Effectiveness of a Motivational Enhancement Group Treatment in a Community Treatment Program with a Substance Abusing Population

Matthew S. Willerick
Western Michigan University

Follow this and additional works at: https://scholarworks.wmich.edu/dissertations

Part of the Clinical Psychology Commons, Psychiatry and Psychology Commons, and the Substance Abuse and Addiction Commons

Recommended Citation
Willerick, Matthew S., "Effectiveness of a Motivational Enhancement Group Treatment in a Community Treatment Program with a Substance Abusing Population" (2011). Dissertations. 482.
https://scholarworks.wmich.edu/dissertations/482

This Dissertation-Open Access is brought to you for free and open access by the Graduate College at ScholarWorks at WMU. It has been accepted for inclusion in Dissertations by an authorized administrator of ScholarWorks at WMU. For more information, please contact maira.bundza@wmich.edu.
EFFECTIVENESS OF A MOTIVATIONAL ENHANCEMENT GROUP TREATMENT IN A COMMUNITY TREATMENT PROGRAM WITH A SUBSTANCE ABUSING POPULATION

by

Matthew S. Willerick

A Dissertation
Submitted to the
Faculty of The Graduate College
in partial fulfillment of the
requirements for the
Degree of Doctor of Philosophy
Department of Psychology
Advisor: Scott T. Gaynor, Ph.D.

Western Michigan University
Kalamazoo, Michigan
August 2011
Motivational interviewing (MI) is a directive, client-centered intervention to elicit behavior change by assisting clients in the exploration and resolution of ambivalence toward change. MI-inspired approaches have been used in an attempt to facilitate change in a wide variety of domains including alcohol and drug abuse, safe water handling practices, dual diagnoses, gambling, spousal abuse, health related areas, mood and anxiety disorders, and parental engagement. MI seeks to resolve ambivalence in the direction of change by increasing the client’s self-efficacy. This is accomplished by combining client-centered (e.g., reflective listening) and directive strategies (e.g., attending selectively to change statements). The origins of MI are in the substance abuse field where it provided an alternative to harsher strategies among a population that is often described as treatment resistant.

The goal of the current study was to assess the effectiveness of motivational enhancement therapy applied in a group setting in a community substance abuse treatment agency. Group treatment involved eight sessions, each lasting 90 minutes, focused on the following topics: lifestyles, stages of change, ambivalence surrounding change, developing discrepancy, pros and cons of changing, values, self-efficacy, and planning for
change. Self-report measures from 82 individuals (70.7% male, mean age of 31) who received treatment were analyzed to determine what impact the treatment had on current substance use, self-efficacy, ambivalence toward a change in use, and the presence of change talk.

Participants did not report a significant decrease in their substance use during the treatment, but the results approached a significant trend suggestive of decreased use. In addition, no statistically significant changes in participants’ self-reported readiness to change or in their self-efficacy were observed. However, a statistically significant increase in change oriented talk was observed. Specifically, results suggested an increase in statements indicating a desire and intention to decrease substance use.

This uncontrolled effectiveness study of a motivational enhancement intervention in a community substance abuse clinic produced mixed results. The implications for the practice of motivational enhancement interventions in the community, the place of these data in the empirical literature, and how the findings fit with the theorized mechanisms of action are discussed.
Copyright by
Matthew S. Willerick
2011
Completing this research has capped a long journey which began as a simple interest in broadening my skills as a therapist by working with substance abusing populations. From this initial interest grew a deeper understanding of the significant struggles faced by those individuals who are pushing against the grasp of alcohol and other substances. I have worked with and been mentored by a number of people who have influenced me on my journey and I am truly thankful to have shared these experiences with you.

I have been fortunate enough to have had two individuals provide me with exceptional training and guidance throughout this wonderful experience of graduate school. Dr. Lester W. Wright, Jr. and Dr. Scott T. Gaynor have helped me prove to myself that I am capable of accomplishing truly wonderful things. Through stepping beyond what is expected of a professor and truly being my mentors, these two individuals are the reason I am where I am today. I am also grateful to Dr. Amy Naugle and Dr. C. Dennis Simpson. As members of my dissertation committee they have provided me with valuable feedback along with a sincere curiosity in my research focus.

I would like to thank Gabrielle S. Depaul whose countless hours of data input ensured a timely completion of this research. I would also like to thank my lab mates and dear friends that I have grown close to over the years. Your feedback, guidance, and friendly reminders that life shouldn’t be taken too seriously, have been more help than you will ever know. You are my peers, colleagues, and true friends. I would also like to thank the dedicated staff in the Department of Psychology at Western Michigan University.
Your drive to impact the next generation of clinical psychologists is reflected in your day-to-day activities and all that you have done for me over the years. Thank you!

My graduate training and clinical experiences were also shaped by my vast experiences at the University Substance Abuse Clinic. Through my experiences over the past four years providing services to both outpatient and incarcerated populations, I have learned more about myself as a clinician as well as a person than I could have ever hoped for. I am forever grateful for having served these populations and for having worked with the dedicated and wonderful staff at this facility. I would like to especially thank the director of the University Substance Abuse Clinic, Tom Blackmon, for his enthusiasm in my future and his support and belief in me. He has truly impacted my clinical skills and enjoyment in working with oftentimes difficult populations.

My graduate training culminated in one of the best decisions of my life through my completion of the clinical internship program in the United States Air Force at Wright-Patterson Medical Center. Being provided the opportunity to serve my country while at the same time receiving outstanding training is all that I could have hoped for and more. I am a better clinician, researcher, and person because of my involvement with the United States Air Force. The training staff at Wright-Patterson Medical Center is not only dedicated to preparing outstanding clinical psychologists, but officers as well. I would like to especially thank my individual supervisors, Dr. Sara Wright, Dr. Anne Dobmeyer, Dr. Kimberly Smeltzer, and Dr. Mario Nicolas, for the outstanding training they have provided me. I would also like to thank the entire training staff as, at one point or another, all have
open up their door to me for supervision and/or support during our time together. Lastly, I would like to especially thank Dr. Kenneth Furman. As a supervisor, officer, and training director, Dr. Furman provided me with a training experience that I will never forget. The mental health staff at Wright-Patterson Medical Center, in the Air Force, and in all of our armed forces truly impacts the invisible wounds of war and I am indebted to those who came before me.

My family and friends also deserve to be recognized for the support and guidance they have given me over the years. Understanding my struggles, my lack of time, and always being there for me in the end did not go un-noticed. Thank you all!

I cannot say enough about the love and unwavering support I have received from my partner in life, my best friend, and wife. Only she knows how much she has actually done for me and for us during this journey and I could never thank her enough. I could have never done it without her and I know without a doubt I would not be where I am today if a girl hadn't decided to call a boy. Lastly, to my daughter, Natalie, and to those who left us far too soon, you make me want to be a better person and I can only hope that I make you proud.

Matthew S. Willerick
## TABLE OF CONTENTS

ACKNOWLEDGMENTS .................................................................................. ii  
LIST OF TABLES ...................................................................................... viii  
INTRODUCTION ......................................................................................... 1  
  Substance Use Problems ................................................................. 1  
  Ambivalence ....................................................................................... 2  
  Treatment Approaches ................................................................... 4  
  Motivational Interviewing/Motivational Enhancement Therapy ....... 5  
Factors Hypothesized to Contribute to Increased Motivation and Behavior Change .................................................................. 11  
  Decreased Ambivalence for Change .............................................. 11  
  Increase in Client Self-Efficacy or Confidence ............................... 12  
  Increase in the Amount and Intensity of Change Talk ..................... 13  
  Group-Based Motivational Interviewing ....................................... 13  
CURRENT STUDY .................................................................................... 16  
Hypotheses ............................................................................................. 16  
  Hypothesis 1. ..................................................................................... 16  
  Hypothesis 2. ..................................................................................... 17  
  Hypothesis 3. ..................................................................................... 17  
  Hypothesis 4. ..................................................................................... 17  
  Hypothesis 5. ..................................................................................... 17
Table of Contents—continued

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method</td>
<td>17</td>
</tr>
<tr>
<td>Participants</td>
<td>17</td>
</tr>
<tr>
<td>Intervention</td>
<td>18</td>
</tr>
<tr>
<td>Measures</td>
<td>21</td>
</tr>
<tr>
<td>Primary Dependent Measure</td>
<td>22</td>
</tr>
<tr>
<td>Secondary Measures</td>
<td>22</td>
</tr>
<tr>
<td>Setting</td>
<td>23</td>
</tr>
<tr>
<td>Session Procedures</td>
<td>23</td>
</tr>
<tr>
<td>Procedures Specific to the Current Study</td>
<td>25</td>
</tr>
<tr>
<td>RESULTS</td>
<td>27</td>
</tr>
<tr>
<td>Descriptive Analyses</td>
<td>27</td>
</tr>
<tr>
<td>Analysis of Current and Past Substance Use</td>
<td>27</td>
</tr>
<tr>
<td>Hypothesis 1</td>
<td>27</td>
</tr>
<tr>
<td>Hypothesis 2</td>
<td>30</td>
</tr>
<tr>
<td>Hypothesis 3</td>
<td>31</td>
</tr>
<tr>
<td>Hypothesis 4</td>
<td>32</td>
</tr>
<tr>
<td>Hypothesis 5</td>
<td>33</td>
</tr>
<tr>
<td>Predictor Variables</td>
<td>35</td>
</tr>
<tr>
<td>DISCUSSION</td>
<td>39</td>
</tr>
<tr>
<td>REFERENCES</td>
<td>47</td>
</tr>
</tbody>
</table>
Table of Contents—continued

APPENDICES

A. Human Subjects Institutional Review Board Approval Letter .................. 54
B. Ten-Item Questionnaire ........................................................................... 56
C. USAC Client History/Assessment Instrument ........................................... 58
LIST OF TABLES

1. Demographic Characteristics ................................................................. 19
2. Substance Use Characteristics ............................................................... 28
INTRODUCTION

Substance Use Problems

A significant number of individuals in the population suffer from substance use problems, which are represented in the Diagnostic and Statistical Manual of Mental Disorders (revised 4th ed.) (DSM-IV-TR, American Psychiatric Association, 2000) as substance use disorders and fall into either substance abuse or substance dependence categories. According to the 2009 National Survey on Drug Use and Health, an estimated 22.5 million persons (or 8.9% of the population aged 12 and older) met DSM-IV diagnostic criteria for substance abuse or dependence in the past year (Substance Abuse and Mental Health Service Administration [SAMHSA], 2010). More specifically, 3.2 million people met diagnostic criteria for both alcohol and illicit drugs while 3.9 million were only dependent on or abused illicit drugs, leaving 15.4 million abusing or meeting diagnostic criteria for alcohol dependence without a co-occurring illicit drug use diagnosis (SAMHSA, 2010). In 2009, Marijuana was the most widely abused illicit drug, with pain relievers and cocaine following. Within this category, the number of individuals with pain reliever dependence or abuse has increased while cocaine dependence or abuse has declined. When comparing males vs. females, the rate of substance dependence or abuse was nearly twice as high for men in 2009 (11.9% vs. 6.1%). Looking at the frequency of use, an estimated 14.2% of past year marijuana users used on a near daily basis. Nearly 25% of the population, or 59.6 million people, reported engaging in binge drinking at least once in the last 30 days with binge drinking being defined as consuming more than 5
beverages containing alcohol in one sitting. Heavy drinking (5 or more binge drinking episodes within 30 days) was reported by 6.8% of the population or 17.1 million people. In regards to driving under the influence of illicit drugs, 10.5 million people or 4.2% of the population aged 12 and older reported engaging in the act in 2009 as compared to 12% of persons in this same age group driving under the influence of alcohol in the past year.

Recent data suggest that while 23.5 million persons aged 12 or older were in need of substance abuse treatment in 2009, only 2.6 million or 11.2% actually received it. While it is clear that a significant percentage of the population is in need of substance abuse treatment, a variety of reasons are given for not obtaining treatment. Based on data from 2006–2009, the most reported reason for not seeking treatment for a substance related issue was not being ready to stop using, or a lack of motivation to stop using. Therefore efforts aimed at increasing motivation to change may be beneficial in reducing substance use and increasing treatment attendance.

Ambivalence

As outlined above, a significant percentage of the substance abusing population that may refrain from engaging in treatment is not doing so, due to a lack of a complete desire to quit. More specifically many of the individuals who do not seek treatment, as well as many of those who do, appear to have a high level of ambivalence concerning changing their pattern of substance use. Ambivalence can be considered a normal response to a situation where change involves both pros and cons. As such, depending on the level of use and type of substance, it is not entirely surprising that many individuals entering treatment may be extremely ambivalent concerning a change in their substance use
(Miller & Rollnick, 2002). There are a number of reasons that would account for the presence of ambivalence in changing substance use. Due to its effects on the body, and the social contexts and relationship factors involved in using, substance use typically provides a mix of both reinforcing and punishing consequences. This blend of consequences likely contributes to the ambivalence and the difficulties involved in changing patterns of substance abuse. Reinforcing consequences of substance use tend to be relatively immediate, probable, and potent. That is, it doesn’t take an especially long period of time to experience the pleasant effects of the substance. Upon using, the effect of the substance has a high likelihood of occurring and the impact is one that is readily detectable to the user. These consequences are, however, relatively short-lived, prompting repeat use.

The reinforcing nature of substance use often comes in the form of positive reinforcement in that it provides some form of stimulation, pleasant feeling, or increased sense of arousal. Additionally, substance use often provides immediate escape from unwanted situations, including physical withdrawal and negative thoughts or emotions. On the other hand, punishment for substance use is often delayed, intermittent, gradual, and long-lived. Punishers for substance use may fit into one of many categories, including legal (jail, probation, etc.), financial (loss of job, loss of house, etc.), physical (disease, sickness, etc.), and social (loss of friends and family members). As previously stated, many of the punishers that happen may not occur for a long period of time after beginning substance use and are often intermittent (for example, individuals may drink and drive for several years before first coming into contact with the legal system for this behavior). Due to the immediate, probable, and potent reinforcing qualities of substance use and the delayed and intermittent presence of punishers (which represent the competing sources of
behavioral control), behavioral changes are often hard to follow and thus difficult to achieve. It is not surprising that many substance users are ambivalent about change. Further contributing to ambivalence about change is that many individuals who are referred for treatment present at the behest of someone else. While these individuals may have some awareness that their use is problematic, they may not be fully ready to engage in the change process (Gerstein & Harwood, 1990).

**Treatment Approaches**

There are a range of approaches available for the treatment of substance use disorders. Those with some empirical support include skills-based relapse prevention, 12-step programs, contingency management, and cognitive-behavior therapies (Horsfall, Cleary, Hunt, & Walter, 2009; Project MATCH, 1997a; Rawson et al., 2006; Wells, Peterson, Gainey, Hawkins, & Catalano, 1994). Some treatment options for substance use make use of confrontational styles or styles that explicitly and actively attempt to move the client directly toward change. Some have expressed a concern about the use of such approaches if they occur prior to a resolution of the client's ambivalence about change (Moyers & Waldorf, 2003). While explicit and active treatments pursuing change have been shown to be efficacious with some individuals, high relapse and dropout rates are often seen in substance disorder treatment (Brocato & Wagner, 2008; Brown, Zuelsdorff, & Gassman, 2009). It is speculated that active, direct treatment is best for those who are already motivated to change, while those who discontinue are disproportionately those with a great deal of ambivalence (Miller & Rollnick, 2002). As discussed above and as described by Miller, Yahne, and Tonigan (2003), lack of motivation for change is regarded
as one of the primary obstacles in treating alcohol and substance use disorders. Similar to other maladaptive behavior patterns, substance users who are unmotivated to change their use often make little to no corrections in their behavioral patterns despite experiencing significant adverse consequences. However, a high level of motivation for change has been shown to be a positive predictor of outcome in substance disorder treatment (DiClemente, Bellino, & Neavins, 1999; Miller, 2003). As such, interventions which target motivational factors have received significant attention in the field of addictions treatment (Bein, Miller, & Tonigan, 1993; Miller & Rollnick, 2002). One of those that has a significant empirical basis is motivational interviewing.

**Motivational Interviewing/Motivational Enhancement Therapy**

Motivational interviewing (MI, Miller & Rollnick, 2002) posits that motivation can be increased by increasing one’s awareness of the negative consequences of use and comparing that to personal life goals and values. This discrepancy is contacted through the use of person-centered, subtly directive methods of communication. These methods attempt to enhance the individual’s intrinsic motivation for change by guiding the client in exploring and eventually resolving ambivalence in the direction of change. MI refrains from directly challenging and confronting clients to change, believing this will only evoke from the ambivalent client a defense of current behavior (Miller & Rollnick, 2002). MI emphasizes a non-confrontational client-therapist relationship while still considering the interactions between the client and therapist as an integral part in increasing motivation for change. That is, the therapist does not explicitly and actively argue for change; instead
the therapist subtly encourages change via his/her interactional style. As such, MI is considered a client-centered, directive therapy.

MI places a strong emphasis on resolving ambivalence prior to using more obvious strategies designed to move the client toward change. This is compared to more traditional approaches that tend to be more action-oriented and often push change onto a client very early in the treatment process. When clients have mixed feelings about making the needed changes, the counselor’s pressure to change can inadvertently lead to client resistance, premature termination from counseling, and possible relapse due to clients overlooking internal and external factors that may lead to relapse. Miller and Rollnick (2002) indicate that five goals or points of focus should guide all treatment under the MI approach. First, MI is a client-centered approach that focuses on the concerns of the individual. As such, while MI might include teaching coping skills, reshaping cognitions, or dealing with past issues (especially when ambivalence is lessened) it does not prescribe a central psychological deficit upon which treatment must focus. Second, MI is more directive than the original approach of client-centered therapy defined by Rogers (1957, 1959) in that MI intentionally attempts to resolve the ambivalence that is present. This is typically done by selectively and subtly reinforcing and focusing on client emitted instances of change talk. Third, MI is a communication method rather than a set of separate techniques or a bag of tricks to get people to do what they aren’t ready to do. People change naturally; MI simply attempts to facilitate this change by using a communication style that quickens the pace. Fourth, MI focuses on enhancing intrinsic motivation for change or change that emerges from the client’s perspective even though facilitated by the therapist. It is suspected that such self-directed change attempts will be more sustained.
Lastly, MI focuses on resolving ambivalence that is present concerning change. The therapist does not attempt to move the client toward a change that does not coincide with the client’s stated values and goals.

MI emphasizes the role that collaboration between the client and therapist plays in effecting change (Miller & Rollnick, 2002). Motivational interviewing seeks to create a positive interpersonal atmosphere that is conducive to change. Throughout treatment, emphasis is placed on being honest and aware of one’s own aspirations for the client sitting in front of you. That is, if your aspirations are different than the client’s, this may lead to a less productive focus in the therapeutic session and may eventually evoke client resistance. Also within the spirit of MI is the continued effort to draw out intrinsic motivation for change from the client, with special emphasis on refraining from playing the “expert” role. The basic tenets of MI and humanistic theory assert that the relationship needs to be collaborative, but client-centered. While the therapist is assuming a subtle directive approach, this is done so as to pull or draw motivation out of the person, helping him/her make the decision to act. One indicator of increased intrinsic motivation is when the client sits squarely on the side of arguing for change. A primary in-session indicator is when the client engages in “change talk”, making statements expressing a desire, ability, reasons, need, and commitment to change. A variety of MI tactics are used to evoke these verbal expressions by the client that indicate movement toward the change side of ambivalence (Miller & Rollnick, 2002).

Several principles guide the general communication strategies used throughout MI. The expression of accurate empathy is a fundamental characteristic of all communication in MI. Providing accurate empathy is done in a way that does not judge, criticize, or
blame the client for his/her behavior. This follows the perspective of acceptance in that the counselor may not agree with the client’s perspective but through the use of reflective listening skills, he is able to demonstrate an understanding of the client’s feelings and perspectives. Additionally, increasing the client’s perceived discrepancy between present behavior and important personal goals and values assists with the resolution of ambivalence concerning change. Throughout the therapeutic process, resistance toward change may develop and can often be used in a therapeutic way to move the client to fighting for change rather than against it. Therapist behaviors can reduce the presence of resistance by not directly challenging client thoughts and behaviors, but by the therapist rolling with resistance when it is present in order to bring about a change in the client’s arguments against change. Lastly, supporting the client’s belief in his ability to succeed at a specified change (i.e., his level of self-efficacy) is also a key element and is considered an important predictor of treatment outcome (Miller & Rollnick, 2002).

Since the first publication on the basic skills and tenets of motivational interviewing in the early 1980s (Miller, 1983), over 900 articles or book chapters have been published on this therapeutic style. Numerous meta-analyses and systematic reviews have been conducted (Burke, Arkowitz, & Menchola, 2003; Dunn, DeRoo, & Rivara, 2001; Hettema, Steele, & Miller, 2005; Noonan & Moyers, 1997; Vasilaki, Hosier, & Cox, 2006), assessing the use of MI and adaptations of motivational interviewing (AMI’s and motivational enhancement therapy, MET) on a wide variety of populations and behaviors. Several recent systematic reviews on the implementation of MI have demonstrated that MI is an efficacious treatment for substance abusing clients. In a review of 12 controlled clinical trials completed by Miller and Rollnick (2002), comparing AMI to either no
treatment, placebo control treatment, or a more extensive treatment, AMI’s were shown to be strongly efficacious in 11 of the 12 studies. Their results also demonstrated AMI’s to have the highest evidence for overall effectiveness compared to social skills training and cognitive-behavioral therapy used alone.

MI approaches may also have better cost/benefit profiles. For instance, Project MATCH (1997a) compared four sessions of MET to 12 sessions of cognitive behavioral therapy and 12-step facilitation therapy. The results of Project MATCH demonstrated no difference between the three treatments tested. These results suggest equal effectiveness of MET therapy that was substantially shorter than the other two approaches. Results from randomized controlled trials comparing MI for alcohol use to no treatment demonstrated moderate effect sizes of .30 (Marlatt et al., 1998) to large effect sizes of .95 (Aubrey, 1998). A review completed by Noonan and Moyers (1997) identified nine randomized controlled trials that were completed with problem drinkers in a variety of settings. The results of this review indicate that MI proved to be efficacious at follow-up at reducing alcohol intake. A review done by Burke, Dunn, Atkins, and Phelps (2004) also suggested AMI was more efficacious than no treatment, placebo controls, and as efficacious as other active treatments for problem alcohol use issues. Additionally Burke et al. ’s review demonstrated that the effects of MI were greater at first follow-up than at the second follow-up, which may demonstrate the idea that individuals will eventually become motivated for change, but that MI assists them in moving down that road quicker. Heather, Rollnick, Bell, and Richmond (1996) examined the efficacy of MI over no treatment and other treatment approaches on readiness to change and found that brief motivational interviewing was more effective when participants were less ready to change at pre-treatment.
In a recent review, Hettema et al. (2005) reported large effect sizes when MI was added to the initial phase of treatment programs. This may be due to the effect that MI has been shown to have on treatment attendance as well as treatment retention (Brocato & Wagner, 2008; Brown et al., 2009). Overall, the evidence of randomized controlled trials appears to indicate that MI is an efficacious treatment method for substance use disorders which can impact both short and long-term change.

This movement from ambivalence to actively changing substance use is mirrored in the stages of change described by Prochaska and DiClemente (1982). This model for change identified five stages that people pass through prior to achieving a stable change in their maladaptive behavior. In this transtheoretical model, the person who is not actively considering change is initially in the precontemplation stage. During precontemplation stage, the individual is not ambivalent concerning his/her need to change the level of substance use and is not making any current attempts at change. Once the person begins weighing the costs and benefits of changing or maintaining drug use, s/he now has moved into the contemplation stage of change. Individuals may reside within this stage for an extended period of time while they are weighing the reasons for and reasons against change. Once ambivalence resolves into a commitment to make a change, the person then moves into the preparation stage. During preparation, the person takes active steps, preparing him-/herself and possibly significant others for the pending change in substance use. After preparing for change, people then progress into the action stage of change. The action stage is generally thought of as the stage in which change is initiated. Once the person has maintained active changes for an initial period of time they move into the maintenance stage. During this stage changes are stabilized and become a part of normal, daily routines.
Looking at these stages of change from the perspective of MI, one can see how MI attempts to guide clients through the stages by increasing level of motivation, decreasing ambivalence toward change, and increasing a commitment to action (Miller, 1983). From this perspective, while some individuals who are admitted into treatment may fall into the action or preparation stages, other individuals may be less motivated for change. Due to their lack of intrinsic motivation, many of these individuals would fit into the pre-contemplative or contemplative stage of change. As described above, the presence of ambivalence concerning a change in substance use is part of the contemplative stage of change. Using this ambivalence concerning reasons for change effectively is considered to be a key factor in MI treatment (Miller & Rollnick, 2002).

**Factors Hypothesized to Contribute to Increased Motivation and Behavior Change**

While external motivation may account for a percentage of behavior change in the field of substance abuse treatment, there are a number of variables that are hypothesized to increase the tendency for individuals to actively change their patterns of substance use. These variables include ambivalence, self-efficacy or confidence, and the presence of change talk.

**Decreased Ambivalence for Change.** In order to effectively move clients along the stages of change, ambivalence must be resolved prior to seeking a commitment to change. This theory is consistent with the spirit of MI in terms of the need to assist clients with getting “unstuck” from their current level of ambivalence toward change. This task is typically achieved by identifying and amplifying a discrepancy between the client’s present behavior and his/her life goals and stated values (Miller, Zweben, DiClemente, &
Rychtarik, 1992). This can be done by bringing about an awareness of the costs of one’s current behaviors and the advantages of future change. Specifically, MI attempts to amplify the level of intrinsic motivation by changing the person’s perceptions of the discrepancy (as being large) without them feeling coerced into the change. Special emphasis is placed on the client presenting the reasons for change, not the therapist. The MI therapist works to develop this situation by helping clients examine the discrepancies between current behavior and future goals. It has been found that clients tend to become more motivated to make life changes when they perceive a large discrepancy between current behavior and values (Deci & Ryan, 2008; Miller & Rollnick, 2002).

**Increase in Client Self-Efficacy or Confidence.** An additional indicator of a successful move from the contemplation stage of change is an increase in a client’s level of self-efficacy. Specifically, self-efficacy refers to the person’s belief in his/her ability to succeed at the specified task or change. Self-efficacy is considered a key element in motivation for change and an important predictor of treatment outcome (Miller & Rollnick, 2002). Once a client has identified a need for change to take place, and has tipped the scale of ambivalence, the MI approach points toward supporting the client’s sense of self-efficacy as a way to encourage taking the next step. Numerous methods are used in MI to increase a client’s belief in his/her own ability to change. These include: discussing past successes, identifying personal strengths, and asking evocative questions concerning how the problem can be solved. Throughout this process the therapist continually differentially reinforces self-efficacious statements made by the client in order to increase their frequency. While there are many ways to elicit and increase self-efficacy, no one method works for every client or situation. The overall spirit of increasing self-efficacy is that the
therapist is not forcing or giving it to the client, rather they are pulling it out of the client where it already exists (Miller & Rollnick, 2002).

**Increase in the Amount and Intensity of Change Talk.** There is some evidence that the presence and strength of change talk is indicative of successful and long term change in substance use (Moyers et al., 2007). The therapist behavior of eliciting change talk is something that should be happening throughout the MI session and is considered essential to tipping a client’s ambivalence toward change. Specific types of change talk typically fall into one of four categories: 1) disadvantages of the status quo, 2) advantages of change, 3) expressing optimism about change, and 4) expressing intention to change. All of these types of change talk assist with tipping the balance in favor of change and signal an increase in the client’s motivational level. When change statements by the client are present, it is essential that the therapist differentially reinforce this behavior in order to evoke additional positive statements of change. Moyers et al. (2007) examined session data from Project MATCH (1997b) which suggested a potential causal link between in-session therapist behaviors, client speech (change talk), and subsequent drinking outcomes. The results from this study provide support for the idea that behavior change is directly impacted by the presence and strength of client change talk.

**Group-Based Motivational Interviewing**

The use of group-based motivational interviewing (GMI) has received increasing attention in recent years due to the potential benefits it can serve over individual treatment. Group treatment is typically less expensive, can serve more patients with fewer providers, and it can provide increased opportunities for social support as compared to
individual treatment (Walters, Ogle, & Martin, 2002). While possible benefits of providing GMI are evident, the potential for limited effectiveness of this approach due to the negative impact that group members may have on the non-confrontational style of communication should not be overlooked. Studies to date have assessed the effectiveness of one-, two-, four-, and six-session applications of GMI, group-based motivational enhancement treatment, and cognitive-behavioral MI with varying results. Studies with outpatients provided some evidence for the efficacy of GMI, finding it equally as good as individually delivered care in addition to noticing a decrease in substance use, and increased attendance (Foote et al., 1999; Lincourt, Kuettel, & Bombardier, 2002). Recently, Labrie, Cail, Pederson, and Migliuri (2011) demonstrated the effectiveness of a one-session, 60–75 minute group motivational enhancement intervention for use with college males involved with alcohol-related legal infractions. Labrie and colleagues’ results showed a decrease in drinking and subsequent alcohol related consequences at three months follow-up. A study completed by Nyamathi et al. (2011) also demonstrated the effectiveness of a GMI intervention in drug use among methadone maintained adults. Lastly, a recent study was completed by Sobell, Sobell, and Agrawal (2009) in which they compared a cognitive-behavioral motivational intervention in a group versus an individual format with substance use disorders. Results demonstrated significant reductions in clients’ alcohol and drug use at a 12-month follow-up, with no significant differences between the individual and group therapy conditions. Also of importance in this study, a calculation of the therapist time ratio was completed which indicated that it took 41.4% less therapist time to treat clients using the group versus the individual format.
Given that few studies have been completed assessing the effectiveness of GMI based treatments to date compared to the significant amount of literature that exists offering support for the use of MI based individual treatments, additional research is needed to further clarify the role that GMI can play in the treatment of substance use disorders.
CURRENT STUDY

Motivational interviewing has been demonstrated to be an effective solo and adjunct intervention for increasing motivation to change substance use as well as reducing frequency and intensity of use. It has also more recently gained moderate support for use as an adjunctive treatment in a group format. Given the need to provide treatment services to larger numbers of individuals suffering from substance use disorders, it is important to gain additional support for the effectiveness of a group based motivational enhancement treatment program at increasing motivation for change and reducing overall use.

The current quantitative study used a pre-post within-group design to examine the effectiveness of an 8-session motivational enhancement group treatment program and variables which might predict the effectiveness of the MET group.

Hypotheses

Based on previous research supporting the efficacy of MI and descriptions of the variables targeted by MI interventions in an attempt to promote change, the following hypotheses were generated.

Hypothesis 1. Clients will report a decrease in the frequency of their substance use over the course of treatment as measured by their responses on self-report questionnaires.
Hypothesis 2. Clients will report a decrease in the magnitude of their substance use over the course of treatment as measured by their responses on self-report questionnaires.

Hypothesis 3. Clients will report an increased readiness to change over the course of treatment as measured by three self-report Likert-type questions. Questions include their current opinion about the following statements: 1) It’s a waste of my time thinking about my substance use because I do not have a problem; 2) I enjoy my substance use, but sometimes I use too much; and 3) I am trying to stop using or to use less than I used to.

Hypothesis 4. Clients will demonstrate an increased level of self-efficacy over the course of treatment as measured by two self-report Likert-type questions assessing their beliefs in 1) the importance in changing their level of substance use, and 2) the confidence in their ability to successfully change their amount of substance use if they decided to.

Hypothesis 5. Clients will increase the amount of change-oriented self talk over the course of treatment as measured by three self-report Likert-type questions assessing self statements of 1) I would like to decrease or maintain a decrease in how much I use, 2) I need to decrease or maintain a decrease in how much I use, and 3) I will decrease or maintain a decrease in how much I use.

Method

Participants. Upon approval by the Human Subjects Institutional Review Board (Appendix A), demographic, assessment, and group response data from male and female participants who had completed (successfully or unsuccessfully) the Motivational Enhancement Treatment Group (MET Group) at the University Substance Abuse Clinic at
Western Michigan University were entered into a database. Since the current study was an archival study, only data from individuals who would no longer be receiving treatment in the group were entered for analysis. Additionally, since the current study was archival in nature, no informed consent was collected from group members and no additional information beyond what was already provided to the clinic via intake paperwork and daily progress notes was collected.

Participants were 82 individuals (58 males and 24 females) between the ages of 18 and 58, with a mean age of 31.0 (SD = 10.13). A majority of the participants were Caucasian (n = 61) while African Americans represented the second largest sociocultural group (n = 8). Eighteen identified themselves as practicing some form of Christianity with a large percentage of the group identifying none or other as their religious preference (n = 29 and n = 28, respectively). A majority of the group identified themselves as single, separated or divorced (n = 57) while the remaining individuals reported being married or co-habitating (n = 8 and n = 7, respectively). Since the current study was an archival study, data from all participants who had completed at least two session notes (including baseline and one session or two sessions if no baseline data was collected) were included for possible analysis. The mean number of unique sessions attended was 5.6 (SD = 2.73). See Table 1 for complete demographic characteristics.

**Intervention.** The Motivational Enhancement Group treatment is a manualized treatment taken from the *Motivational Groups for Community Substance Abuse Programs* (Ingersoll, Wagner, & Gharib, 2007). The core motivational group model consists of ten sessions of group treatment. The final four sessions were condensed by USAC staff into two groups, so that the entire treatment length is eight sessions at 90 minutes each. This
Table 1

*Demographic Characteristics*

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>n = 82</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>31.0</td>
<td></td>
</tr>
<tr>
<td>Minimum</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>Maximum</td>
<td>58</td>
<td></td>
</tr>
<tr>
<td>Std Deviation</td>
<td>10.13</td>
<td></td>
</tr>
<tr>
<td><strong>Gender:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>58</td>
<td>70.7</td>
</tr>
<tr>
<td>Female</td>
<td>24</td>
<td>29.3</td>
</tr>
<tr>
<td><strong>Sexual Orientation:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heterosexual</td>
<td>72</td>
<td>87.8</td>
</tr>
<tr>
<td>Homosexual</td>
<td>3</td>
<td>3.6</td>
</tr>
<tr>
<td>Bisexual</td>
<td>5</td>
<td>6.1</td>
</tr>
<tr>
<td>None Listed</td>
<td>2</td>
<td>2.4</td>
</tr>
<tr>
<td><strong>Race:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>61</td>
<td>74.4</td>
</tr>
<tr>
<td>African-American</td>
<td>8</td>
<td>9.8</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>1</td>
<td>1.2</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>1</td>
<td>1.2</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>2.4</td>
</tr>
<tr>
<td>None Listed</td>
<td>9</td>
<td>10.0</td>
</tr>
<tr>
<td><strong>Reason for Referral:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self</td>
<td>8</td>
<td>9.8</td>
</tr>
<tr>
<td>Probation/Parole Officer</td>
<td>32</td>
<td>39.0</td>
</tr>
<tr>
<td>Lawyer</td>
<td>2</td>
<td>2.4</td>
</tr>
<tr>
<td>Judge</td>
<td>19</td>
<td>23.2</td>
</tr>
<tr>
<td>Other</td>
<td>21</td>
<td>25.6</td>
</tr>
<tr>
<td><strong>Current Legal Status:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>15</td>
<td>18.3</td>
</tr>
<tr>
<td>On Probation or Parole</td>
<td>49</td>
<td>59.8</td>
</tr>
<tr>
<td>Awaiting Sentencing</td>
<td>17</td>
<td>20.7</td>
</tr>
<tr>
<td>No Answer</td>
<td>1</td>
<td>1.2</td>
</tr>
</tbody>
</table>
Table 1—continued

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>( n = 82 )</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Relationship Status:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>56</td>
<td>68.3</td>
</tr>
<tr>
<td>Married</td>
<td>8</td>
<td>9.8</td>
</tr>
<tr>
<td>Separated or Divorced</td>
<td>11</td>
<td>13.4</td>
</tr>
<tr>
<td>Cohabitating</td>
<td>7</td>
<td>8.5</td>
</tr>
<tr>
<td><strong>Education:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Completed Grades 7–9</td>
<td>2</td>
<td>2.4</td>
</tr>
<tr>
<td>Completed Grades 10–12</td>
<td>12</td>
<td>14.6</td>
</tr>
<tr>
<td>Graduated High School/GED</td>
<td>38</td>
<td>46.3</td>
</tr>
<tr>
<td>Some College</td>
<td>24</td>
<td>29.3</td>
</tr>
<tr>
<td>Associate’s Degree</td>
<td>3</td>
<td>3.7</td>
</tr>
<tr>
<td>Four-Year Degree or Higher</td>
<td>3</td>
<td>3.7</td>
</tr>
<tr>
<td><strong>Religion:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Christian</td>
<td>18</td>
<td>22.0</td>
</tr>
<tr>
<td>Atheist</td>
<td>2</td>
<td>2.4</td>
</tr>
<tr>
<td>Jewish</td>
<td>1</td>
<td>1.2</td>
</tr>
<tr>
<td>Other</td>
<td>28</td>
<td>34.1</td>
</tr>
<tr>
<td>None</td>
<td>29</td>
<td>37.2</td>
</tr>
<tr>
<td>No Answer</td>
<td>4</td>
<td>4.9</td>
</tr>
<tr>
<td><strong>Employment Status:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployed</td>
<td>53</td>
<td>64.6</td>
</tr>
<tr>
<td>Employed</td>
<td>28</td>
<td>34.1</td>
</tr>
<tr>
<td>No Answer</td>
<td>1</td>
<td>1.2</td>
</tr>
<tr>
<td><strong>SES During Childhood:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poor (Lower Class)</td>
<td>14</td>
<td>17.1</td>
</tr>
<tr>
<td>Okay (Working Class)</td>
<td>33</td>
<td>40.2</td>
</tr>
<tr>
<td>Middle Class</td>
<td>24</td>
<td>29.3</td>
</tr>
<tr>
<td>Well Off/Rich (Upper Class)</td>
<td>3</td>
<td>3.7</td>
</tr>
<tr>
<td>No Answer</td>
<td>8</td>
<td>9.8</td>
</tr>
</tbody>
</table>
was done to fit the needs of the clinic. The manual identified this as appropriate in that agencies may pick and choose sessions from the core motivational group to comprise a planned number of sessions that best fits a particular setting (Ingersoll et al., 2007). The treatment was conducted in an open group format, which allowed for individuals to enter the group at any point in time. Specific topics of each session included: 1) Introduction to Group and Exploration of Lifestyles, 2) the Stages of Change, 3) Awareness: The Good Things and Not-So-Good Things of Substance Use, 4) Looking Forward and Identifying Discrepancy Between Future Hopes and Current Substance Use Choices, 5) Decisional Balance: Pros and Cons of Changing and Staying the Same, 6) Exploring Values in Relation to Their Decisional Balance, 7) Supporting Self-Efficacy: Change Success Stories and Exploring Strengths, 8) Planning for Change and the Role of Importance, Confidence, and Desire for Change. Sessions followed a repeating pattern so that a participant would get all eight sessions no matter when he or she entered the treatment group.

Measures

As part of the client progress note in the MET group, participants were asked to complete a series of open-ended and Likert-type questions at the end of each group treatment session (see Appendix B). Eight of these questions addressed MI-related content (e.g., readiness to change, self-efficacy, presence of change talk, etc.) and were reviewed by the participant’s individual and group therapist to assist him/her with future treatment recommendations and to assess the client’s motivation for change. All of these questions were developed by agency staff after reviewing various MI materials and relevant assessments. The items attempted to tap a shift in resolving ambivalence/increasing readiness to
change (3 items), increases in self-efficacy (2 items), and increases in change-oriented self-talk (3 items) that were expected to be positively impacted by group attendance. Two additional items addressed the participant’s use of substances in the previous week. Information from these ten items constituted the primary data used in the present study to assess whether the MET group impacted the areas it targeted.

As part of an initial assessment with an individual therapist and prior to beginning group treatment, all clients completed a psychosocial questionnaire as well as a variety of other questionnaires as part of clinic policy (Appendix C). Specific information gathered included static and dynamic factors in addition to diagnoses, life history, and substance use history. This information was used to characterize the demographic and clinical characteristics of the sample. Additionally, thorough record keeping procedures in place at the clinic provided data on variables such as group and treatment attendance and duration to complete treatment.

**Primary Dependent Measure.** The primary measure used to determine the effectiveness of the MET Group was the results of individual’s responses to the ten-item questionnaire (Appendix B) they completed at baseline and following each group session. The number of unique sessions attended was also used as a dependent measure to identify the effectiveness of the group.

**Secondary Measures.** Static and dynamic factors in addition to diagnoses, life history, Texas Christian University Drug Screen II (TCU—Knight, Simpson, & Hiller, 2002) score, and substance use history were used as secondary measures to determine what variables might be associated with changes on the questions comprising the primary dependent measure.
Setting

At first contact with the clinic, clients were referred to one of nine licensed clinicians for a full intake assessment to determine eligibility and need for treatment. During the initial assessment session, clients completed all intake paperwork as part of clinic procedures. Following the intake, clients were then referred to treatment as clinically indicated. All MET treatment groups were completed in one of four large (12–18 person) conference rooms containing a large table with chairs surrounding it and a white board for instruction. The clinic is located within a larger set of clinics in an outpatient medical care facility that houses various services including internal medicine, hearing, speech, vision, and psychology.

Clients who were referred to the MET group treatment were told the time and day of the group treatment and were given a sheet of paper with this information on it.

Session Procedures

Clients typically began group treatment within one week of the assessment session. At the beginning of each session, all group members were reminded of group rules including the need for information stated in group to be kept confidential, no violence or threats of violence, the need to not use substances on the premises, to come to group sober, and to have a sense of respect for all group members. Group members were then invited to introduce themselves to the rest of the group. Prior to the start of group content, each member was given a progress note. Group members were instructed to fill out some basic information and to answer several questions (including two specific to substance use in the prior week) before the start of the group. At the conclusion of the group, members
are asked to fill out a series of remaining questions including the eight MI-related items which are located on the back of the progress note (Appendix B).

The content of each group was as follows, with a main objective at the beginning of each group being to explain the purpose of motivational enhancement therapy and set group rules, structure, expectations of clients, and other local site clinical guidelines. All group discussions were consistent with a motivational interviewing approach. A summary of topics discussed was completed at the end of each session with each group member being invited to explore topics that were discussed and how they may affect his or her life. Specific group titles and content included:

1. Introduction to Group and Exploration of Lifestyles
   - Explore lifestyles and daily activities among group members and discuss how substance use fits in with these issues.

2. The Stages of Change
   - Explain the concept of change occurring as a process over time, rather than a single event.
   - Explore and discuss changes that have previously been made, and how they occurred.
   - Introduce the idea that changes can be made using specific strategies that are useful at the different stages.

3. Awareness: The Good Things and Not-So-Good Things
   - Awareness of the good things and not-so-good things about substance use.
   - Explore ambivalence about substance use.

4. Looking Forward
   - Assist members to look forward and think about their possible futures.
   - Develop a sense of hope for the future and develop discrepancy with current choices.

5. Decisional Balance: Pros and Cons of Changing and Staying the Same
   - Increase awareness of ambivalence about substance use.
6. Exploring Values
   - Increase awareness of ambivalence about change.
   - Review decisional balance status.
   - Explore goals and values.
   - Contrast decisional balance status with central values.

7. Supporting Self-Efficacy: Change Success Stories and Exploring Strengths
   - Enhance self-efficacy by reminding clients of past successes.
   - Encourage members to be hopeful about the possibility of change.
   - Build trust among group members.
   - Remind members that there is more to them than their substance use.

8. Planning for Change and the Role of Importance, Confidence, and Desire for Change
   - Review progress through the stages of change during the group experience.
   - Develop a concrete plan to change one thing in the member’s life.
   - To explore feelings about the importance of making changes, their confidence that they can succeed, and their desire for making changes.

Procedures Specific to the Current Study

Collection of all pertinent client information, assessment results, and data from progress notes occurred on-site at the University Substance Abuse Clinic. File information was transcribed into a secure computer at the University Substance Abuse Clinic into an SPSS database. All information recorded to the database was void of any identifying information (social security number, last name, and first name) and identified in the database only via a subject number. The SPSS database was stored on a password protected flash drive which was assigned to the Co-Principal Investigator, Matthew S. Willerick, by the University Substance Abuse Clinic for the storage of protected health information and
approved by the Unified Clinics and the Western Michigan University Office of Information Technology. Data was then transferred to the main computer located within the Behavior Research & Therapy Laboratory (1524 Wood Hall) and will be stored for a minimum of three years.
RESULTS

Descriptive Analyses

Analysis of Current and Past Substance Use. Analysis of current and past substance use and behaviors surrounding substance use indicated that almost 1/3 reported using alcohol or another substance within 48 hours prior to completing the intake paperwork ($n = 25$). Additionally, a majority of the participants currently smoked tobacco ($n = 66$) and slightly less than half reported driving under the influence of alcohol in the past year ($n = 39$). The highest rated drug of choice was marijuana followed by alcohol and opiates ($n = 40, n = 15$, and $n = 8$, respectively). Intravenous drug use was reported by 15.9% of the group members ($n = 13$) and slightly less than half reported a childhood history of family members engaging in heavy alcohol use or illicit substance use ($n = 40$). See Table 2 for additional statistics on participant substance use history.

Hypothesis 1

It was hypothesized that clients would report a decrease in the frequency of their substance use over the course of treatment as measured by their responses on the self-report questionnaire. A paired samples $t$-test was completed comparing changes in means from the first to the last session. While there was a decrease in the average number of days used over the course of treatment ($M = .35, SD = 1.90$), the mean decrease was not significant from Time 1 ($M = 1.14, SD = 2.19$) to Time 2 ($M = .79, SD = 1.70$), $t (77) = 1.61, p < .11$ (two-tailed). As such, while the two-tailed $t$-test results were approaching a
Table 2

Substance Use Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>n = 82</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>DUI - Alcohol in the past 12 months:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>39</td>
<td>47.6</td>
</tr>
<tr>
<td>Seldom</td>
<td>19</td>
<td>23.2</td>
</tr>
<tr>
<td>Sometimes</td>
<td>7</td>
<td>8.5</td>
</tr>
<tr>
<td>Often</td>
<td>8</td>
<td>9.8</td>
</tr>
<tr>
<td>Frequently</td>
<td>5</td>
<td>6.1</td>
</tr>
<tr>
<td>No Answer</td>
<td>4</td>
<td>4.9</td>
</tr>
<tr>
<td>Arrest History:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean Number of Convictions</td>
<td>M = 2.74</td>
<td></td>
</tr>
<tr>
<td>Mean Number of DUI Arrests</td>
<td>M = .68</td>
<td></td>
</tr>
<tr>
<td>Current Tobacco Use:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>66</td>
<td>80.5</td>
</tr>
<tr>
<td>No</td>
<td>11</td>
<td>13.4</td>
</tr>
<tr>
<td>No Answer</td>
<td>5</td>
<td>6.1</td>
</tr>
<tr>
<td>Drug of First Choice:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alcohol</td>
<td>15</td>
<td>18.3</td>
</tr>
<tr>
<td>Cocaine</td>
<td>1</td>
<td>1.2</td>
</tr>
<tr>
<td>Crack Cocaine</td>
<td>5</td>
<td>6.1</td>
</tr>
<tr>
<td>Marijuana</td>
<td>40</td>
<td>48.4</td>
</tr>
<tr>
<td>Opiates</td>
<td>8</td>
<td>9.8</td>
</tr>
<tr>
<td>Amphetamines</td>
<td>7</td>
<td>8.5</td>
</tr>
<tr>
<td>Tobacco</td>
<td>3</td>
<td>3.7</td>
</tr>
<tr>
<td>No Answer</td>
<td>3</td>
<td>3.7</td>
</tr>
<tr>
<td>Drug of Second Choice:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alcohol</td>
<td>21</td>
<td>25.6</td>
</tr>
<tr>
<td>Marijuana</td>
<td>1</td>
<td>1.2</td>
</tr>
<tr>
<td>Crack Cocaine</td>
<td>14</td>
<td>17.1</td>
</tr>
<tr>
<td>Amphetamines</td>
<td>2</td>
<td>2.4</td>
</tr>
<tr>
<td>Club Drugs</td>
<td>5</td>
<td>6.1</td>
</tr>
<tr>
<td>Prescription Drugs</td>
<td>1</td>
<td>1.2</td>
</tr>
<tr>
<td>Methadone</td>
<td>1</td>
<td>1.2</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>1.2</td>
</tr>
<tr>
<td>No Answer</td>
<td>36</td>
<td>43.9</td>
</tr>
</tbody>
</table>
Table 2—continued

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>$n = 82$</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substance Use in the Last 48 Hours:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>25</td>
<td>30.5</td>
</tr>
<tr>
<td>No</td>
<td>51</td>
<td>62.2</td>
</tr>
<tr>
<td>No Answer</td>
<td>6</td>
<td>7.3</td>
</tr>
<tr>
<td>History of IV Drug Use:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>13</td>
<td>15.9</td>
</tr>
<tr>
<td>No</td>
<td>58</td>
<td>70.7</td>
</tr>
<tr>
<td>No Answer</td>
<td>11</td>
<td>13.4</td>
</tr>
<tr>
<td>Family History of Substance Abuse:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>40</td>
<td>48.8</td>
</tr>
<tr>
<td>No</td>
<td>42</td>
<td>51.2</td>
</tr>
<tr>
<td>TCU Drug Screen II Score:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>3.33</td>
<td></td>
</tr>
<tr>
<td>Std Deviation</td>
<td>3.21</td>
<td></td>
</tr>
<tr>
<td>GAF Score:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>62.39</td>
<td></td>
</tr>
<tr>
<td>Std Deviation</td>
<td>7.82</td>
<td></td>
</tr>
<tr>
<td>Experienced Abuse Growing Up:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>34</td>
<td>41.5</td>
</tr>
<tr>
<td>No</td>
<td>45</td>
<td>54.9</td>
</tr>
<tr>
<td>No Answer</td>
<td>3</td>
<td>3.7</td>
</tr>
</tbody>
</table>

trend, a statistically significant reduction in self-reported frequency of use over the course of treatment was not observed.

Hypothesis 1 was further explored due to a possible floor effect created by a majority of participants denying any substance use at the outset of treatment. Pre-treatment to post-treatment change scores were calculated and an independent-samples $t$-test was completed comparing the change in frequency of use between individuals who had reported no use at baseline on question 1 ($n = 58$) and individuals who had reported any
The results of this analysis indicated there was a significant difference in change scores for individuals who had reported any use the week prior to treatment ($M = 1.95, SD = 2.50$) and individuals who reported no use the week prior to treatment, $M = -.29, SD = 1.11$, $t(76) = -5.51, p = .000$ (two-tailed). The magnitude of the difference in the means (mean difference = -2.25, 95% CI: -3.05 to -1.43) was very large (eta squared = .29).

**Hypothesis 2**

It was hypothesized that clients would report a decrease in the magnitude of their substance use over the course of treatment as measured by their responses on self-report questionnaires. A paired samples $t$-test was completed comparing changes in means from the first to the last session. Magnitude was measured by a 1–10 item Likert scale in which the participant reported the percentage of the day he/she was using substances in the previous week if using. While there was a decrease in the average magnitude of use over the course of treatment ($M = .55, SD = 3.11$), the mean decrease was not significant from Time 1 ($M = 2.10, SD = 3.24$) to Time 2 ($M = 1.55, SD = 2.71$), $t(77) = 1.57, p < .12$ (two-tailed). Again, while the two-tailed $t$-test approached a trend, a statistically significant reduction in self-reported magnitude of use over the course of treatment was not found.

As with Hypothesis 1, Hypothesis 2 was also further explored due to a possible floor effect created by a majority of participants denying any substance use at the outset of treatment. Pre to post change scores were calculated and an independent-samples $t$-test was completed comparing the change in magnitude of use between individuals who had reported no use at baseline on question 1 and individuals who had reported any use on
question 1. There was a significant difference in magnitude of change scores for individuals who had reported any use the week prior to treatment ($M = 1.90, SD = 3.40$) and individuals who reported no use the week prior to treatment, $M = -.13, SD = 2.56, t (75) = -2.82, p = .006$ (two-tailed). The magnitude of the difference in the means (mean difference $= -2.03$, 95% CI: -3.46 to -0.60) was moderate (eta squared $= .096$).

**Hypothesis 3**

It was hypothesized that clients would report increased readiness to change over the course of treatment as measured by three self-report Likert-type questions. Responses to the following statements were analyzed: 1) It’s a waste of my time thinking about my substance use because I do not have a problem; 2) I enjoy my substance use, but sometimes I use too much; 3) I am trying to stop using or to use less than I used to. All three readiness to change questions were analyzed together. Collectively, the mean increase in scores ($M = .16, SD = 6.63$) was not significant from Time 1 ($M = 17.28, SD = 6.85$) to Time 2 ($M = 17.44, SD = 7.31$), $t (79) = .220, p < .830$ (two-tailed).

In order to further explore Hypothesis 3, questions were individually analyzed to assess for varying changes in readiness to change that one question may capture over another. The statement, “It’s a waste of my time thinking about my substance use because I do not have a problem” was analyzed using a paired samples $t$-test which resulted in no significant change from Time 1 ($M = 4.22, SD = 3.76$) to Time 2 ($M = 4.12, SD = 3.91$), $t (81) = .230, p < .82$ (two-tailed). The statement, “I enjoy my substance use, but sometimes I use too much” was analyzed using a paired samples $t$-test which resulted in no significant change from Time 1 ($M = 3.53, SD = 3.52$) to Time 2 ($M = 3.80, SD = 3.52$), $t$
The question, “I am trying to stop using or to use less than I used to” was analyzed using a paired samples t-test which also resulted in no significant change from Time 1 ($M = 7.80$, $SD = 3.31$) to Time 2 ($M = 7.59$, $SD = 3.243$), $t (80) = .52$, $p < .60$ (two-tailed).

**Hypothesis 4**

It was hypothesized that clients would demonstrate an increased level of self-efficacy over the course of treatment as measured by two self-report Likert-type questions assessing their beliefs in 1) the importance in changing their level of substance use, and 2) their confidence in their ability to successfully change their amount of substance use if they decided to. Both questions were analyzed together initially. Collectively, the mean increase in scores ($M = .10$, $SD = 4.40$) was not significant from Time 1 ($M = 16.71$, $SD = 3.70$) to Time 2 ($M = 16.61$, $SD = 4.50$), $t (81) = .20$, $p < .84$ (two-tailed).

In order to further explore possible changes in confidence in one’s ability to change and the level of importance that change plays, questions were individually analyzed. The question assessing the relative importance the individual accorded changing or maintaining a change in substance use was analyzed using a paired samples t-test which resulted in no significant change from Time 1 ($M = 8.24$, $SD = 2.86$) to Time 2 ($M = 8.17$, $SD = 2.99$), $t (81) = .23$, $p < .82$ (two-tailed). The question assessing the confidence the individual has in his or her ability to successfully change or maintain a change in their amount of substance use was also analyzed using a paired samples t-test which resulted in no significant change from Time 1 ($M = 8.46$, $SD = 2.29$) to Time 2 ($M = 8.44$, $SD = 2.30$), $t (80) = .09$, $p < .93$ (two-tailed).
Hypothesis 4 was further explored due to a possible floor effect that was created by a majority of participants denying any substance use at the outset of treatment. An independent-samples t-test was completed comparing pretreatment to post-treatment change scores on the confidence item between individuals who had reported no use at baseline on question 1 and individuals who had reported any use on question 1. There was a significant difference in change scores for individuals who had reported any substance use the week prior to treatment ($M = 1.05, SD = 2.94$) and individuals who reported no use the week prior to treatment ($M = -.36, SD = 2.25$), $t(78) = -2.29, p = .025$ (two-tailed). The magnitude of the difference in the means (mean difference $= -1.40$, 95% CI: -2.63 to -1.18) was moderate (eta squared $= .063$). An independent-samples t-test was also completed comparing pretreatment to post-treatment change scores on the importance item between individuals who had reported no use at baseline on question 1 and individuals who had reported use on question 1. There was, however, no significant difference in change scores relating to importance for change in either group of individuals.

**Hypothesis 5**

It was hypothesized that clients would increase the amount of change oriented self talk over the course of treatment as measured by three self-report Likert-type questions: 1) I would like to decrease or maintain a decrease in how much I use, 2) I need to decrease or maintain a decrease in how much I use, and 3) I will decrease or maintain a decrease in how much I use. All three questions assessing the presence of change talk were analyzed together initially to identify overall increase in change oriented self-talk. Collectively, the mean increase in self-reported frequency of change talk ($M = 2.63, SD = 9.91$) demon-
strated a statistically significant increase from Time 1 ($M = 16.33$, $SD = 11.16$) to Time 2 ($M = 18.96$, $SD = 10.63$), $t (78) = 2.36$, $p < .021$ (two-tailed). The mean increase in self-reported change oriented self-talk was 2.633 with a 95% confidence interval ranging from 4.853 to .413. The eta squared statistic (.06) indicated a moderate effect size.

In order to further explore the changes seen in the self-reported frequency of change talk during treatment, questions were individually analyzed to assess for varying changes in different types of change talk. The question assessing the presence of change talk oriented toward wanting to decrease or to maintain a decrease in use was analyzed using a paired samples $t$-test which resulted in a statistically significant increase in self-reported change talk centering around a desire to change from Time 1 ($M = 5.48$, $SD = 3.95$) to Time 2 ($M = 6.47$, $SD = 3.74$), $t (80) = 2.35$, $p < .021$ (two-tailed). The mean increase in desire oriented change talk was .99 with a 95% confidence interval ranging from 1.83 to .15. The eta squared statistic (.06) indicated a moderate effect size. The question assessing the presence of change-talk oriented toward a need to decrease or maintain a decrease in use was analyzed using a paired samples $t$-test but did not result in a statistically significant change from Time 1 ($M = 5.29$, $SD = 4.06$) to Time 2 ($M = 5.90$, $SD = 3.91$), $t (79) = 1.33$, $p < .19$ (two-tailed). Lastly, the question assessing the presence of change talk oriented toward having a plan or statements such as “I will decrease or maintain a decrease in how much I use” was analyzed using a paired samples $t$-test which resulted in a statistically significant increase in the presence of plan oriented change talk from Time 1 ($M = 5.56$, $SD = 4.02$) to Time 2 ($M = 6.67$ $SD = 3.72$), $t (78) = 2.68$, $p < .009$ (two-tailed). The mean increase in plan oriented change talk was 1.11 with a 95%
confidence interval ranging from 1.92 to .29. The eta squared statistic (.08) indicated a moderate effect size.

**Predictor Variables**

Previous research has identified several predictor variables which have been shown to correlate with the success of substance abuse treatment (Adamson, Sellman, & Frampton, 2008; Ahmadi et al., 2009; Soyka & Schmidt, 2009). Specifically, variables such as baseline alcohol consumption, employment, gender, treatment history, socioeconomic status, religion, history of suicidal behavior, current psychological distress, and frequency of use in past 30 days have been found to predict treatment outcome in previous studies. As such, the present study examined which pretreatment variables were correlated with the change scores on the self-report measure used in the present study. This resulted in a large number of post hoc analyses being conducted. As such, the results of these analyses should be viewed as exploratory and as a guide for future researchers to consider when making apriori predictions. Preliminary analyses were performed to ensure no violations of the assumptions of normality, linearity, and homoscedasticity.

The relationship between the number of group sessions attended and change in the amount of change talk was investigated using Pearson product-moment correlation coefficients. There was a significant, positive correlation between changes in self-reported change talk focused on desire, need, and plan to reduce substance use and the number of unique treatment sessions attended ($r = .30$, $n = 81$, $p < .01$ and $r = .26$, $n = 80$, $p < .05$, $r = .30$, $n = 79$, $p < .01$, respectively).
Significant relationships between the number of criminal convictions and change in magnitude of use \( (r = .260, n = 77, p < .05) \) and increased confidence in the ability to change \( (r = .24, n = 81, p < .05) \) were found. On the contrary, the number of previous arrests for driving under the influence of alcohol was significantly negatively correlated with a positive change in both self-talk focused on a desire for change \( (r = -.31, n = 72, p < .01) \) and a need for change \( (r = -.32, n = 72, p < .01) \).

The relationship between scores on the TCU Drug Screen II and readiness to stop using was investigated using Pearson product-moment correlation coefficients. There was a significant, positive correlation between the initial scores on the TCU and an overall increase in intent to change ("I am trying to stop using or to use less than I used to"), \( r = .29, n = 57, p < .05 \). Lastly, there was a significant positive correlation between initial GAF scores and positive change in self-talk focused on an increased need to change substance use, \( r = .28, n = 75, p < .05 \). An independent-samples \( t \)-test was also conducted to compare the change in self-talk focused on an increase in the need to change substance use for males and females. There was a significant difference between scores for males (\( M = 1.25, SD = 4.10 \)) and females (\( M = -.96, SD = 3.84 \)); \( t (78) = 2.21, p = .03 \) (two-tailed). The magnitude of the difference in the means (mean difference = 2.20, 95% CI: .22 to 4.18) was moderately small (eta squared = .06).

An independent-samples \( t \)-test was conducted to compare the change in self-talk focused on an increase in desire to change substance use with prior mental health treatment participation. There was a significant difference in scores between those who had participated in prior treatment (\( M = -.46, SD = 4.09 \)) and those who had not participated in treatment (\( M = 1.71, SD = 3.53 \)); \( t (76) = 2.33, p = .022 \) (two-tailed), with the latter
showing greater change. The magnitude of the difference in the means (mean difference = 2.17, 95% CI: .32 to 4.02) was moderate (eta squared = .07).

An independent-samples *t*-test was conducted to compare the change in self-talk focused on an increase in desire to change substance use with individuals who have and have not experienced abuse in their lifetime. There was a significant difference in scores for individuals who had experienced abuse ($M = .000$, $SD = 3.52$) and individuals who had not experienced abuse ($M = 1.78$, $SD = 3.95$); $t (76) = 2.05$, $p = .04$ (two-tailed) Results indicate that individuals with a history of experiencing abuse reported an increased presence of self-talk focused on desire for change as compared to individuals with no history of abuse. The magnitude of the difference in the means (mean difference = 1.78, 95% CI: .05 to 3.50) was small (eta squared = .05).

An independent-samples *t*-test was also conducted to compare changes in readiness to change (trying to change) for those who had a history of substance abuse in their family. There was a significant difference in scores for individuals who had a family history of substance abuse ($M = .90$, $SD = 2.60$) and those who did not have a family history of substance abuse ($M = -1.35$, $SD = 3.35$); $t (79) = -2.92$, $p = .005$ (two-tailed) with the former showing greater change. The magnitude of the difference in the means (mean difference = -2.25, 95% CI: -3.79 to -.72) was moderate (eta squared = .095).

Lastly, a one-way between-groups analysis of variance was conducted to explore the impact of religion on self-talk. Participants were divided into five groups according to their religious preference. There was a statistically significant difference in change in amount of change-oriented self-talk across groups: $F (4, 76) = 4.12$, $p = .005$. The effect size was large (eta squared = .19). Post-hoc comparisons using the Tukey HSD test
indicated that the mean group score for individuals self-identifying as Christians ($M = -1.54$, $SD = 4.18$) was significantly different from those identifying themselves as “other” ($M = 2.21$, $SD = 3.53$) with less significant change occurring in those individuals self-identifying as Christians.
DISCUSSION

Changes in the frequency and magnitude of substance use over the course of treatment as measured in Hypotheses 1 and 2 did not reach statistical significance. However, the reported decrease in both frequency and magnitude approached a trend level. Further analysis of the data revealed possible explanations for the lack of statistically significant change in use over the course of treatment. Overall participants reported a mean number of previous days used at 1.14 ($SD = 2.19$) in the past week at baseline assessment with 70.7% of participants reporting no use. A large percentage of the participants were currently on probation, parole, or were awaiting sentencing (80.5% of the participants collectively) which often carries with it the requirement to provide regular drug screenings. The result may have been a floor effect. That is, due to the low initial use there was less room for improvement across the entire sample when means were computed (and no room for positive movement among these individuals) making it harder to achieve statistical significance. Additionally, unlike the remaining questions on the self-report questionnaires, participants may have approached the two questions concerning recent substance use in a more guarded fashion. That is, participants may be less willing to report recent substance use out of fear of legal sanctions for doing so. More valid information assessing substance use may be better gathered through the additional use of other measurement collection strategies such as anonymous data gathering methods or objective urinalysis as opposed to participants reporting the information on a document they sign that eventually ends up in their medical chart.
Consistent with the floor effect discussed above, when individuals who had reported any use at all in the week prior to treatment and those who had denied all use were compared a significant difference was found. That is, those who had reported using at the start of the treatment decreased their use over the treatment period compared to those indicating no initial use. A comparison of those initially reporting no use revealed a significant difference in self-reported confidence in ability to change at post-treatment, with individuals who had reported use prior to the onset of treatment showing the most change. If this was in fact a group of individuals who were ambivalent about making a change in their substance use prior to treatment, possibly due to a lack of confidence in their ability to succeed, these results are encouraging and consistent with MI theorizing (Miller & Rollnick, 2002).

Participants did not report significant movement in their readiness to change over the course of treatment. When considering the results for Hypothesis 3 (readiness to change), the lack of change in questions may be the product of several factors. In the clinical judgment of the agency evaluator, the initial assessment prior to treatment suggested the need for increased motivation for change in participants, leading to their referral to the MET group. This, however, does not automatically mean that individuals failed to agree that they have a substance abuse problem. Due to the type of population served, a large percentage of the group members have multiple legal convictions ($M = 2.74, SD = 1.82$), with many involving illicit substances. Participants may be experiencing current ambivalence concerning a reduction in their future substance use while agreeing that they do have a substance use problem which may account for the lack of change in the question concerning it being a “waste of time thinking about my substance use...”
The second question included in Hypothesis 3 was initially thought to assess a shift in self-reported enjoyment of current use. Further examination of the structure of the question may, however, account for the lack of change seen. The structure of the question may lead to confusion due to it containing two clauses that, at times, may warrant different answers. Specifically, the statement “I enjoy my substance use, but sometimes I use too much” may in fact change over time as ambivalence decreases and motivation to change increases. It may, however, lead the participant to answer at the extreme low end as they attempt to answer the question “I enjoy my substance use.” Additionally, if the individual has already stopped using their substance of choice due to legal restrictions and not due to intrinsic motivation, this question may undoubtedly pose a problem to answer. This was, in fact, experienced on multiple occasions throughout the treatment process and participants were encouraged to answer the question “as honestly as they can.” The nature of the third question relevant to Hypothesis 3, assessing current action surrounding a change in use, may also contribute to the lack of change seen in this question over the treatment sessions. Answers to the question, “I am trying to stop using or to use less than I used to” may be influenced by the fact that many of the participants have already stopped using their substance of choice under legal mandate. Reportedly, the lack of change found may also reflect the participant’s current level of motivation. Specifically, the mean at time one for this question \((M = 7.8, SD = 3.31)\) suggested an already high level of self-reported attempts to stop using, leaving little room for change throughout treatment leading to a possible ceiling effect with the data. Thus, considerations based on the sample studied and question-specific issues may have negatively impacted the ability to document the movement on readiness to change. However, it is also possible
that the treatment was simply ineffective in altering the participants’ readiness to change their substance use.

With respect to Hypothesis 4, no changes were seen across the full sample when assessing importance and confidence regarding the ability to change substance use. Again, examination of baseline responses is revealing. Mean responses were 8.24 and 8.46 (on a 1–10 point scale) for the importance and confidence questions respectively. Similar to the issues addressed in Hypothesis 3, these high baseline scores may have left little to no room for a statistically significant increase in either item. Also, given that a majority of the participants were involved with the legal system, importance in obtaining or maintaining abstinence is likely to seem important due to possible external motivators (jail, fines, etc.). Similarly, the question assessing a participant’s confidence in his/her ability to change or maintain a change in his/her substance use may have been answered artificially high due to the final part of the question, “if you decided to.” Anecdotal feedback from several participants suggested that while they were not currently confident in their ability to successfully change, they had answered the question in response to how confident they would be if and when they eventually decided to make a change.

A subset of participants did demonstrate a significant increase in confidence over the course of treatment—those who initially reported some substance use. There is logic to this finding. If those who reported no using were indeed not using then there would not be much expected change in confidence to do something they had already done. Indeed a post hoc examination of confidence scores indicated significantly greater baseline confidence scores among those reporting no use at baseline \((M = 8.97, SD = 1.71)\) compared to those reporting substance use \((M = 7.00, SD = 3.02)\), \(t = 2.88, p = .01\). However, among
those who were actually reporting use, an improvement in confidence and decrease in use would be a clear target of MI (Miller & Rollnick, 2002), and it was that subset that showed improvement. Moreover, there was a significant relationship in the full sample between change in frequency of substance use and change in confidence ($r = .24, p = .03$), a relationship that was stronger among the subset ($n = 22$) who reported use at pretreatment ($r = .36, p = .10$). This pattern of results is consistent with predictions from MI (Amrhein, Miller, Yahne, Palmer, & Fulcher, 2003) but the direction of the relationship or whether it was due to a third variable could not be determined in the current analyses.

Hypothesis 5, which suggested that endorsement of self-motivational statements (i.e., change talk) would increase over the treatment interval, was the most strongly supported hypothesis in the current study. Recently there has been increased attention in the MI literature to change talk as a potential critical precursor to (and potential mediator) of actual change (Amrhein et al., 2003). The current results are consistent with this possibility and that group MI interventions might produce increased talk directed toward changing substance use. However, given the current design, the changes observed cannot be attributed to the treatment. It may be that these changes occurred simply as a result of the passage of time or simply by being in a treatment (regardless of type) focused on substance use. The presence of concurrent comparison conditions (waitlist control group and comparison treatment control group) would be needed to more conclusively attribute the increase in self-motivational statements to the MI group.

Analysis of variables that may predict an increased likelihood of change across the outcome measures resulted in a group of variables that has been supported in previous literature to predict treatment success—specifically, the presence of past mental health
treatment, experiencing abuse or substance abuse in your family growing up, gender, religious involvement, length of treatment, legal involvement (# of convictions), TCU Drug Screen II scores (severity of substance use), and GAF scores (level of current functioning). The current research suggested that these variables may predict change in substance use or change in MI-relevant variables related to ambivalence, readiness to change, self-efficacy, and change talk. Similarly, results found by Ahmadi et al. (2009) also suggested that recent substance use had a significant impact on treatment outcome with cocaine-dependent patients with comorbid alcoholism. Adamson et al.’s 2008 systematic review of patient predictors in alcohol treatment outcome studies identified baseline alcohol use, employment, gender, dependency severity, psychopathology rating, treatment history, self-efficacy, religion, and level of motivational as the most consistent univariate predictors for substantial reductions in use. Results of the current study demonstrated similar results.

The current research represents an effectiveness study—an examination of an MET group as offered in a community substance use treatment agency. Overall, the results suggest that during the time in which they were receiving a group based motivational enhancement treatment participants reported an increase in self-reported change-oriented talk, indicating a desire and intention to decrease substance use. Even with the lack of control inherent to an effectiveness study, including the lack of exclusionary criteria, lack of control over the type of data gathered, and the type of questions asked of participants, the current study was able to suggest changes on several variables that according to previous literature are key indicators of a shift in ambivalence toward change and of successful and long-term success (Moyers et al., 2007). While a large majority of
past research on group based motivational interviewing assessed the use of such treatments as a precursor to other treatments and not as a standalone intervention, the current study demonstrated the effectiveness of a GMI being used in the absence of subsequent treatment.

Due to the lack of control in the current archival study over inclusionary and exclusionary criteria, measures used, and information gathered, it would be beneficial to complete a well controlled study to address not only these issues but to also assess therapist adherence to the protocol as well as to MI principles. A significant limitation of the current study is the lack of experimental control researchers had over the treatment presentation, independent, and dependent variables. This also led researchers to run a significant number of analyses without completing a Bonferroni correction, which is often used to address problems of multiple comparisons, due to not wanting to run the risk of committing a type II error. We believe, however, that the potential benefits of gaining valuable initial information concerning this group based motivational enhancement treatment, outweigh the potential type I errors. Due to the potential benefits of an effective MI based group treatment in regards to cost effectiveness and the ability to serve more clients with fewer providers, gaining additional information on the possible effectiveness of interventions such as this eight-session MET protocol is extremely beneficial.

In future research, it would be beneficial to identify the effectiveness of briefer treatment protocols as compared to the eight-session, 90-minute approach assessed in the current study. A well-controlled study assessing change between session topics may provide valuable information concerning the type of topics that would be most useful to discuss. Additionally, while the current study was able to detect statistically significant
changes while individuals were enrolled in treatment, it would be beneficial to gather longer-term follow-up data. In addition, a larger well-controlled study would allow for greater ability to assess for variables that would predict treatment success. While a number of statistically significant changes occurred during the course of treatment and these changes may in fact be a result of group effects, due to the lack of experimental control, we cannot conclusively say that changes are due to treatment. Lastly, due to the availability of clinic data, no follow-up information was available to assess for the short- and long-term effectiveness of the intervention. Future well-controlled studies would benefit from ensuring the collection of long-term follow-up data. Overall, a significant number of individuals who reported using substances at the outset of treatment did report a significant decrease in both frequency and magnitude of use while also reporting a significant increase in their confidence in their ability to enact change in their future use of substances.

With the fact that over 23.5 million adults were in need of substance abuse treatment in 2009 (SAMHSA, 2010), effective treatments aimed at increasing motivation for change are of the upmost importance. Whether being used as standalone treatments or in conjunction with other evidence based treatments, group based motivational interviewing appears to be gaining additional support for possible applications in various settings.
REFERENCES


Appendix A

Human Subjects Institutional Review Board Approval Letter
Date: November 13, 2009

To: Scott Gaynor, Principal Investigator
    Matthew Willerick, Student Investigator for dissertation

From: Christopher Cheatham, Ph.D., Vice Chair

Re: HSIRB Project Number: 09-11-10

This letter will serve as confirmation that your research project entitled "Evaluating a Community Treatment Program for Substance Use" has been approved under the expedited category of review by the Human Subjects Institutional Review Board. The conditions and duration of this approval are specified in the Policies of Western Michigan University. You may now begin to implement the research as described in the application.

Please note that you may only conduct this research exactly in the form it was approved. You must seek specific board approval for any changes in this project. You must also seek reapproval if the project extends beyond the termination date noted below. In addition if there are any unanticipated adverse reactions or unanticipated events associated with the conduct of this research, you should immediately suspend the project and contact the Chair of the HSIRB for consultation.

The Board wishes you success in the pursuit of your research goals.

Approval Termination: November 13, 2010
Appendix B

Ten-Item Questionnaire
This questionnaire is to help us improve services. There are no right or wrong answers. It is not a test. Please answer honestly. When questions refer to substance use, please respond based on the substance or substances that led to your referral here.

1. Please circle the number of days that you have used the substance(s) in the past week.

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7

2. In the past week, on a typical day when you used the substance(s), what percentage of the day were you under the influence of the substance?

- 10%
- 20%
- 30%
- 40%
- 50%
- 60%
- 70%
- 80%
- 90%
- 100%

- A hour or so
- Half the day
- All day

3. Please circle the number that best indicates how you feel about the following statement: “It’s a waste of time thinking about my substance use because I do not have a problem.”

- Strongly disagree
- Unsure
- Strongly agree

4. Please circle the number that best indicates how you feel about the following statement: “I enjoy my substance use, but sometimes I just use too much.”

- Strongly disagree
- Unsure
- Strongly agree

5. Please circle the number that best indicates how you feel about the following statement: “I am trying to stop using or to use less than I used to.”

- Strongly disagree
- Unsure
- Strongly agree

6. Please circle the number that best reflects how important it is to you to change (or maintain a change in) your amount of substance use.

- Not at all
- Somewhat
- Extremely

7. Please circle the number that best reflects how confident you are that you could successfully change (or maintain a change in) your amount of substance use if you decided to.

- Not at all
- Somewhat
- Extremely

8. Please circle the number that best indicates how often in the past week have you thought or said to yourself something like “I would like to decrease (or maintain a decrease in) how much I use.”

- Never
- Rarely
- Sometimes
- Often
- Very often

9. How often in the past week have you thought or said to yourself something like “I need to decrease (or maintain a decrease in) how much I use.”

- Never
- Rarely
- Sometimes
- Often
- Very often

10. How often in the past week have you thought or said to yourself something like “I will decrease (or maintain a decrease in) how much I use.”

- Never
- Rarely
- Sometimes
- Often
- Very often
Appendix C

USAC Client History/Accessment Instrument
WESTERN MICHIGAN UNIVERSITY
UNIVERSITY SUBSTANCE ABUSE CLINIC
CLIENT HISTORY/ASSESSMENT

In order that we may begin to become acquainted with you we need you to answer the following questions as accurately and completely as you can. It is only through your providing us with as much information as possible that we can best meet your needs. Please use a pen to answer the questions (please do not write in the area reserved for "clinician's notes") Thank You.

1. **IDENTIFYING INFORMATION**
   
   **CLIENT ID#** __________________________
   
   **Name** ________________________________  **Birth Date** __________  **Age** _________
   
   **Address** ____________________________________________________________
   
   (Street) (City) (State) (Zip)
   
   **County** _______________  **Phone for Messages** Phone __________________________
   
   **Gender** _______________  **Race (optional)** __________________________
   
   **Emergency Contact/Next of Kin:** __________________________________________
   
   **Relationship to you:** __________________________________________  **(Phone #)** __________
   
   **Address:** ____________________________________________________________
   
   (Street) (City) (State) (Zip)

2. **REASONS FOR TREATMENT/GOAL**
   
   Why are you seeking treatment at this time?
   
   ____________________________________________________________
   
   What goals do you want to accomplish through treatment?
   
   ____________________________________________________________
   

3. **STRENGTHS/ABILITIES/SKILLS/INTERESTS/NEEDS**
   
   Please describe your personal strengths.
   
   ____________________________________________________________
   
   What are your abilities that may help solve problems you may face, i.e.,
   
   clear thinking, able to take action, employment skills, open to help, open
to suggestions, good listener, self confident, can communicate needs.
   
   ____________________________________________________________

   **Clinician's Notes**

10/08 (13) 1
What are your current needs for making changes in your life?

What type of treatment and assistance do you prefer?

Is there any other information we should know so we can better support you in making changes?

4. **MEDICAL/HEALTH HISTORY**
   Please describe any current health problems.

   Are you under a doctor's care? (please circle) Yes  No
   Please describe any past health problems:

   When was your last physical examination? _______________________

   Who is your physician(s)? _______________________
   Phone: _______________________
   Location of office: _______________________
   Hospital preference: _______________________
   Do you consider yourself to possess any disability, physical or mental health problems?
   (please circle) Yes  No  If yes, please explain: _______________________

   Describe what adjustments you have made in your life because of these disabilities or problems:

   _______________________
   _______________________

10/08 (13)
Please list any medications you are using at this time:

<table>
<thead>
<tr>
<th>Medication</th>
<th>Dosage</th>
<th>Frequency</th>
<th>Purpose</th>
<th>Is It Helping?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Do you have any allergies to medications or have you ever experienced adverse reactions to medications?

If yes, what: _________________________________

5. **EDUCATIONAL HISTORY**

What was the level of education you completed? (please circle)
grades 1-6  grades 7-9  grades 10-12
High school graduate or G.E.D. (please circle) Yes  No
Year graduated: ______________
Some college (no degree)  College degree (type and level)________________________

Are you interested in gaining more education, vocational training? (please circle) Yes  No.
If yes, please describe your goals: ____________________________________________________________________

Have you had any vocational job training? (please circle) Yes  No.
If yes, please describe special job skills: ____________________________________________________________________

Describe what school was like for you: ____________________________________________________________________

Were you involved in special education services? (please circle) Yes  No. If yes, please explain: ________________________

10/08 (13)
6. **EMPLOYMENT HISTORY**

Circle status: Employed  Unemployed  Laid-off  Retired  Disabled

What is your current occupation?

__________________________________________________________

What is your current work schedule? Number of hours per week:

__________________________________________ Shift ______

Current Employer: ___________________________________________

Address: _____________________________________________

(Street) (City) (State) (Zip)

If not working, when do you expect to return to work?

__________________________________________________________

Source of income in the past 30 days?

__________________________________________________________

What type of jobs have you held in the past?

__________________________________________________________

What is your work record like? Describe job problems in the past and reasons for leaving past jobs.

__________________________________________________________

What are your future employment goals?

__________________________________________________________

7. **DEVELOPMENTAL HISTORY**

Mother Living? (please circle) Yes  No

If No: Cause of death and when: ________________________________________________

Father Living? (please circle) Yes  No

If No: Cause of death and when: ________________________________________________

Who were you raised by? _______________________________________________________

Were your parents ever married? (please circle) Yes  No

Are your parents divorced or separated? (please circle) Yes  No

If yes, at what age were you when they divorced or separated? ______

How many brothers ______ sisters ______ did you grow up with?

Where were you in the birth order (youngest, oldest, etc.)? __________

How were you treated by your family? ____________________________________________

10/08 (13)
Did anyone in your household have problems with alcohol or other drugs?
(please circle) Yes  No
If Yes: Who? ____________________________
Please describe how this effected you:
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

Has any of your family had counseling or treatment?
(please circle) Yes  No  If Yes, please describe:
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

Please describe your family's financial situation as you were growing up:
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

Have you ever been abused physically, emotionally, and/or sexually?
(please circle) Yes  No  If Yes, please explain:
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

Have you ever witnessed physical, emotional, and/or sexual abuse against someone else?
(please circle) Yes  No  If, Yes, please explain:
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

Has anyone ever described you as being abusive to them?
(please circle) Yes  No  If Yes, please explain:
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

Who in your family do you see as supportive of you?
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

Who outside of your family do you see as supportive of you?
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

Has anyone close to you (family, friend, support source) recently died?
(please circle) Yes  No  If Yes, who and when:
__________________________________________________________________________
__________________________________________________________________________

10/08 (13)  5
8. PSYCHOLOGICAL HISTORY

Have you ever received mental health counseling?
(please circle) Yes No If yes, what type: Inpatient Outpatient
For what reason: ____________________________
When: ______________________________________
Where: ______________________________________
Outcome: _____________________________________

Have you ever used or been prescribed a medication to assist you with anxiety, depression or some other type of mental health problem?
(please circle) Yes No

<table>
<thead>
<tr>
<th>Medication</th>
<th>Why did you take it?</th>
<th>Year</th>
<th>How much did it help?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Have you ever experienced: ____ Thoughts of suicide; ____ Plans of suicide; ____ Attempted suicide: (please circle one) Yes No If yes, please describe when and how:

________________________________________

THOUGHTS: Please check how often the following thoughts occur to you:

<table>
<thead>
<tr>
<th>Thought</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life is hopeless</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am lonely</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No one cares about me</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am a failure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most people don't like me</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I want to die</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I want to hurt someone</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am so stupid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am going crazy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10/08 (13)
I can't concentrate  Never  Rarely  Sometimes  Often
I am so depressed  Never  Rarely  Sometimes  Often
People can read my mind  Never  Rarely  Sometimes  Often
I have no emotions  Never  Rarely  Sometimes  Often
Someone is watching me  Never  Rarely  Sometimes  Often
I hear voices in my head  Never  Rarely  Sometimes  Often
I feel out of control  Never  Rarely  Sometimes  Often

Please comment if any of the above thoughts are a concern to you. State how often they occur, the intensity, and how they affect you:

---

**BEHAVIORS AND SYMPTOMS**

Please check the behaviors and symptoms that occur more often than you would like them to:

- Aggression
- Alcohol use
- Anger
- Anxiety
- Chest pains
- Confusion
- Depression
- Distractibility
- Drug use
- Eating problems
- Elevated Mood
- Fatigue
- Guilt
- Other

- Hallucinations
- Heart palpitations
- Hopelessness
- Homicidal thoughts
- Homicidal attempts
- Impulsiveness
- Irritability
- Judgment errors
- Loneliness
- Low self-esteem
- Mood swings
- Nervousness
- Overwhelmed
- Panic attacks
- Phobias/ fears
- Recurring/ racing thoughts
- Sexual problems
- Sleeping problems
- Suicidal thoughts
- Suicidal attempts
- Disorganized
- Withdrawal
- Worrying
- "I see or hear things that others do not"

Please comment on how these behaviors and symptoms have affected your life:

---

Have any of your family or relatives had problems with emotional problems?

(please circle) Yes  No  If Yes, Who? What kind of problems?

---

10/08 (13)
5. **SOCIAL**

Do you usually spend your free time with other people or alone?

__________________________________________________________________________

If you spend it with other people, who are they (friends, family, classmates, etc.)?

__________________________________________________________________________

Name three things you like to do in your free time and the last time you did them.

<table>
<thead>
<tr>
<th>Activities</th>
<th>Last Done</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
</tbody>
</table>

Are you involved in any risk-taking behaviors (such as: drag racing, parachuting, fights, unprotected sexual intercourse, sharing IV drug paraphernalia)?

(please circle) Yes No. If yes, please describe:

__________________________________________________________________________

If you prefer you may leave this blank, your counselor can discuss with you. Please circle your sexual orientation:

Straight  Gay  Lesbian  Bisexual  Transgender

Do you consider yourself to have been raised in a particular culture?

(please circle) Yes No. If Yes, please explain:

__________________________________________________________________________

Do you consider yourself to be presently living in a particular culture?

(please circle) Yes No. If Yes, please explain:

__________________________________________________________________________
10. **RELATIONSHIP AND/OR MARITAL HISTORY**

Circle one:  Single (never married)  Married  Separated  Divorced  Widow(er)  Cohabiting (living with someone)

If you are in a current marriage/relationship, how long has it existed?

Please describe past marriages/important relationships, dates of divorce/separation and any future plans:

Do you have children? (please circle) Yes  No.

If Yes:  How many daughters ______  Ages: ______
        How many sons: ______  Ages: ______

Are your children living with you? Yes  No

If yes, please describe when and how. If No, please describe the circumstances:

If not, do you have regular contact (e.g., see them, talk to them)?

Have your children, spouse or significant other had substance abuse or mental health problem? (please circle) Yes  No. If Yes, please describe who, what type of problem, and treatment received:

Do you want your family to be involved in treatment? (please circle) Yes  No. If yes, how? (family sessions, phone calls, etc.)

11. **SPIRITUAL/RELIGIOUS BACKGROUND**

Please describe your religious upbringing, if any:

Please describe your present religious affiliation:

Does your lifestyle match your beliefs? (please circle) Yes  No
12. MILITARY HISTORY
Have you been in the military service? (please circle) Yes  No.

If Yes, give dates, branch, rank and discharge type:

________________________________________

Were you involved in combat? (please circle) Yes  No  If Yes, do you experience any lasting affects? ______________________________________

Are there any alcohol or drug problems related to your military service? (please circle) Yes  No  If Yes, please describe:

________________________________________

13. CRIMINAL JUSTICE INFORMATION
Have you been arrested and/or convicted of a crime as an adult? (please circle) Yes  No  If yes, please list:

<table>
<thead>
<tr>
<th>Date</th>
<th>Offense</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Do you have a case pending in court? (please circle) Yes  No
If yes, please explain:

________________________________________

Are you currently on probation or parole? (circle one) for what offense?

________________________________________

Your probation/parole is from (date): ____________ to ________________

Your probation/parole officer is: ________________________________

Were you ever arrested and/or convicted of a crime as a juvenile? (please circle) Yes  No

<table>
<thead>
<tr>
<th>Age</th>
<th>Offense</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10/08 (13)
Have you had any violations of parole or probation?

<table>
<thead>
<tr>
<th>Date</th>
<th>Offense</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Are you now or in the past had an affiliation or been a member of a gang?
(Please circle) Yes  no

How often have you driven under the influence of alcohol or other drugs in the last 12 months?

___ Never ___ Seldom ___ Sometimes ___ Often ___ Frequently

Have you been involved in a vehicle accident(s)?
(Please circle) Yes  No. If, Yes, explain:

Was your alcohol or drug use involved in any court cases, arrests or accidents?
(Please circle) Yes  No. If, Yes, explain:

What was the BAL: ______

Driver's license: _____ Full privileges _____ Suspended _____ Restricted

Never had one _____ Expired

How many times have you been arrested for driving under the influence?

<table>
<thead>
<tr>
<th>Dates</th>
<th>BAL:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 14. CHEMICAL USE HISTORY (Self)

<table>
<thead>
<tr>
<th>Drug Category</th>
<th>Age of First Use</th>
<th>Age of Last Use</th>
<th>When Using the Most—How Much And How Often</th>
<th>How Often Have You Used in Past 30 Days</th>
<th>Amount Used in Past 48 Hours</th>
<th>Date of Last Use</th>
<th>Route of Administration (Drink, Inhal, Smoke, Snort, Inject)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Beer, Wine, Liquor, Cough Medicines)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cocaine</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crack</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marijuana/Hashish</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opiates</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Heroin, Vicodin, Oxycodone, Codeine)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Methadone</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hallucinogens/LSD Acid</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(LSD, PCP, Angel Dust, Mushrooms)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inhalants</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Glue, Gasoline, Household Products)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amphetamines</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Methamphetamine, Crystal Meth, Speed, Diet Pills/Ephedrines)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tranquilizers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Valium, Librium and Xanax)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prescription Drugs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Antidepressants, anti-anxiety, ADHD Meds, Psychotropics)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOBACCO</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(cigarettes, cigars, pipes, chew)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caffeine</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Coffee, Tea, Colas)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Club Drugs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Special K, Ecstasy, GHB, Roofies, MDMA)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10/08 (13)
What is your first drug of choice? _______________________
Second Choice? _______________________
How many times has your use resulted in blackouts? ________________

Have you ever used drugs intravenously? (please circle) Yes No What
Drugs: ____________________________________________________________________

Have you ever overdosed on any drug? (please circle) Yes No
If Yes, which drug: ____________________________________________________________________

Your longest period of abstinence from drugs/alcohol was:
______________________________________________________________________________

When did it occur? ____________________________________________________________________
How did you do it? ____________________________________________________________________

Which areas of your life have been affected by your drug and/or alcohol use? (check all that apply)

____ financial ______ marital _____ family ______ legal ______ sexual

____ emotional ______ health ______ children other: ______________________

Have you ever participated in treatment for drug and/or alcohol use? (please circle one) Yes No
If so, when and where:

Date
Agency
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

Client Signature ___________________________ Date ______________

Staff Signature ___________________________ Date ______________