better outcome expectancy (i.e. greater benefits and/or fewer costs associated with reduced use) and better outcome expectancy predicted greater readiness to change (i.e. higher ratings on the taking steps scale). Readiness to change, however, was a predictor of outcome only for symptoms of dependence at 4 and 16-months. Despite the mixed findings, the observed results lend support to the proposed mechanism of action by which life goals may motivate one to change. Perceived conflict between use and goals appeared to contribute to an increased awareness of benefits of reducing use. Such an increase in awareness, as postulated by the Transtheoretical Model (Prochaska & DiClemente, 1982), leads to greater readiness for change. Future investigations may improve upon the model tested by examining the predictors tested over time in order to improve the ability to draw causal inferences about how motivation develops and change in marijuana use and consequences occurs.

The present study has several weaknesses. First, a large number of analyses were conducted, increasing the probability of finding a significant result by chance alone. It is possible that some of the paradoxical relationships observed are due to chance, rather than actual

relationships among the constructs. While the clinical sample utilized for this investigation may be considered a strength, the observed results were likely affected by the study sample in that nearly all of the marijuana dependent participants were experiencing problems related to their use at baseline. Consequently, most participants reported that their current level of marijuana use negatively affected their goals, which limited variability in the predictor. Additionally, there may have been problems with the way in which the Life Goals assessment measured life goal-marijuana use conflict. Specifically, the question associated with the life goal conflict rating asked about how one's *current* use affects one's life goals, but did not specify a window of time for the current period. As a result, some participants may have rated how their use in the past year affects their goals, whereas others may have rated how their use in the previous week affects their goals. Additionally, asking in reference to current marijuana use likely led to participants who were using less marijuana to report lower rating of life goal conflict; however, such participants may still have perceived that heavier use would have affected their goals negatively. The questionnaire may be improved by asking participants how marijuana use, in general, affects their goals. Alternatively, participants could be asked to rate how different levels of use (e.g. abstinence, weekend only, daily use) would affect their goals. Such questions would better tap into participants' perception of the influence of marijuana use on their goals and would also facilitate the examination of life goal conflict among users who have reduced or quit use. Using more consistent assessment, future investigations could examine how life goals measured posttreatment affect future relapse. Additionally, if the marijuana use referent were held constant, future studies could examine change in goal ratings as a function of treatment. It is possible that dependent individuals perceive their goals differently after participating in treatment and that the change in goal perception is a better predictor of change marijuana use.

Despite its weaknesses, the present investigation contributed to the literature by examining the life goals construct in the context of a marijuana treatment outcome study using a sample of heavy marijuana users. The findings of the study indicated that life goals were generally not predictive of reductions in marijuana use, problems, or dependence symptoms. It is possible that the results reflect an inherent difference in the motivating influence of life goals between dependent and non-dependent individuals. As there is evidence that clinical samples differ from college student samples in terms of number of goals listed, commitment to goals, and goal commitment relative to anticipated reward (Man, Stuchliková, & Klinger, 1998; as cited in Cox & Klinger, 2002), results from college student samples may not generalize to clinical samples. While life goals may be strong deterrents to marijuana use among non-clinical samples, the very nature of marijuana dependence may mean that users are more influenced by the immediate rewards of the substance and less apt to consider life goals when making a decision to use. Replication is necessary, however, in order to determine that unexpected results of this investigation were not a function of measurement error or insufficient power.

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Table 1

Descriptive Statistics for Predictors and Control Variables at Baseline

Measures	Minimum	Maximum	Mean	Std. Dev
Life Goal Scales				
Conflict with MJ Use	2.50	5.00	4.23	0.54
Importance	0.40	5.00	3.26	1.05
Effort	1.60	5.00	3.69	0.70
Success	2.00	5.00	4.15	0.67
Happiness	2.00	5.00	3.92	0.63
Costs and Benefits Scales				
Costs	1.90	4.45	3.12	0.54
Benefits	1.70	4.85	3.92	0.51
Benefits-Costs	-0.80	2.55	0.80	0.78
SOCRATES Scales				
Recognition	18.00	35.00	29.30	4.24
Ambivalence	10.00	20.00	16.51	2.51
Taking Steps	11.00	40.00	27.16	6.99
Control Variables				
% of Days of MJ Use	0.41	1.00	0.85	0.17
MJ Related Problems	0.00	17.00	8.83	3.40
MJ Depend. Symptoms	3.00	7.00	5.71	1.12

Note. MJ = marijuana, Depend.=Dependence

N=82

Table 2

Bivariate Correlations Among Predictors at Baseline

	Life Goal Scales				
Measures	Conflict with MJ Use	Importance	Effort	Success	Happiness
Life Goal Scales					
Conflict with MJ Use	1.00	0.24*	-0.13	-0.02	0.25*
Importance	0.24*	1.00	0.18	0.37**	0.54**
Effort	-0.13	0.18	1.00	0.13	0.13
Success	-0.02	0.37**	0.13	1.00	0.19
Happiness	0.25*	0.54**	0.13	0.19	1.00
Costs and Benefits Scales					
Costs	-0.07	-0.10	-0.22	-0.34**	-0.05
Benefits	0.40**	0.11	-0.19	0.11	0.08
Benefits-Costs	0.31**	0.15	-0.02	0.31**	0.08
SOCRATES Scales					
Recognition	0.33**	0.12	0.17	-0.08	0.13
Ambivalence	0.24*	0.02	-0.01	-0.15	0.02
Taking Steps	0.05	0.26*	0.35**	0.25*	0.09

Note. MJ = marijuana

*$p < .05$. **$p < .01$.

N=82

Table 3

Partial Correlations Between Predictors and Follow-Up Outcomes

	4-Months			16-Months			34-Months		
Measures	% Days MJ	MJ Problems	MJ Depend.	% Days MJ	MJ Problems	MJ Depend.	% Days MJ	MJ Problems	MJ Depend.
Life Goal Scales									
Conflict	-0.02	0.16	0.09	0.05	-0.04	0.11	0.15	0.02	0.29*
Importance	0.19	0.15	0.20	0.32**	0.13	0.16	0.20	0.12	0.24
Effort	0.00	-0.02	-0.20	-0.02	0.04	-0.07	-0.13	-0.20	-0.21
Success	0.15	-0.02	0.10	0.32**	0.18	0.20	0.02	-0.04	-0.01
Happiness	0.24*	0.11	0.11	0.37**	0.18	0.27*	0.27*	0.10	0.17
Costs and Benefits									
Costs	0.13	0.28*	0.24*	0.06	0.16	0.23	0.03	0.23	0.17
Benefits	-0.02	0.06	0.07	0.07	0.11	0.12	-0.11	-0.14	0.08
Benefits-Costs	-0.10	-0.18	0.14	0.01	-0.06	-0.09	-0.10	-0.25*	-0.08
SOCRATES Scales									
Recognition	-0.08	0.09	0.13	0.02	0.23	0.17	0.03	0.01	0.21
Ambivalence	-0.08	-0.03	0.07	-0.12	0.08	-0.01	0.06	0.14	0.22
Taking Steps	-0.12	-0.16	-0.30**	-0.07	-0.22	-0.31**	-0.09	-0.22	-0.18
N=	77	76	74	71	72	72	65	62	65

Note. MJ = Marijuana, Depend. = Dependence symptoms

*$p < .05$. **$p < .01$.

Table 4

Percentages of Life Goal Content Categories

Life Goal Category	% of Life Goals	% of Participants
Achievement	29.10	79.27
Affiliation	9.34	35.37
Intimacy	9.34	42.68
Power	0.00	0.00
Personal Growth and Health	35.32	86.58
Self-presentation	0.25	1.22
Independence	2.31	7.32
Maladaptive	1.49	6.10
Generativity	4.73	23.17
Spirituality	2.98	14.63
Other	4.23	20.73

Note. % of Life Goals=Percent of goals within content category out of total number of goals
% of Participants= Percent of participants with at least one goal within content category

Table 5

Partial Correlations Between Life Goal Content Categories and Outcomes

	4-Months			16-Months			34-Months		
Content Category	% Days MJ	MJ Problems	MJ Depend.	% Days MJ	MJ Problems	MJ Depend.	% Days MJ	MJ Problems	MJ Depend.
Achievement	-0.00	0.08	0.06	-0.07	-0.07	-0.01	-0.06	-0.01	0.21
Affiliation	0.16	0.20	0.00	0.32**	0.32**	0.21	0.01	0.06	-0.01
Intimacy	-0.20	-0.11	-0.13	-0.22	-0.19	-0.08	-0.06	-0.06	-0.03
Spirituality	0.39**	-0.21	0.23	0.28*	0.33**	0.29*	0.17	-0.03	-0.02
N=	77	76	74	71	72	72	65	62	65

Note. MJ = Marijuana, Depend. = Dependence symptoms
*$p < .05$. **$p < .01$.

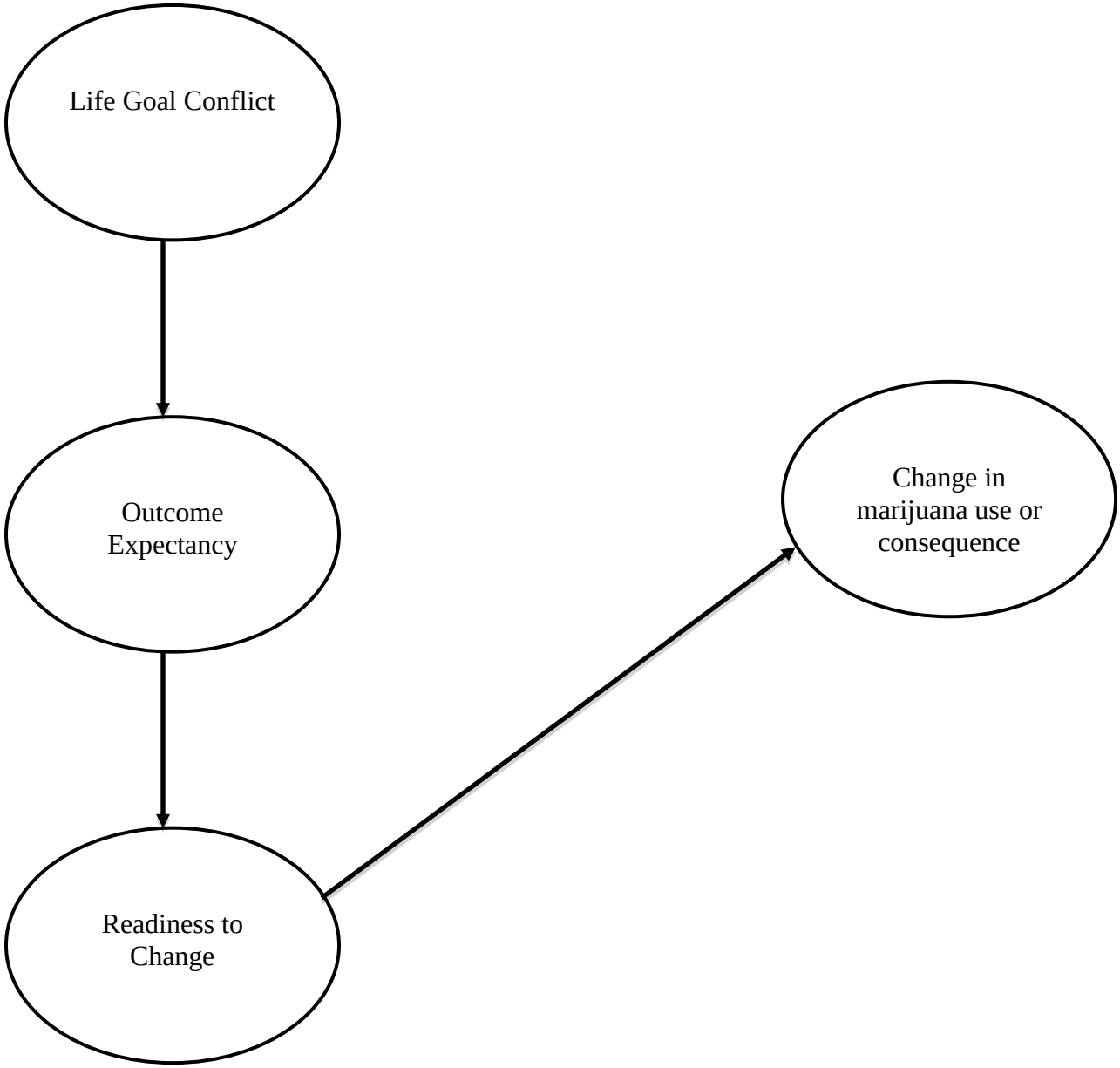


Figure 1. Path diagram depicting overall causal model tested.

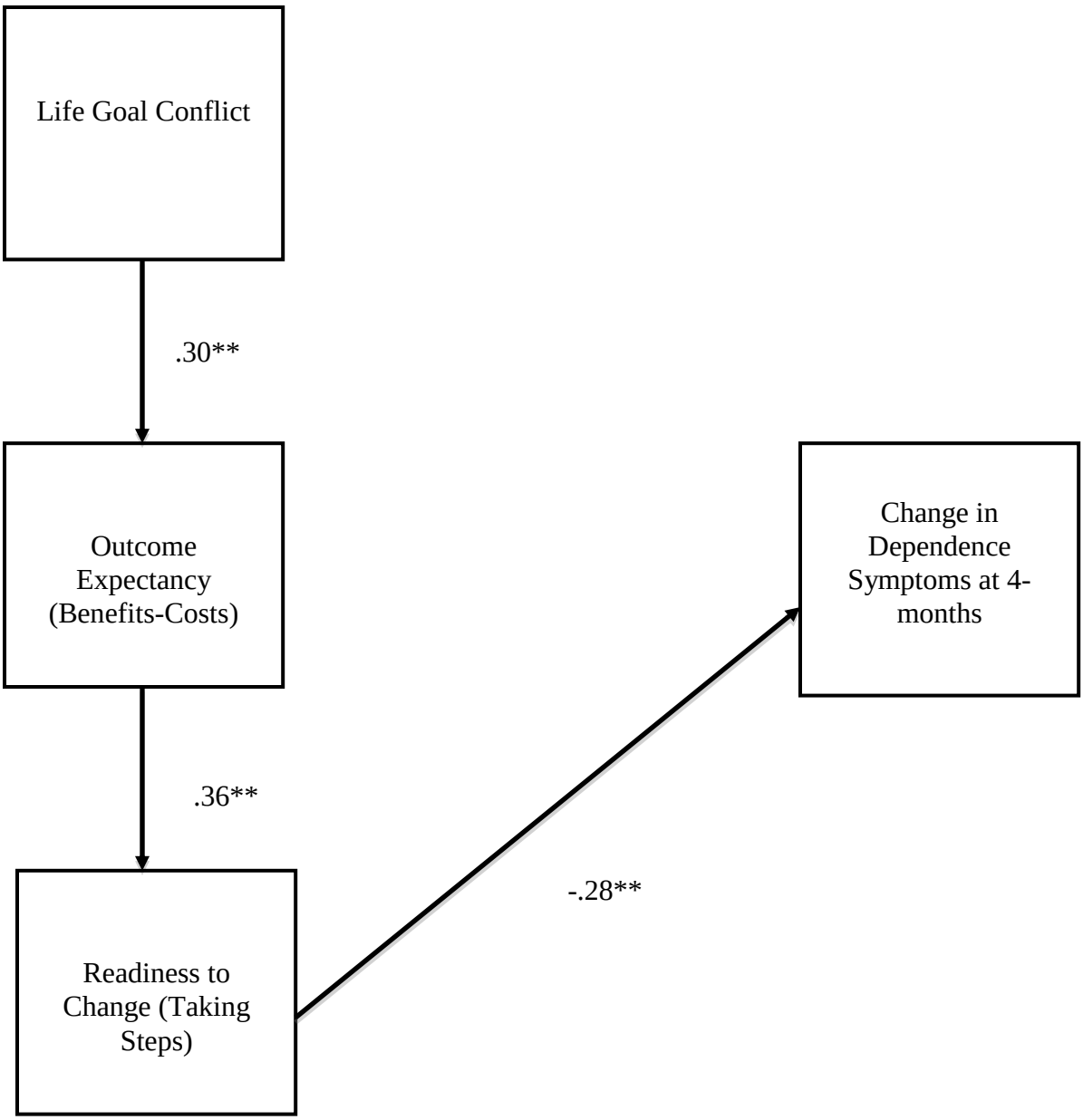


Figure 2. Path diagram depicting standardized beta coefficients of causal model in which change in percentage of number of marijuana dependence symptoms at 4-months is used as the outcome variable. $N = 82$. *$p < .05$. **$p < .01$.

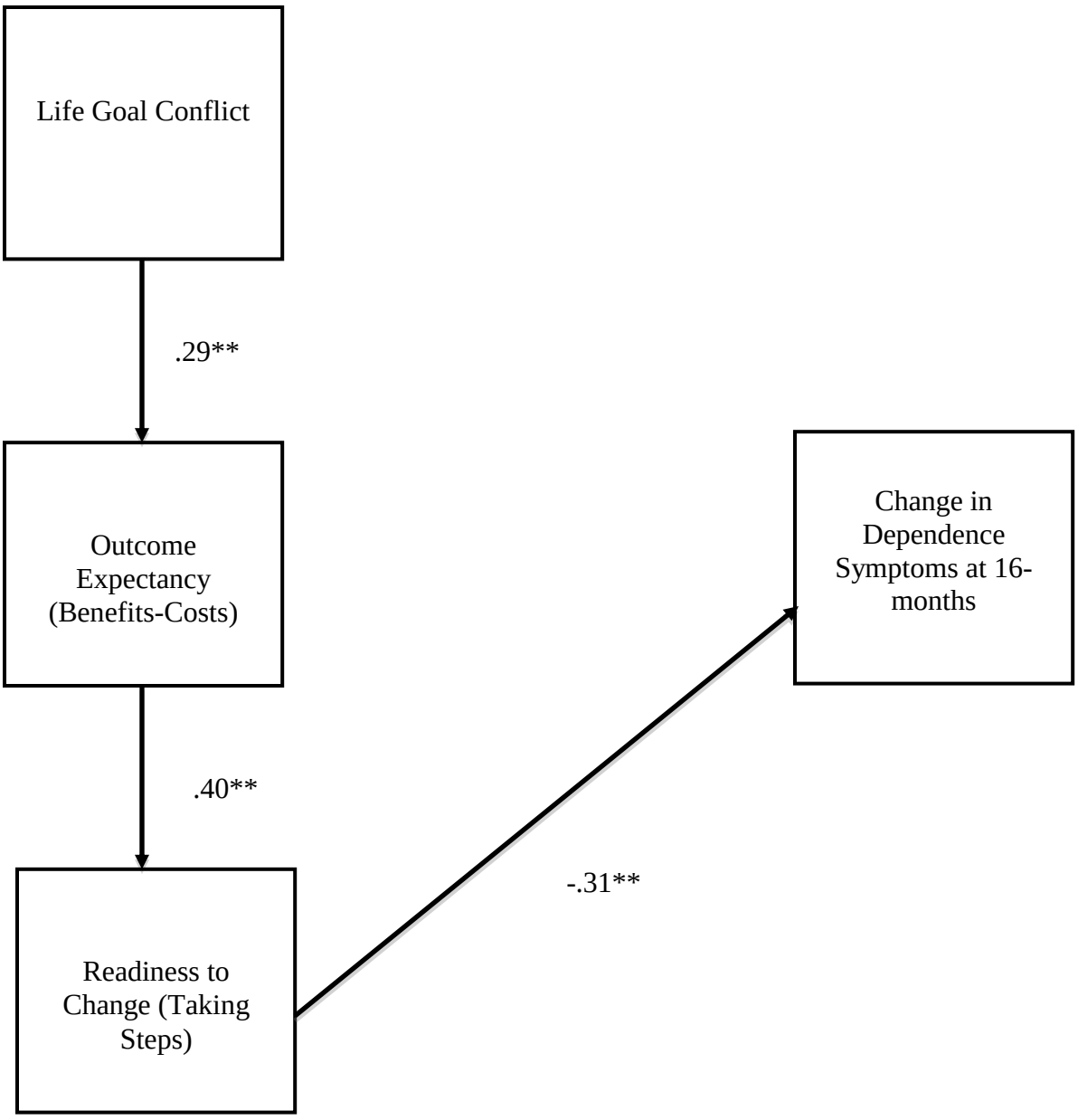


Figure 3. Path diagram depicting standardized beta coefficients of causal model in which change in percentage of number of marijuana dependence symptoms at 16-months is used as the outcome variable. $N = 82$. *$p < .05$. **$p < .01$.

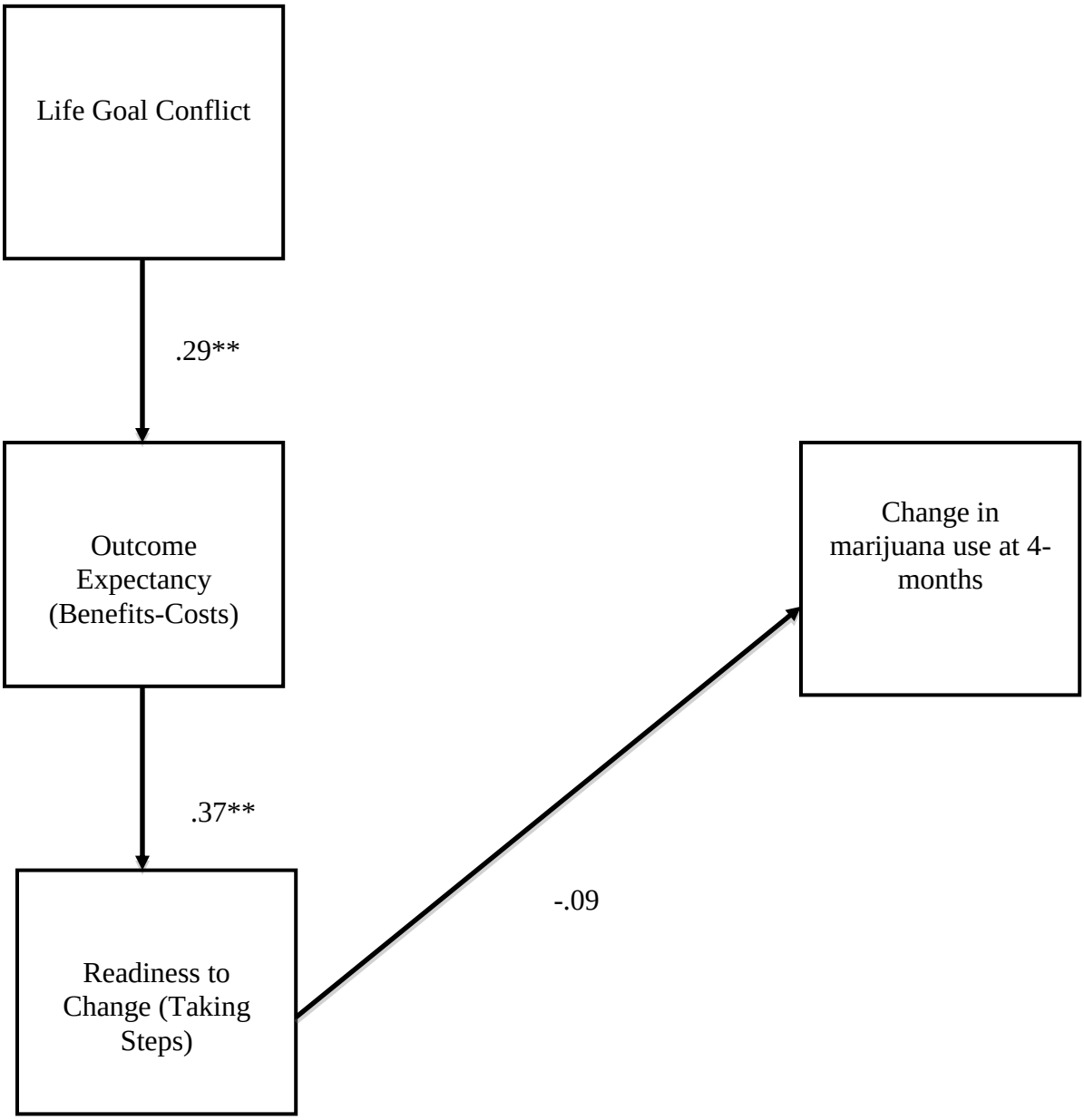


Figure 4. Path diagram depicting standardized beta coefficients of causal model in which change in percentage of days of marijuana use at 4-months is used as the outcome variable. $N = 82$. *$p < .05$. **$p < .01$.

Appendix A

LIFE GOALS ASSESSMENT

Used under fair use guidelines, 2011.

- **We are interested in the things that you typically are trying to do or would like to accomplish in the future. In other words, the goals you have in different areas of your life.**

Here are some examples of goals:

Trying to get along with others
Trying to develop my spirituality
Trying to help others in need of help
Trying to seek new and exciting experiences
Trying to avoid feeling inferior to others
Trying to develop and maintain close relationships
Trying to avoid conflict with my spouse or partner
Trying to advance in my career

- **Goals are things that you are "trying" to do, whether or not you are actually successful is not important. For example, you might "try to save money" without necessarily being successful.**

- **These goals may be broad, such as "trying to make others happy" or more specific "trying to make my partner happy". Also note that goal can be either positive or negative. That is, they may be about something you typically try to get or keep, or things that you typically try to avoid or prevent. For example, you might typically try to obtain attention from others, or you might typically try to avoid calling attention to yourself.**

- **You might find it useful to think about your goals in different domains of your life: work and school, home and family, social relationships, and leisure/recreation. Think about all of your desires, goals, wants, and hopes in these different areas.**

- **Since you may have never thought of yourself in this way before, think carefully about what we are asking you to do before you write anything down. Remember this is about you and not about comparing yourself to others. Be as honest and as objective as possible.**

Follow These 5 Steps:

STEP 1: In Column 1 on page 3 write at least 5 and up to 10 goals in the spaces provided on page 3.

STEP 2: In Columns 2-5 on page 3 rate your goals based on the dimensions (*Importance, Effort, Success, and Happiness*) described below. Note: The rating scales for the dimensions are clipped together in the accompanying packet.

Column 2 **Importance:**	We would like to know **how important each of your goals is to you in your life**, or, **how committed you are to working toward each of your goals?** For example, if your goal is "trying to get along with family," you would choose a number from the scale indicating how important it is. **See "Importance" sheet**
Column 3 **Effort:**	Each of your goals involves a different set of contributions from you—some take a lot of **time**, others may cost **money**, some **inconvenience** you, others **drain you emotionally** etc. **We are interested in how much effort or energy it takes on your part to be successful in each of your goals.** **See "Effort" sheet**
Column 4 **Success:** (Likelihood of being successful or probability of success)	We would like you to estimate **the overall likelihood that you will be successful (do well) in the future with each of your goals.** How likely is it (or how much do you expect) that you will succeed in your goals? Think in terms of specific goals. For example, if one of your goals is "to save money," how likely is it that you will be to, say, save $200 in the future? **See "Success" sheet**
Column 5 **Happiness:**	**How much joy or happiness do you or will you feel when you are successful in your goal**? For example, how **happy or joyous** would you feel if you succeeded in a goal that involved improving your relationship with your partner? See "Happiness" sheet

STEP 3: In Column 6 on page 3 rank order your goals from most important (1) to least important (10). See "Rank Order" sheet.

STEP 4: In Column 7 on page 3 rate how you think your current use of marijuana affects each of your goals by writing in the appropriate number. Note: If you have recently stopped smoking or reduced your marijuana use, then indicate how this changed smoking pattern (either reduced use or non-use) has affected each of your goals.
See "My Current Use of Marijuana Affects My Goal" sheet.

STEP 5: In Column 8 on page 3 rate how you think reducing your use of marijuana would affect each of your goals by writing in the appropriate number. See "Reducing My Marijuana Use Would Affect My Goal" sheet. Note: If you have recently stopped smoking, please leave Column 8 blank.

(Column) 1: List of Goals	2. Importance	3. Effort	4. Success	5. Happiness	6. Rank	7. Current marijuana use affects goals	8. Reducing marijuana use affects goals
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							

IMPORTANCE

This Goal Is:

0 = Not at all important to me

1 = Slightly important to me

2 = Somewhat important to me

3 = Moderately important to me

4 = Very important to me

5 = Extremely important to me

EFFORT

I put:

0 = No effort at all into this goal

1 = Very little effort into this goal

2 = Some effort into this goal

3 = Moderate effort into this goal

4 = Much effort into this goal

5 = Very much effort into this goal

SUCCESS

In achieving this goal, I believe I am:

0 = Not at all likely to succeed

1 = Very little likelihood of succeeding

2 = Somewhat likely to succeed

3 = Moderately likely to succeed

4 = Very likely to succeed

5 = Extremely likely to succeed

HAPPINESS

When I achieve this goal, I will feel:

0 = No happiness at all

1 = Slight happiness

2 = Moderate happiness

3 = Much happiness

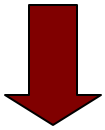
4 = Very much happiness

5 = Extreme happiness

RANK ORDER

Look at all goals listed and rank them in order of importance from 1-10 (or the last number of goals listed) where:

1 = Most Important Goal To Me



10 = Least Important Goal To Me

My Current Marijuana Use Affects My Goal:

1 = Very Positively

2 = Positively

3 = Neutrally

4 = Negatively

5 = Very Negatively

Note: *If you have recently stopped smoking or reduced your marijuana use, then indicate how this changed smoking pattern (either reduced use or non-use) has affected each of your goals.*

Thanks!

Reducing My Marijuana Use Would Affect My Goal:

1 = Very Positively

2 = Positively

3 = Neutrally

4 = Negatively

5 = Very Negatively

Note: If you have recently stopped smoking, please leave Column 8 blank. Thanks!

Appendix B

LIFE GOALS CONTENT CODING KEY		
Label	**Code**	**Descriptions**
Achievement	**1**	Goal related to competition, doing a task well, doing better than one has done before
		Reference to performance, winning, or competing with a standard of excellence
Affiliation	**2**	Goal that emphasizes an active need to be with others, making friends, being liked, gaining acceptance from others
		Goal about avoiding/preventing rejection or loneliness
Intimacy	**3**	Goal that emphasizes enjoying being with others, focusing more on the quality of the relationships rather than the quantity
		Reference to commitment or concern for others, improving communication, demonstrating loyalty and responsibility toward others
Power	**4**	Goal about establishing, maintaining, or restoring power
		Reference to having impact, control, influence over others; seeking fame or public attention
Personal Growth and Health	**5**	Goal with improving or maintaining one's health or avoiding illness
		Goal with improving aspects of the self-characterological changes by improving, maintaining, or enhancing self-esteem
Self-Presentation	**6**	Goal about making a favorable impression
		Reference to *appearance* of positive qualities or emotional states
Self-Sufficiency/ Independence	**7**	Goal about being individual, separated, autonomous, etc.
		Reference to seeking, establishing, maintaining independence or to asserting one's self and doing what one thinks is right
Maladaptive/ Self-defeating	**8**	Goals that reflect a lack of growth or adaptiveness; goals antithetical to those in category 5
		A desire to avoid choices that would result in positive growth or change
Generativity	**9**	Goals that relate to providing for the next generation or a desire for symbolic immortality
		Include references to artistic pursuits

Spiritual	**10**	Goals that involve an acknowledgement of and a desire to relate to a higher power, or to gain knowledge of that higher power
		Reference to the integration of the individual with larger units (other cultures, humanity as a whole, the natural landscape)
Other	**11**	Goals that do not fit into one of the other categories

Appendix C

TIMELINE FOLLOW-BACK TALLY FORM

Used under fair use guidelines, 2011.

****FOR THE 90 DAYS PRIOR TO BASELINE****								
Week	**# of days in week**	**# of Days of MJ use**	**MJ Uses Q1**	**MJ Uses Q2**	**MJ Uses Q3**	**MJ Uses Q4**	**# Alcohol Uses**	**# Drug Uses**
1								
2	7							
3	7							
4	7							
5	7							
6	7							
7	7							
8	7							
9	7							
10	7							
11	7							
12	7							
13	7							
14								
Total								

Appendix D

MARIJUANA PROBLEMS SCALE

Used under fair use guidelines, 2011.

Following are different types of problems you may have experienced as a result of smoking **marijuana**. Please circle the number that indicates whether this has been a problem for you in the **past 90 days**.

Has Marijuana use caused you:	**No Problem**	**Minor Problem**	**Serious Problem**
1. Problems between you and your partner	0	1	2
2. Problems in your family	0	1	2
3. To neglect your family	0	1	2
4. Problems between you and your friends	0	1	2
5. To miss days at work or miss classes	0	1	2
6. To lose a job	0	1	2
7. To have lower productivity	0	1	2
8. Medical problems	0	1	2
9. Withdrawal symptoms	0	1	2
10. Blackouts or flashbacks	0	1	2
11. Memory loss	0	1	2
12. Difficulty sleeping	0	1	2
13. Financial difficulties	0	1	2
14. Legal problems	0	1	2
15. To have lower energy level	0	1	2
16. To feel bad about your use	0	1	2
17. Lowered self-esteem	0	1	2
18. To procrastinate	0	1	2
19. To lack self-confidence	0	1	2

Appendix E

COSTS-BENEFITS SCALE

Used under fair use guidelines, 2011.

INSTRUCTIONS: Listed below are a number of situations which people sometimes report happen to them when they stop smoking marijuana or substantially reduce the amount of marijuana they smoke.

Indicate how strongly you agree or disagree that each of the following situations or effects that would happen to you if you stopped smoking marijuana or substantially reduced the amount you smoke. Circle the number that corresponds to how strongly you believe each outcome would occur.

If I stopped or cut back on my marijuana use . . .	**strongly disagree**	**somewhat disagree**	**don't know**	**somewhat agree**	**strongly agree**
1. I would expect to enjoy life less.	1	2	3	4	5
2. I would expect to feel better about myself.	1	2	3	4	5
3. I would expect to be able to think more clearly.	1	2	3	4	5
4. I would expect urges to smoke when I see marijuana or think about marijuana.	1	2	3	4	5
5. I would expect to be healthier.	1	2	3	4	5
6. I would expect to feel left out when others are smoking.	1	2	3	4	5
7. I would expect to be happier.	1	2	3	4	5
8. I would expect to be moody.	1	2	3	4	5

If I stopped or cut back on my marijuana use . . .	**strongly disagree**	**somewhat disagree**	**don't know**	**somewhat agree**	**strongly agree**
9. I would expect that others would respect me more.	1	2	3	4	5
10. I would expect to feel pressured by friends to smoke.	1	2	3	4	5
11. I would expect to have more self-respect.	1	2	3	4	5
12. I would expect to feel lonely.	1	2	3	4	5
13. I would expect to feel more in control of things.	1	2	3	4	5
14. I would expect to use alcohol or other drugs more often.	1	2	3	4	5
15. I would expect to be able to express my feelings to others more easily.	1	2	3	4	5
16. I would expect to miss the pleasure from being high.	1	2	3	4	5
17. I would expect to enjoy sex more.	1	2	3	4	5
18. I would expect to feel more tense or anxious.	1	2	3	4	5
19. I would expect it to be more difficult to sleep well.	1	2	3	4	5
20. I would expect to be more productive.	1	2	3	4	5
21. I would expect to feel more depressed.	1	2	3	4	5

If I stopped or cut back on my marijuana use . . .	**strongly disagree**	**somewhat disagree**	**don't know**	**somewhat agree**	**strongly agree**
22. I would expect to be more friendly and outgoing.	1	2	3	4	5
23. I would expect to be less outgoing around friends.	1	2	3	4	5
24. I would expect to have more difficulty controlling my temper.	1	2	3	4	5
25. I would expect to be bored more often.	1	2	3	4	5
26. I would expect my memory to improve.	1	2	3	4	5
27. I would expect to miss the good times had with others while high.	1	2	3	4	5
28. I would expect to be more relaxed and confident with others.	1	2	3	4	5
29. I would expect to be less talkative with friends.	1	2	3	4	5
30. I would expect to do better at my job.	1	2	3	4	5
31. I would expect to be less creative.	1	2	3	4	5
32. I would expect the world to look better.	1	2	3	4	5
33. I would expect life to be less fun.	1	2	3	4	5
34. I would expect to breathe easier and cough less.	1	2	3	4	5

If I stopped or cut back on my marijuana use . . .	**strongly disagree**	**somewhat disagree**	**don't know**	**somewhat agree**	**strongly agree**
35. I would expect to enjoy recreational activities less.	1	2	3	4	5
36. I would expect to have more energy to do things.	1	2	3	4	5
37. I would expect work to be less interesting.	1	2	3	4	5
38. I would expect to have better relationships with others.	1	2	3	4	5
39. I would expect to worry less about being caught.	1	2	3	4	5
40. I would expect to have more money.	1	2	3	4	5

41. Are there other costs or negative effects you would anticipate if you were to substantially reduce or stop your marijuana smoking? If so, please list them below.

_____

_____

_____

_____

42. Are there other benefits or positive effects you would anticipate if you were to substantially reduce or stop your marijuana smoking? If so, please list them below.

_____

_____

_____

_____

Appendix F

STAGES OF CHANGE AND TREATMENT READINESS SCALES

Used under fair use guidelines, 2011.

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. In the statements below, "drug" means smoking/using marijuana.

	Strongly Disagree	Disagree	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. Sometimes I wonder if my drug use is hurting other people.	1	2	3	4	5
7. I have a drug problem.	1	2	3	4	5
8. I'm not just thinking about changing my drug use, I'm already doing something about it.	1	2	3	4	5
9. 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
10. I have serious problems with drugs.	1	2	3	4	5

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

Appendix G

QUICK SCREEN INTERVIEW

Used under fair use guidelines, 2011.

PRNPID ____/____/____/____/	DATE: Month _____ Day _____ Year _____
PRNIID ____/____/	PRN Contact: ___ (1) in person ___(2) phone DE ____ V ____

Outcome of QS
Check one of the following:
☐ Ineligible
☐ Eligible but declined to participate
☐ Eligible but will call back
☐ Eligible and Intro Mtg scheduled for: _____(date) with _____(PRNIID)

The column to the left marked "Include" should be checked if the caller meets the inclusion criteria. The right column "Exclude" should be checked if the caller should be excluded from the study.

Criterion	Include (1)	Exclude (2)
1) **At least 18 years old**		
2) **Has access to transportation and is within 60 miles of the research site.**		
3) **Has residential stability, not planning to move.** • Callers who have no fixed address (e.g. live in halfway house or shelter) and will not be locatable within the next 12 months should be excluded. • Callers who are planning on moving out of the 60 mile radius of the research site within the next 12 months should be excluded.		
4) **Has smoked cannabis on at least 50 of the past 90 days.**		
5) **Not dependent on alcohol.** • Callers who drank 6 or more drinks per day on 10 or more of the last 30 days should be excluded.		
6) **Not dependent on illicit drugs other than marijuana** • Callers who have used any other drug on 10 or more of the past 30 days should be excluded.		
7) **Not involved in <u>therapy or treatment</u> related to marijuana, alcohol, or other drug use in the past 30 days.**		
8) **Not involved in 12-Step meetings related to marijuana, alcohol, or other drug use in the past 30 days.** • **Exception:** If caller attended <u>only 1 meeting</u> and is <u>definitely not planning to go back</u>, caller is eligible.		
9) **Not currently enrolled in MCU2 or TMCU.**		
10) **Does not live with anyone enrolled in the project.**		
11) **No evidence of medical or psychiatric difficulties that may interfere with participation.**		

Note: *Before starting the QS,* Establish the **Anchor Date: _____ (90-day)**

Take a few minutes to engage in dialogue with the caller. **Thanks so much for calling. What about the project got you interested in calling? Where did you hear about our project? _____** (*Listen carefully, use paraphrasing, ask if there were any other reasons, and summarize what you've been told) …* **Okay great.**

Have you called about the treatment program before? *If yes, try to determine whether or not a QS was previously completed for this caller.*

Let me tell you a little about the Marijuana Treatment Project. *(cover all bulleted items listed below.)*

- The Marijuana Treatment Project offers free counseling to adults who seek support in overcoming dependence on marijuana. If you join the project you'll receive confidential, free counseling.

- We're hoping to learn more about the effectiveness of two ways of timing counseling. Earlier programs made it clear that people trying to overcome marijuana dependence have benefited from between 1 and 18 sessions.

- In this project, we want to look at two different ways of timing counseling: Either a 9-session counseling program over a 3-month period, OR a 4-session counseling program over a 1-month period, plus additional sessions if needed.

- **Because this is also a research project, in addition to coming to the free counseling sessions, you'll also be asked to come in for follow-up interviews. These interviews are the research part of the project, and separate from the counseling sessions. We'll ask you to come in for these interviews every six months over a 3 year period to help us evaluate the counseling program.**

- **So that's a total of 6 research interviews spread over time, and you'll get $50 each time you come in for these interviews. These follow-up interviews are a <u>very</u> important part of this project, since it'll help us determine if our program can be used in other parts of the country.**

- **Just to clarify, you'll either get 9 sessions of counseling, OR 4 sessions of counseling plus additional sessions if needed. After your counseling sessions are done, you'll come in every 6 months for the follow-up interviews.**

- **Lastly, it's important for you to know that we will be very careful in terms of protecting your privacy. All of the information you share with us will be kept confidential.**

How does this sound so far? Do you have any questions?

- **If you're interested in joining our project, there are some questions I'll ask in order to get started and to learn if you are eligible--it'll take about 5 minutes. If it looks like you might be eligible to join the study, then we'll have you come in for a 45-minute appointment where we'll talk about more details of the project and ask you some additional questions to make a final decision about your eligibility, and also for you to decide whether or not you want to join the project.**

- **Some of the questions are personal and sensitive. For example, I'll ask about your use of marijuana, alcohol, and other drugs. At this point, I won't ask for your name. If we find that you're eligible and you would like to schedule an appointment, I'll ask you to give me your name then. This questionnaire is confidential and is identified by number only.**

Would you like to proceed now? *If yes, begin with questions. If no, but want to complete interview later, set up a time. If the caller does not want to answer the questions, thank them for calling and welcome them to call back if they change their mind.*

Yes ____ No ____ RA:_____ (initial)

I'm going to start with some general questions.

General Information

1) **What is your age**? ___/___

2) **What is your date of birth**? ____ / ____ / ____

3) Do not ask – What is the caller's Gender?
____ (1) Male
____ (2) Female

4) **To which ethnic or racial group do you belong**?
____ (0) White/Caucasian
____ (1) Black/African American
____ (2) Latino/Hispanic
____ (3) Asian/Asian American
____ (4) Native American
____ (5) Other :_____

5) **What is your marital status? (Read all responses to the participant.)**
____ (0) never married * *(ask if living with a significant other)*
____ (1) married *
____ (2) separated
____ (3) divorced
____ (4) widowed
____ (5) cohabiting (living with a significant other) *

6) *** If married or co-habiting, how long? _____ years**

7) **What is the highest grade of school or years of college that you have completed? (Include only academic institutions, i.e., colleges or universities, and not trade schools.)**

Grammar School	High School (GED)	College
01 02 03 04 05 06 07 08	09 10 11 12	13 14 15 16 17+

8) **What is the highest degree you have earned?**
____ (0) No degree
____ (1) High school
____ (2) Bachelors (B.A., B.S.)
____ (3) Masters (M.A., M.S.)
____ (4) Doctorate (Ph.D., M.D., or equivalent)

9) **How far do you live from the University of Washington in Seattle?**
Miles ___/___/___

10) **Do you have access to transportation**?
____ (0) No
____ (1) Yes
____ (2) Don't Know

11) **If you decided to participate in the project and were eligible, would the cost of travel or transportation prevent you from joining the project?**

____ (0) No____ (Yes) *If yes,* **We can offer you a roundtrip bus vouchers for all appointments.**

Residential History

12) **Do you live in a(n)** *(read all response categories to the caller)*

____ (1) Apartment or rented house
____ (2) Your own home (or home owned by your family)
____ (3) Room
____ (4) Shelter
____ (5) Halfway House
____ (6) No fixed address
____ (7) Other_____

13) **Are you planning to move out of the area within the next 12 months**?

____ (0) No
____ (1) Yes (explain)_____
____ (2) Don't know (explain) _____

Marijuana History

Now, I'd like you tell me about your use of marijuana during the past 90 days, that is since _____*90-day anchor date.*

14) **During the past 90 days, how many days did you smoke marijuana**? _____ days. *Assist the caller by probing number of times per week, for example. Help the individual with the math!*

15) **Now I'd like to get a sense of your thoughts about marijuana at this point. I'm going to read a few statements to you. Tell me which one represents how you feel <u>right now</u> about your marijuana use.**

____(1) I'm basically satisfied with my use of marijuana and do not plan to change it *(Precontemplation)*
____(2) I'm thinking about stopping or reducing my use of marijuana, but I don't think I'll begin doing that in the next 30 days *(Contemplation)*
____(3) I think I will stop or reduce my use of marijuana sometime in the next 30 days *(Preparation)*
____(4) Sometime within the past 6 months I stopped or reduced my level of marijuana use and I've not returned to my previous level of use *(Action)*
____(5) More than 6 months ago, I stopped or reduced my level of marijuana use and I've not returned to my previous level of use *(Maintenance)*

Alcohol History

Now I'm going to ask you some questions about your use of alcoholic beverages during the past 30 days, that is since _____ *30-day anchor date*.

16) **How many drinks do you have on a typical day when you are drinking**?
(Probe to determine # of standard drinks 12 oz. beer, 5 oz glass of wine, 1¼ of liquor)

____ (0) None (*Probe:* **So, no drinks in the past 30 days?**) *If none, then skip to next page.*
____ (1) 1-2
____ (2) 3-4
____ (3) 5-6
____ (4) 7-9
____ (5) 10 or more

17) **On how many days, during the last month did you drink six or more drinks**?

_____ Number of days during past month

Other Drug History

I'm going to ask you about your use of drugs other than marijuana, alcohol, and drugs you used as prescribed by a doctor. Have you used any of the following drugs during the past month?

Read checklist. If caller answers yes to any of the following, ask:
How many days have you used *name of drug* **in the past 30 days?**

Drug		Number of days in past 30 days
18) **Non-prescription use of Sedatives such as tranquilizers, barbiturates, Valium, Xanax, Librium, Rohypnol?** Hypnotics; Anxiolytics, or "Downers" like Quaaludes or "ludes", Seconal or "reds", Equinil, Nembutal, Tuinal, Fiorinal Miltown, Lotus 8, Dalmane, Halcion, GHB, Grievous Bodily Harm, G, Liquid Ecstasy, Georgia Home Boy, Roofies, Rophies, Forget-me pill	**____ (1) Yes ____ (0) No**	
19) **Non-prescription use of Opiates such as Analgesics; like opium, morphine**, **codeine, Demerol?** Darvon, Dilaudid, Percodan.	**____ (1) Yes ____ (0) No**	
20) **Cocaine such as Crack; Speedball?** Rock, Freebase	**____ (1) Yes ____ (0) No**	
21) **Non-prescription use of Stimulants such as Amphetamines; or "Uppers" (like "speed", ice, crank, crystal meth?** chalk, fire, Benzedrine Dexadrine, Ritalin, diet pills, STP)	**____ (1) Yes ____ (0) No**	
22) **Methadone?**	**____ (1) Yes ____ (0) No**	
23) **Heroin?**	**____ (1) Yes ____ (0) No**	
24) **Hallucinogens such as Ecstasy, LSD, mushrooms, PCP?** MDMA (also XTC,X, Adam, Clarity, Lover's Speed); (acid; Boomers, Yellow Sunshines); trip window pane, microdots, mescaline; peyote; buttons; psilocybin; Ketamine (Special K, K, Vitamin K, Cat Valiums)	**____ (1) Yes ____ (0) No**	
25) **Other (e.g., prescription drugs not being taken as prescribed by a doctor; inhalants)?** Specify_____	**____ (1) Yes ____ (0) No**	

Treatment or Other Research Participation

26) **In the past month have you received any treatment related to your marijuana, alcohol or other drug use**?

____ (0) No
____ Yes

Code the response according to one of the choices below:
____ (1) Inpatient program
____ (2) Outpatient or aftercare program
____ (3) Other—Please Explain_____

27) **In the past month have you attended any self-help groups, such as AA or NA related to your marijuana, alcohol or other drug use**?

____ (0) No (*skip to Question 30*)
____ Yes

Code the response according to one of the choices below:
____ (1) AA
____ (2) NA
____ (3) MA
____ (4) Other—Please Explain_____

If YES to Question 27, ask the following:

28) **How many times did you attend this self-help group(s) in the past month?**

____ (1) 1 time
____ (2) More than 1 time (how many?_____)

29) **Are you thinking about continuing to attend this self-help group?**

____ (0) No
____ (1) Yes
____ (2) Maybe
____ (3) I don't know

30) **Are you currently enrolled in any other marijuana specific research studies?**

____ (0) No
____ Yes

Code the response according to one of the choices below (do not read list):
____ (1) MCU2
____ (2) TMCU
____ (3) Other—Please Explain_____

31) **Do you know anyone who is currently enrolled in this project?**

____ (0) No (*if no, skip to Medical and Psychiatric History questions, or to Question 33)*
(1) Yes (ask for name) _____

32) *If yes,* **Do you live with that person**?

____ (0) No
____ (1) Yes

Medical And Psychiatric History

******Ask these only if the person is giving unintelligible responses or you suspect that they may have some psychopathology (e.g., discussing delusions)******

P0) Were the medical and psychiatric history questions asked? ____ (1) Yes ____ (0) No

P1) **Do you have a chronic medical or psychiatric problem that requires hospitalization**?

____ (0) No
____ (1) Yes, (Explain) _____

P2) **Are you currently receiving any psychotherapy or counseling for a psychiatric problem?**

____ (0) No
____ (1) Yes, (Explain) _____

P3) **Have you ever been hospitalized for a psychiatric problem?**

____ (0) No
____ (1) Yes, (Explain) _____

P4) **During the past three months, have you had difficulty controlling aggressive or violent behavior?**

____ (0) No
____ (1) Yes, (Explain) _____

If the caller meets exclusion criteria, continue on to explanation below labeled "EXCLUDED". If the caller meets inclusion criteria skip to explanation below labeled "INCLUDED ".

EXCLUDED CALLERS

Because this is a research project, we are faced with some constraints and limitations concerning the backgrounds and experiences of people we can enroll. Based on what you've told me, your background and experiences don't fit with the project's designed purposes. Thank you, however, for taking the time to answer the questions. If you are interested, we have an information packet regarding marijuana that could be mailed to you. *(If yes, ask for a name and address in order to mail the information.)* **Also, if you'd like, I can help you identify some local resources to consider.** *(If yes, provide the caller with information from the referral list).*

(If the caller has given his or her name) ***Because you won't be in this study, we will completely delete your name from our records.***

If the person asks for an explanation of the reasons for ineligibility, simply state that we cannot disclose them.

AS A LAST RESORT -- *If the person continues to ask about why they are ineligible or appears to be unhappy, simply state that we cannot disclose our eligibility criteria, because it may become public knowledge and bias people who call about the project in the future. In addition, suggest that he or she speak with the PI.*]

Included Callers

From the questions you have answered, it appears you may be eligible to take part in the MTP. We can schedule an appointment that will take about <u>45-minutes</u> to go over the details of the project and ask some more questions to make a final determination of your eligibility. There, you can decide if you want to be part of this project.

33) **Are you interested in making an appointment?**

____ (1) Yes (Schedule intro meeting)

____ (0) No (Go to question 34)

---

34) **May I have your permission to ask about your reasons for NOT wanting to participate? This will take only one or two minutes. All the information we collected today will be identified only by a 4-digit number, and we will not record your name anywhere. This data will be used for research purposes only, and will be destroyed within the next 6 years.** *Check off all reasons given. Probe once: "Anything Else?"*
If more than 3 reasons given, ask caller to indicate the 3 most important reasons.

___/___ Reason #1 ___/___ Reason #2 ___/___ Reason #3

Logistical/practical reasons:

____(1) Too much time required
____(2) Objects to UAs
____(3) Inconvenient loc/transportation problem
____(4) Childcare problem
____(5) Can't take time off from work
____(6) Wait to get feedback is too long

Treatment/program related:

____(7) Does not want random assignment
____(8) Does not want "experimental" feedback
____(9) Too intrusive/invasion of privacy
____(10) Thinks none of the feedback is valuable
____(11) Program too long/intense for needs
____(12) Program too short/superficial for needs
____(13) Prefers something else not offerd. by tx
____(14) Objects to having to return for FU
____(15) Dislikes one of the conditions
____(16) Prefers group format
____(17) Wants treatment not just feedback
____(18) Doesn't trust staff
____(19) Concerned about confidentiality

Influence of others:

____(20) Spouse/significant other
____(21) Other family
____(22) Friends/coworkers
____(23) Employer
____(24) Therapist/counselor
____(25) Health care provider
____(26) Clergy
____(27) Courts or legal requirements
____(28) Other patients
____(29) Hospital staff
____(30) Support grp/12-step fellowship grp
____(31) Other: specify _____

FOR CALLERS WHO SCHEDULE AN INTRO MEETING:

After scheduling the Intro Meeting with the participant, discuss the following items with the caller in order to assist them in arriving to the research site on time and conveniently.

- ☐ **Schedule them for an intro meeting (try within next 2 days).**

- ☐ **Give them our address, directions, phone numbers.**
  Entrance is in back of bldg.
  If after 5pm, they need to call using outside phone, we'll buzz them in.

- ☐ **Provide information on parking options around the research site area.**
  If the participant's scheduled appointment is between 9am-5pm:
  UW Medical Center underground parking lot just south of our office building.
  Remind them to bring their parking ticket to our office and we will reimburse them $4.00 for 1 to 1½ hrs (Intro Meeting, Baseline, Counseling Sessions, Follow-Up Interviews).
  If participant's scheduled appointment is after 5pm or on the weekend:
  Open parking lot just south of our office building,can park in any slot.
  Park on Roosevelt which has unlimited parking after 5pm.

- ☐ **Ask the participant what is the best way to remind themselves of the appointment:**
  Note attached to magnet on the refrigerator, on their calendar or appointment book, ask a friend to remind them, etc.

- ☐ *Tell them* **"We also ask that you come to the appointment in a sober condition and that you don't use alcohol or drugs prior to the appointment."**

- ☐ **Inform them that we will give reminder calls (unless it's the next day):**
  Reminder calls can be given anytime (day before, day of) at any phone number and location with as much discretion needed.
  Suggest an email the day of or night before their appointment if they check that more often.

- ☐ **Suggest that we be able to leave our phone number when giving the reminder call.**
  PRN line is answered with "The Marijuana Treatment Project" 206-616-3740.
  IPRG line (7:30am-5pm) is answered "Innovative Programs Research Group" 206-543-7511.
  (If it's an appointment after 5pm or on the weekend, the IPRG line gets forwarded so suggest PRN number).

- ☐ **Ask them to please call us if they need to reschedule or will be late.**
  Provide the caller with our email address and phone number.
  Email: iprg@u.washington.edu
  Have them ask for Allison, Becky, or Wakana if they call to reschedule.
  Otherwise, they can leave a message on our voicemail.

SCREENING OF MEDICINAL MARIJUANA USERS

*Ask the following question if the individual mentions that he/she is currently using marijuana for medical purposes or intends to do so.***You've mentioned the use of marijuana for medical purposes. I understand that this is a really important issue for you. Can I make sure, however, that you understand that the Marijuana Treatment Project is not a medical marijuana program? It's designed for people who want help in quitting marijuana use. It's not a program to help people acquire marijuana for medical purposes or to try to change the laws about medical marijuana. Let me stop and see if you have any questions.**

Appendix H

CONSENT FORM
Used under fair use guidelines, 2011.

University of Washington
School of Social Work

MARIJUANA TREATMENT PROJECT

Staff

Director:	Dr. Roger Roffman, Professor, School of Social Work, 4101 15th Avenue N.E., Seattle, WA 98105, (206) 543-2312.
Co-Director:	Dr. Robert Stephens, Associate Professor, Department of Psychology, Virginia Tech, Blacksburg, VA 24060, (540) 231-6304.
Enrollment and Assessment Coordinator:	Wakana Tsuru, Innovative Programs Research Group, 909 N.E. 43d, Suite 304, Seattle, WA 98105. (206) 616-3740.
Research Interviewers:	Allison Howard and Becky Resnick, Innovative Programs Research Group, 909 N.E. 43d, Suite 304, Seattle, WA 98105. (206) 616-3740.
Counselors:	Candace Conte, Ernie McGarry, and Marc Redmon; Innovative Programs Research Group, 909 N.E. 43d, Suite 304, Seattle, WA 98105. (206) 616-3740.

Researchers' Statement

We are asking you to be in a research study. The purpose of this consent form is to give you the information you will need to help you decide whether or not to be in the study. Please read the form carefully. You may ask questions about the purpose of the research, what we would ask you to do, the possible risks and benefits, your rights as a volunteer, and anything else about the research or this form that is not clear. When all your questions have been answered, you can decide if you want to be in the study or not. This process is called "informed consent." We will give you a copy of this form for your records.

Purpose and Benefits

This project is for adults who wish to receive support in quitting marijuana use. We will evaluate two approaches to counseling, and we hope to learn how effective each of these approaches is with 86 men and women such as you. Because we believe that both

approaches will be helpful, by participating you may find that the experience will assist you in abstaining from marijuana.

Procedures

There are three steps for participants in the Marijuana Treatment Project:

The 1st Step: Initial Assessment. If you agree to participate, the first step is an Initial Assessment that starts today. We will ask you questions about your background and about particular experiences you may or may not have had with marijuana, alcohol, and other drugs. Your responses will help us know whether our project is right for you and whether you are eligible to participate. This will take between 20 and 40 minutes.

If you are eligible and decide to participate, we will ask you to complete a questionnaire at home. Completing the questionnaire will take about 30 to 60 minutes.

We'll ask you to return to this office about a week from now and bring the questionnaires you completed at home. We will ask you more questions about your marijuana, alcohol, and other drug use; the positive and negative experiences you may have had in using marijuana and other substances; and attitudes you might have concerning future marijuana use. Because some of these questions will focus on illegal drug use (example: "How many times have you smoked marijuana in the last 30 days?"), they will be personal and sensitive. However, you are free not to answer any questions you do not wish to answer. That visit will take about one hour.

The 2d Step: Counseling. The second step involves counseling. You will be assigned to one of two possibilities. We'll make this assignment randomly (like flipping a coin).

Both of these possibilities are aimed at increasing your motivation, teaching you skills to achieve abstinence and cope with problems related to quitting marijuana use, and helping you to identify and make use of helpful community resources.

The two possibilities are:

- Meeting with a counselor for nine individual 60-90 minute sessions over a 12-week period.

or

- Meeting with a counselor for four individual 60-90 minute sessions over a 4-week period, and having the opportunity to return for brief periods of counseling, if necessary.

The 3d Step: Follow-Up Assessment Interviews. To help us evaluate the Marijuana Treatment Project, we'll schedule you to return for Follow-Up Assessment Interviews 4, 10, 16, 22, 28, and 34 months from now. Each of these interviews will last about 1½

hours and we will pay you $50 for completing each one. We will again ask numerous questions about your marijuana and other drug use, as well as attitudes about the future. In summary, your total period of involvement with our project will be about 3 years.

Urine Tests. As part of the research evaluation, you will be asked to give samples of your urine to verify your reports regarding drug use. The first time you'll be asked to do this will be at your next visit. Then, you'll be asked to submit urine samples at each Follow-Up Assessment Interview (4, 10, 16, 22, 28, and 34 months from now). Urine samples will be tested for the presence of: amphetamines, barbiturates, benzodiazepines, cocaine, marijuana, methadone, methaqualone, opiates, phencyclidine, and propoxyphene.

Collateral. We will ask you to seek the permission from someone who knows you closely (such as a family member or friend) to be interviewed by us now (by telephone or by a mailed questionnaire) and at about the same time you're coming in for your Follow-Up Assessment Interviews. This person, called a Collateral, will be asked to describe what they know about your recent use (or non-use) of marijuana, alcohol, and other drugs. What your Collateral tells us will be kept confidential and won't be shared by us with you.

Videotaping. We ask that you grant us permission to videotape both your assessment and counseling sessions. The camera will be aimed only at our staff member, and your image will not be recorded. These tapes will not be stored with your name on them, and they will be kept in locked storage cabinets. The purpose of the videotapes is to assist us in determining the consistency of our planned services with each participant. The tapes will be erased within six years of today's date. Only members of this project's staff will have access to these tapes.

Risks, Stress, or Discomfort

Because we will be asking you personal questions about activities that are illegal, and because we will be testing your urine, it would be risky to you if the information you share with us or the results of your urine tests were disclosed to outsiders.

However, we have taken several steps to make certain that this does not happen: (1) our staff members have pledged in writing to maintain confidentiality of everything told to us; (2) your questionnaire and interview responses will be filed separately from your name; (3) all questionnaires will be stored in locked filing cabinets; (4) all information about you that is entered in computers will be protected by passwords known only to our staff; and (5) your urine specimens will not have your name attached to them.

To help us protect your privacy, we have obtained a Certificate of Confidentiality from the National Institutes of Health. With this Certificate, we cannot be forced to disclose information that may identify you, even by a court subpoena, in any federal, state, or local civil, criminal, administrative, legislative, or other proceedings. We will use the

Certificate to resist any demands for information that would identify you, except as explained below.

The Certificate cannot be used to resist a demand for information from personnel of the United States Government that is used for auditing or evaluation of Federally funded projects or for information that must be disclosed in order to meet the requirements of the federal Food and Drug Administration (FDA).

You should understand that a Certificate of Confidentiality does not prevent you or a member of your family from voluntarily releasing information about yourself or your involvement in this research. If an insurer, employer, or other person obtains your written consent to receive research information, then we may not use the Certificate to withhold that information.

The Certificate of Confidentiality does not prevent us from disclosing voluntarily, without your consent, information that would identify you as a participant in the research project under the following circumstances: (a) if you are abusing or neglecting your child(ren) or an elderly adult; (b) if you are a danger to yourself or others.

It might be stressful to answer questions about illegal drug use and your intentions about that in the future. However, we will do our best to ask questions in a sensitive manner.

Other Information

The information that you provide us will be treated confidentially, and only members of the project staff will have access to information that could identify you.

We will use this information to prepare articles for publication. No participant will be identified by name in these articles. We will destroy any identifying information you provide to us within six years from today's date. Urine samples will be discarded following testing.

Helping Us To Find You. You will be asked to provide the name of a person ("locator") who will know your whereabouts over the next three years so that they may help us locate you if you change your address without notice. If no one knows your whereabouts, public information sources, such as telephone directories, motor vehicle records, or public access locator services may be used to locate you.

Payments for Your Time. No payment is offered for the Initial Assessment or the meetings you will have with your counselor. As noted above, we will pay you $50 for your time and effort in completing each of Follow-Up Assessment Interviews 4, 10, 16, 22, 28, and 34 months from now. Thus, if you complete all six Follow-Up Assessment Interviews, we will pay you a total of $300.

You may refuse to participate or may withdraw from the study at any time without penalty or loss of benefits to which you are otherwise entitled.

_____

Signature of investigator Date

_____

Typed or printed name of investigator

Participant's Statement

This study has been explained to me. I volunteer to take part in this research. I have had a chance to ask questions. If I have questions later about the research, I can ask one of the researchers listed above. If I have questions about my rights as a research subject, I can call the Human Subjects Division of the University of Washington at (206) 543-0098 or Virginia Tech at (540) 231-4991. I will receive a copy of this consent form.

I (do) (do not) consent to the videotaping of my assessment interviews and intervention sessions.

I (do) (do not) consent to the audiotaping of my assessment interviews and intervention sessions.

_____

Printed name of participant

_____

Signature of participant Date

Appendix I

BASIC DEMOGRAPHIC INTERVIEW

Used under fair use guidelines, 2011.

1. *Take a few minutes to engage in dialogue with the potential participant.* **Thanks so much for coming in. How did you find out about the MTP?** *(Check only one)*

Specific advertisement for MTP

____ (1) The Stranger
____ (2) The Seattle Weekly
____ (3) KZOK
____ (4) Other _____

Outreach

____ (5) Flyer/Brochure (where picked up_____)
____ (6) Event (specify_____)
____ (7) Agency (specify_____)
____ (8) Website (received address from _____)
____ (9) Family/friend/relative
____ (10) Medical doctor / Practitioner (non-MD) (specify _____)
____ (11) Other
____ (12) Don't Know

2. **What is your current employment status?** *If ppt has dual roles, ask which is primary and code 2a and 2b.*

2a. Primary Role

____ (0) employed full time
____ (1) employed part time
____ (2) homemaker
____ (3) full time student
____ (4) part time student
____ (5) unemployed
____ (6) disabled and not working
____ (7) self-employed
____ (8) retired

2b. Secondary Role (skip if no secondary role)

____ (0) employed full time
____ (1) employed part time
____ (2) homemaker
____ (3) full time student
____ (4) part time student
____ (5) unemployed
____ (6) disabled and not working
____ (7) self-employed
____ (8) retired

3. *If employed* – **How long have you been at your present job?** *(If less than two weeks code 0 months; If 3 to 4 weeks, code 1 month)*

_____/_____ Years

_____/_____ Months

4. *If employed* – **Are you subject to drug testing at your workplace?**

____ (0) No
____ Yes
If yes, probe if
____ (1) random screening
____ (2) targeted screening, Explain_____

5. **Are you planning to change your employment situation within the next twelve months?**

____ (0) No
____ (1) Yes, Explain (e.g., going to full-time or part-time, going back to school, quitting job)
_____
____ (2) Don't know

6. **Do you currently have any legal problems such as being on probation or parole, awaiting sentencing, awaiting trial?**

____ (0) No
____ (1) Yes
____ (2) Don't Know

If Yes, which one?
____ On probation or parole (explain) _____
____ Awaiting sentencing (explain) _____
____ Awaiting trial (explain) _____

If caller is on probation or parole ask the following:

7. **Is mandatory drug testing a condition of your legal situation**?

____ (0) No
____ (1) Yes (explain) _____
____ (2) Don't Know

8. **Participation in the study requires that you be randomly assigned to one of the two conditions. Are you willing to be randomized**?

____ (0) No (Explain) _____
____ (1) Yes
____ (2) Don't Know (Explain) _____

9. Does the individual seem fluent in English?

____ (0) No (Explain) _____
____ (1) Yes
____ (2) Not sure, could be a problem, (Explain) _____

10. **In the past 90 days have you used marijuana to treat a diagnosed medical or psychological condition?** *(Indicate that marijuana did not have to be prescribed, they simply have to use marijuana to cope with a <u>diagnosed</u> physical or psychological condition)*

____ (0) No *(If "No", end BDS here)*
____ (1) Yes (explain) _____

12. *If yes to #11,* **Has your physician given you signed and valid documentation for you to use marijuana to treat a diagnosed medical or psychological condition?**

____ (0) No
____ (1) Yes

13. *If no to #12,* **Will you be seeking valid documentation?**

____ (0) No
____ (1) Yes