AN EXAMINATION OF THE COMPONENT STRUCTURE OF THE SOCRATES AND RELATIONSHIPS WITH COGNITIVE FACTORS ACROSS THREE TREATMENT GROUPS

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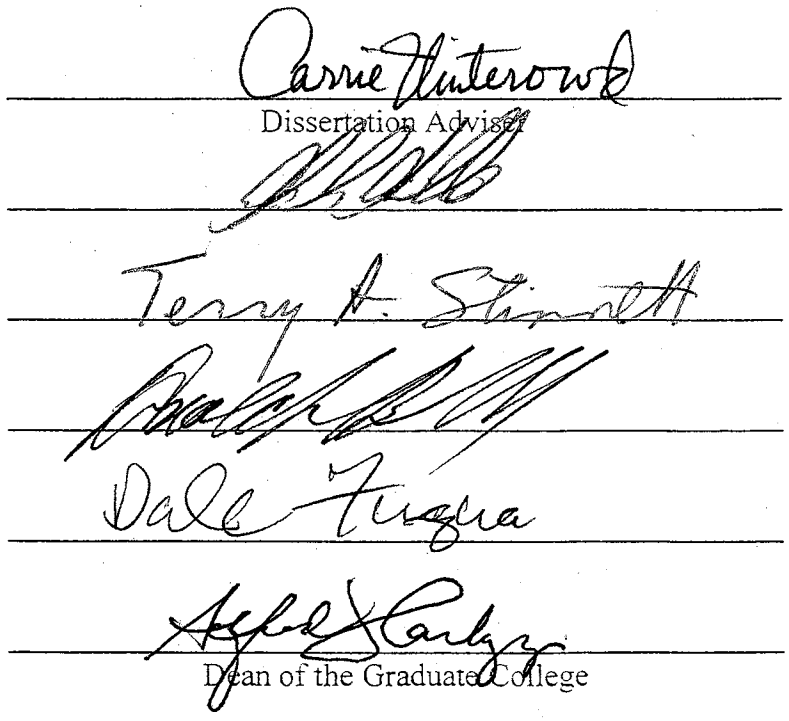

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CHAPTER 1

INTRODUCTION

Overview of the Study

Despite the concentrated efforts of numerous government prevention programs, community outreach agencies, and clinical treatment facilities, alcohol use and the destructive (often criminal) behaviors associated with it continue to present significant social difficulties. Adding to these social difficulties are individual factors, such as perceived attributes of low self-esteem and self-efficacy (DiClemente, 1986; Miller, 1985), imbalance in decision-making processes (Jannis & Mann, 1977), and inadequate motivation (Miller, Benefield, & Tonigan, 1993), which present complex challenges to alcohol dependency treatment. Perceived attributes of low self-esteem and self-efficacy have been related to client's resistance to change (Clifford, 1983) and client's high rates of relapse (Marlatt, 1996; Marlatt & Gordon, 1985). Decision-making processes (i.e., the costs versus the benefits of change) have been directly related to stages of change (i.e., motivation) for a wide range of behaviors (Cunningham, Sobell, Gavin, Sobell, & Breslin, 1997) and are seen as a critical process in changing addictive behaviors (Velicer, DiClemente, Prochaska, & Brandenburg, 1985). Motivation for treatment within the alcohol abusing population has been negatively impacted by various factors such as denial (Metzger, 1988), reluctance and active hostility (Dean, 1958), resistance (Strean,

1990), and ambivalence (Prochaska, DiClemente, & Norcross, 1992; 1998), adding to treatment difficulties (Carney & Kivlahan, 1995). However, little is known about the relationship of motivation for change in clients and cognitive factors such as self-efficacy in coping with the temptation to drink and their decision-making processes.

If clients could become more confident in their ability to abstain, learn to cope with their temptations to drink, and have a clearer understanding of the costs and benefits of their alcohol use, they might be more motivated to change their drinking behavior. In addition, a variety of treatment programs are available for clients with substance abuse problems, which include different treatment settings (e.g., inpatient, intensive outpatient, and mandated drug court) and treatment modalities (e.g., 12-Step Program, Motivational Enhancement Therapy, and Moral Reconnitation Therapy). If clients were appropriately matched to treatment programs with consideration to their awareness of an alcohol problem, their motivation for change, and the severity of their problems, they might be more successful in changing their drinking behavior.

Motivation and Stages of Change

Lack of compliance, unwillingness to participate in treatment, and poor treatment outcomes have been attributed to low client motivation (Miller et al., 1993). Dean (1958) contended that psychotherapy should begin with the meeting of two requirements: admission of a problem and a desire to change. To satisfy these requirements, what then are the more helpful strategies for resolving resistance and motivating behavioral change in the problem drinker or the alcoholic? Aggressive and confrontational interventions were once regarded as optimal strategies; however, a more respectful and individualized

approach appears to provide an increase in motivation and a decrease in resistance (Hester & Miller, 1989; Prochaska, DiClemente, & Norcross, 1998).

From the Transtheoretical Therapy Model (TTM), initially proposed by Prochaska and DiClemente (1982), other researchers (Miller & Tonigan, 1996; and Prochaska et al., 1992; 1998) and national organizations (NIAAA, 1997a) argued that substance abuse treatment should be matched to the individual characteristics of clients, particularly their awareness of a problem and their readiness to change. The impact of the TTM on health behaviors has been likened to that of a Kuhnian paradigm shift (Budd & Rollnick, 1996) due to its comprehensiveness and movement towards a "higher-order theory of therapy" (Prochaska, 1984, p. 367). The TTM includes cognitive, motivational, social learning, and relapse prevention theories (Morera, Johnson, Parsons, & Warnecke, 1998) and it applies equally for those individuals engaged in self-change as for those individuals involved in therapist-assisted change (Annis, Schober, & Kelly, 1996).

Prochaska (1982) and colleagues (Prochaska et al., 1992; 1998) developed the transtheoretical stages of change model to identify and explain the five stages of change that occur in clients with addictions: precontemplation, contemplation, preparation, action, and maintenance. Those individuals who were identified as fitting into the precontemplation and contemplation groups appeared to be individuals attributed with characteristics of denial, resistance, ambivalence, and reluctance. Those individuals who were identified as being in the preparation and action groups appeared to have decided upon a course of action and are at various points in making direct and indirect behavioral changes. Those individuals who were classified in the maintenance group achieved some

measure of success in adapting to healthier behaviors and are taking necessary steps to maintain or improve this apparent success.

Miller and Tonigan (1996) developed the Stage of Change Readiness and Treatment Eagerness Scale (SOCRATES) to explore the stages of change readiness with problem drinkers (i.e., motivation to change). The SOCRATES is based upon the TTM (Prochaska, & DiClemente, 1982) and the transtheoretical stages of change model (Prochaska & DiClemente, 1982; Prochaska et al., 1992; 1998). The 19-item version of the SOCRATES generated three factors (Ambivalence, Recognition, and Taking Steps) that Miller and Tonigan (1996) described as being "better understood as continuously distributed motivational processes that may underlie stages of change" (p.85). Ambivalence is defined as having mixed feelings whether one has an alcohol problem or not. Recognition is one's awareness that an alcohol problem exists and there is a willingness to take action. Taking Steps refers to one's acceptance of an alcohol problem with the initiation of some corresponding behavioral changes.

Decisional Balance

Janis and Mann (1977) identified five stages in the decision-making process: (1) appraising the challenge, (2) surveying alternatives, (3) weighing alternatives, (4) deliberating about commitment, and (5) adhering despite negative feedback. These five stages provided the basis for developing the Decisional Balance Sheet of Incentives (Janis & Mann, 1977) as a guiding template for understanding the cognitive and motivational aspects in a decision-making process. Decision making is viewed as a "gain" (comparative model; Janis & Mann, 1977), as opposed to a "loss" (absolute model; Velicer et al., 1985). There are four consequences of the decision-making process:

(1) utilitarian gains and losses for self, (2) utilitarian gains and losses for others, (3) self-approval or self-disapproval, and (4) approval or disapproval from significant others (Janis & Mann, 1977). The gains and approvals are seen as "benefits of change" whereas the losses and disapprovals are seen as "costs of change."

The Decisional Balance Sheet of Incentives (Janis & Mann, 1977) has been adapted for evaluating the costs and benefits of changing alcohol or drug use (Cunningham et al., 1997), smoking cessation (Velicer et al., 1985), choosing a college (Mann, 1972), exercise (Hoyt & Janis, 1975), and diet (Colten & Janis, 1982). Two research studies have examined decisional balance with a substance abuse population (Cunningham et al., 1997; and Solomon & Annis, 1990). These studies provided mixed results regarding the relationship of cost and benefits and drinking outcomes. One of these studies led to the development of the Alcohol and Drug Consequence Questionnaire with results indicating a positive relation between anticipated costs and benefits of change and drinking outcomes (Cunningham et al., 1997). The other study was designed to predict post treatment drinking behavior and resulted in no relationship being found between costs and benefits of change and drinking outcomes (Solomon & Annis, 1990).

In two studies, stages of change and decisional balance (perceived costs and benefits of making a behavioral change) were explored in relation to a variety of behaviors (smoking cessation, quitting cocaine, weight control, condom use, safer sex, and high fat diets) to assess for an interaction effect (Prochaska et al., 1994; Velicer et al., 1985). In one study, decisional balance and stages of change was mutually enhanced when studied together, and reinforced the notion of utilizing a more simplified, two-item subscale (costs and benefits of change) decisional balance schema (Prochaska et al.,

1994). Of interest, however, is that few studies have explored the relationship between stages of change and decisional balance in an alcohol abusing population.

Self-efficacy

Self-efficacy is defined as an individual's belief in his or her ability to perform a certain task (Bandura, 1977). Further, the belief in one's ability to perform a certain task is a central component of personal agency (Bandura, 1989). Self-efficacy beliefs are believed to be central components that impact behavioral change by influencing motivation, information processing and perception, effort, and action (Bandura, 1989). Self-efficacy is regarded as theoretically relevant to the treatment of alcoholism and the prevention of relapse (DiClemente, 1986; Isenhart, 1994; Marlatt & Gordon, 1985; Miller et al., 1993). Belief in one's ability to cope with alcohol abstinence (confidence self-efficacy) and belief in one's ability to resist the temptation to drink (temptation self-efficacy) are critical relapse prevention determinants (Marlatt, 1996; Marlatt & Gordon, 1985).

Following the work of Marlatt and Gordon (1985), which asserted that an individual's self-efficacy beliefs and self-efficacy efforts in coping with high risk situations protects against relapse, DiClemente, Carbonari, Montgomery, and Hughes (1994) developed a specific measure, the Alcohol Abstinence Self-efficacy Scale (AASE). The AASE is based upon the strength value of one's coping self-efficacy to examine confidence and temptation self-efficacy in an alcohol abusing population.

Although an individual's self-efficacy beliefs contribute to relapse prevention (Marlatt & Gordon, 1985) these beliefs have also been related to predictions of future behaviors (Bandura, 1986), and motivation for smoking cessation (DiClemente,

Prochaska, & Gibertini, 1985). An individual's self-efficacy for coping is situation specific (Bandura, 1977). Several studies have examined situation specific self-efficacy beliefs. Drinking self-efficacy has been associated with stages of change in DUI offenders (Wells-Parker, Williams, Dill, & Kenne, 1998) and smoking abstinence (Haaga & Stewart, 1992).

Relationship Between Stages of Change and Cognitive Factors

Few studies to date have examined the relationship between stages of change readiness (Ambivalence, Recognition, and Taking Steps) and cognitive processes, such as coping self-efficacy and decision-making processes in substance abuse clients. Herzog, Abrams, Emmons, Linnan, and Shadel (1999) investigated processes of change and decisional balance as predictors of movement through the five stages of change (i.e., Precontemplation, Contemplation, Preparation, Action, and Maintenance; Prochaska et al., 1992; 1998). Herzog et al. (1999) conducted a cross-sectional replication and a prospective analysis of the TTM hypothesis and concluded that the processes of change do not predict progressive movement through the stages of change. In addition, Herzog et al. (1999) examined decisional balance (i.e., the pros and cons of smoking) and likewise concluded that decisional balance provided no prediction of progressive movement through the stages of change.

The relationship between stages of change (i.e., precontemplation, contemplation, preparation, action and maintenance) and decisional balance (i.e., costs versus benefits of change) for 12 problem behaviors was examined in one study (Prochaska et al., 1994). Results indicated three highly predictable patterns: (1) benefits of change related to the

action stage of change and costs of change related to the precontemplation stage of change, (2) movement from precontemplation to the contemplation stage correlated with an increase in the positive aspects of change (benefits), and (3) movement from contemplation to action stage correlated with a decrease in the negative aspects of change (costs).

The relationship between stages of change and both self-efficacy and decisional balance was explored in a smoking cessation sample (DiClemente et al., 1991). This comprehensive study provided similar results to other studies (Prochaska, 1994; Prochaska et al., 1994) that involved decisional balance and stages of change, in that as one moves through the stages of change (e.g., from precontemplation to contemplation, preparation, action and finally maintenance), benefits of change increased and costs of change decreased. However, the relationship between stages of change and self-efficacy was not reported in the DiClemente et al. (1991) study.

Treatment

Many inpatient or long-term therapy programs have incorporated some version of a 12-step program, typically augmented with various other treatment interventions including cognitive-behavioral therapy or rational-emotive therapy. In addition, inpatient treatment programs that have a strong 12-step foundation tend to subscribe to the Disease Concepts Model of alcohol treatment (Marlatt & Gordon, 1985). In contrast, the Public Health Model of alcohol treatment provided impetus for the development of motivational interventions, hallmarked by a relaxation of labels, emphasizing personal choice, and eliciting the client's own concerns. Consequently, the approach a therapist takes in

working with addicted clients becomes an impetus for change and sponsors client motivation (Miller, 1985). The historical connection between alcohol and crime, and subsequently the connection between the alcoholic and the criminal justice system have prompted interventions in the form of mandatory drug court programs for criminal behaviors compounded by alcohol or drug use. The drug court program typically utilizes the Moral Reconnitation Therapy (MRT). MRT is derived from an older, more confrontive treatment approach that originated in the Federal Bureau of Prisons system, and seems incompatible with the changing focus of treatment for this special population. MRT appears coercive when an individual is not ready to identify a problem or accept change. Although these types of treatment programs (and their variations) tend to be viable alternatives to no therapy, their efficacy with a substance abuse population requires additional research.

The relationship between substance abuse treatment modalities and the stages of change model was examined in a few studies. Annis, Schober, and Kelly (1996) conducted a longitudinal study that matched components of a cognitive-behavioral counseling program (assessment, motivational interviewing, individualized treatment planning, structured relapse prevention, initiation counseling, and structured relapse prevention maintenance counseling) to stages of change (precontemplation, contemplation, preparation, action, and maintenance) with clients that had an alcohol abuse problem. This study elucidated the necessity of matching treatment modality to a client's readiness for change as the results indicated the effectiveness of Structured Relapse Prevention (SRP) counseling when appropriately "matched" to clients at various stages of change (e.g., motivational interviewing with those in the contemplation stage,

SRP initiation counseling with those in the action stage, etc.). Prochaska and associates (1992) determined that doing the right thing (processes) at the right time (stages) in treatment produces more favorable results. More research is needed to understand the relationship between treatment modality selection and client stage of change. No studies to date have explored the relationship between different substance abuse treatment programs and these cognitive factors (self-efficacy beliefs and decisional balance).

In this study, the component structure of the SOCRATES was examined. In addition, differences in cognitive factors (coping self-efficacy and decisional balance) and the stages of change readiness in clients with alcohol problems were explored across different treatment programs (specific treatment modality coupled with a specific treatment setting). Different treatment modalities (i.e., 12-Step programs, Rational Emotive Therapy, Cognitive Behavioral Therapy, etc.) have been paired with different treatment settings (i.e., inpatient, out-patient, day treatment, etc.). Currently, three such combinations currently stand out: (1) inpatient treatment utilizing a hybrid 12-step treatment program, (2) intensive outpatient utilizing Motivational Enhancement Therapy (MET), and (3) mandated drug court outpatient treatment utilizing Moral Reconnitation Therapy (MRT). The treatment modalities were chosen for this study because of their potential relevance to matching, the evidence for their clinical efficacy, their distinctiveness from each other, and their application within existing treatment systems. Last, the relationships among the cognitive factors and stages of change readiness were examined.

Summary

To date, researchers have not explored the relationship between stages of change readiness (Ambivalence, Recognition, and Taking Steps), coping self-efficacy (temptation self-efficacy and confidence self-efficacy), and decision-making processes (an evaluation of the benefits and cost of changing behaviors) in changing client's alcohol use. Coping self-efficacy and decision-making processes need to be explored further in this population, given that these cognitive factors may be highly related to an individual's motivation to change as well as efforts in treatment.

Statement of the Problem

Much is known about substance abuse and addiction; however, little information has been generated that promotes an understanding of the cognitive factors underlying the substance abusers' motivation for change. While it is acknowledged that other factors have influenced behavioral change for a substance abusing population, such as environmental support, emotional states, and physiological effects (e.g., withdrawal and tolerance), it is argued that cognitive factors play a key role in influencing clients' motivation to change their drinking habits. The variables of interest in this study include the stages of change readiness (i.e., motivation to change), self-efficacy in coping with abstinence and temptations to drink, as well as decisional balance (the benefits and costs of changing drinking habits). From a cognitive-behavioral perspective, decisional balance and coping self-efficacy appear to be intricately connected to individual motivation and the initiation of behavioral change. For example, if a person believes that there are more benefits than costs to changing one's drinking patterns and is confident in

his/her ability to cope with temptations to drink and abstain from drinking, it is argued that this person will be more motivated to change his/her drinking habits (e.g., abstain and maintain sobriety). Conversely, if a person believes that there are more costs than benefits to changing one's drinking patterns and lacks confidence in his/her ability to cope with temptations to drink and abstain from drinking, it is argued that this person will be less motivated to change his/her drinking habits. Unfortunately, few researchers have investigated decisional balance and self-efficacy in coping in relation to motivation to change drinking behavior. In addition, little is known about how motivation to change, self-efficacy in coping, and decisional balance variables differ across treatment groups. Do clients across treatment settings and programs differ in their level of confidence in coping, their views on the pros and cons of drinking, or in their level of motivation to change? If significant differences are found, this information may assist mental health professionals in guiding their treatment interventions with clients in unique treatment settings.

Purpose of the Study

The purpose of this study was to (1) explore the component structure of the Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES) in this sample, (2) identify any treatment group (Inpatient, Intensive Outpatient, and Mandated Drug Court) differences on the SOCRATES components generated by this study, (3) identify any treatment group (Inpatient, Out-patient, and Mandated Drug Court) differences on the cognitive factors (Decisional Balance and Coping Self-Efficacy), and (4) explore the relationship of the SOCRATES components with the cognitive factors.

Significance of the Study

This study provided additional research on the component structure of the 19-item SOCRATES in identifying stages of change for clients with an alcohol abuse problem. The SOCRATES was specifically designed for an alcohol abusing population and has undergone several structural revisions. It is theoretically bound to the transtheoretical stages of change model and it seems logical and prudent to validate the structure of its factors (Ambivalence, Recognition, and Taking Steps) in order to underscore its utility in identifying stages of change.

This study examined the relationship of self-efficacy in coping and decisional balance with the SOCRATES components to better understand how these cognitive factors relate to client motivation and movement through the stages of change. It has been shown that the SOCRATES components, decisional balance, and coping self-efficacy provide information on the cognitive states of clients with substance abuse problems. Developing an ability to cope with the temptation to drink is seen as building confidence in abstaining, and both aspects of coping self-efficacy (temptation and confidence) appear to be linked to client motivation and stages of change. In addition, decisional balance appears to provide another element of cognition (e.g., an internal cost-benefit analysis) that seems linked to client motivation and stages of change. These cognitive processes (coping self-efficacy or self-efficacy beliefs and decisional balance) may play a key role in understanding motivation to change. Understanding these relationships is important, as it will guide treatment interventions that focus on unique decision-making and self-efficacy issues across the stages of change. That is, movement from one stage to another may be a function of self-efficacy in coping with the temptation to drink, self-efficacy in

confidence in not drinking, or cognitively weighing the cost and benefits of change. No study to date has explored this relationship with this population.

This study examined cognitive factors (decisional balance and self-efficacy beliefs) across three different treatment groups. These groups provide differing levels of structure, education, therapy, and treatment modality. In general, the three treatment groups appear to have significant differences, including graduated levels of intensity, duration (both length of stay and time in sessions), containment, and supplementation with other health-related disciplines (physical examinations, psychological testing, occupational therapy, etc.). It was hypothesized that the clients in these three treatment groups would have differences in their level of self-efficacy and decisional balance. Since inpatient treatment is more expensive and more restrictive, a higher level of motivation (higher coping self-efficacy and perceiving more benefits than costs) for change is expected. Those that are court ordered to a Drug Court treatment program are seen as being more resistive and coerced into treatment, which would indicate a lower level of motivation. The Intensive Outpatient treatment group appears to fall somewhere in the middle. Entering into a particular treatment group might be a function of the identified cognitive factors (self-efficacy in coping with the temptation to drink, self-efficacy in confidence in not drinking, or cognitively weighing the cost and benefits of change). No study to date has explored these cognitive factors across different treatment groups.

Finally, this study provided more information on differences in stages of change readiness across treatment setting and treatment modality (Inpatient with TSF, Intensive Outpatient with MET, and Mandated Drug Court with MRT). It was proposed that if significant differences in SOCRATES components were found across the treatment

modalities, then these findings could guide decisions regarding treatment matching based on a client's readiness to change. Interventions that consider and match stages of readiness to change to available treatment modalities were likely to provide a better fit between client and treatment, and produce a more positive outcome. However, since the participants in this study were already "matched" to treatment prior to completing any questionnaires, the utility of the SOCRATES as a measure for treatment matching was not addressed directly. Direct treatment matching relies on individual scores and this study utilized group scores. Instead, the SOCRATES was used to provide information on motivation for change by identifying the component structure of the instrument for this sample. If there are significant group differences on the SOCRATES components, this might provide information on motivation and stages of change within a particular treatment group. From the literature, it appears that higher levels of motivation are positively correlated with a higher placement on the stage of change continuum and on the selection of treatment. No study to date has explored the SOCRATES components for individuals already in treatment or across different treatment groups.

Research Questions

The following research questions were addressed in this study:

1. What is the component structure of the 19-item SOCRATES for this sample?

2. Do the SOCRATES components extracted in this study differ across substance abuse treatment programs (Inpatient treatment utilizing a hybrid 12-step treatment program, Intensive Outpatient utilizing Motivational Enhancement Therapy, and Mandated Drug Court treatment utilizing Moral Reconnitation Therapy)?

3. Do the cognitive factors differ across substance abuse treatment programs (inpatient treatment utilizing a hybrid 12-step treatment program, intensive outpatient utilizing Motivational Enhancement Therapy, and mandated drug court outpatient treatment utilizing Moral Reconnitation Therapy)?

a. Do the decisional balance subscales (Costs and Benefits of Change) differ across substance abuse treatment programs?

b. Do the coping self-efficacy (Temptation and Confidence) subscales (Negative Affect, Social/Positive, Physical and Other Concerns, Withdrawal and Urges) differ across substance abuse treatment programs?

4. What is the relationship of the SOCRATES components with the cognitive factors associated with substance use (decisional balance and coping self-efficacy)?

a. What is the relationship of the SOCRATES components with the Decisional Balance subscales (Cost and Benefits of Change)?

b. What is the relationship of the SOCRATES components with the Coping Self-efficacy subscales?

Null Hypotheses

The following null hypotheses were tested in this study:

1. There will not be significant differences in the SOCRATES components across treatment programs.

2. There will not be significant differences in the cognitive factors across treatment programs.

3. There will be no significant relationship between SOCRATES components and the cognitive factors associated with substance use (decisional balance and coping self-efficacy).

Definitions of Terms

Motivation – Motivation is "a state of readiness or eagerness to change, which may fluctuate from one time or situation to another" (Miller & Rollnick, 1991, p.14). Lack of motivation is often seen as an individual's primary barrier to initiate successful change (Dean, 1958). Motivation is seen as an essential cognitive factor that moves one successfully through the stages of change (Prochaska, DiClemente & Norcross, 1998). For the purpose of this study, motivation to change will be defined by three factors extracted from the Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES) in this sample.

Treatment Program – In this study, treatment program refers to the combination of treatment modality and treatment setting.

Treatment Modality – In this study, three treatment modalities are identified: (1) 12-Step Facilitation, (2) Motivational Enhancement Therapy, and (3) Moral Reconnitation Therapy.

Treatment Setting – In this study, three treatment settings are identified: (1) Inpatient, (2) Intensive Outpatient, and (3) Mandated Drug Court.

Inpatient Treatment and 12-Step Model – For the purpose of this study, inpatient treatment was classified as a residential (24 hours a day) program designed to immerse an individual in a structured recovery setting. The 12-Step Model was adapted

from the 12 steps and 12 traditions of Alcoholics Anonymous (AA) and formed the basis of treatment. Treatment was typically augmented with other therapeutic approaches, including cognitive-behavioral, humanistic, narrative and systems theory.

Intensive Outpatient Treatment and Motivation Enhancement Therapy – For the purpose of this study, intensive outpatient treatment comprised a minimum of three days per week (four hours per day) of individual and group therapy. Motivation Enhancement Therapy was designed to provide educational awareness, motivation for change, and enhance the aspects of recovery. That is, MET extols the benefits of abstinence or recovery while building self-esteem and self-efficacy beliefs.

Mandated Drug Court Treatment and Moral Reconnitation Therapy – For the purpose of this study, Mandated Drug Court refers to a community based program in which participants were court-ordered for treatment, typically subsequent to a conviction of criminal offense involving alcohol or drugs. Moral Reconnitation Therapy refers to the treatment program utilized by most treatment agencies that are aligned with the drug court program. MRT involves attendance to two groups per week that last for sixty to ninety minutes. The central theme of MRT assets that people use alcohol or drugs because they have a corrupt moral-value system and the program is designed to coerce individuals to actively subscribe to socially acceptable moral values.

Transtheoretical Stages of Change Model – Developed from the Transtheoretical Therapy Model (TTM) research of Prochaska and DiClemente (1982), the Transtheoretical Stages of Change Model (Prochaska, 1984; Prochaska et al., 1992; 1998) was originally designed to measure how people change addictive behaviors on their own.

Current research identifies five stages of change under this model: Precontemplation, Contemplation, Preparation, Action, and Maintenance.

Precontemplation Stage – The stage at which behavioral change is not seen as probable in the foreseeable future. Individuals are unaware or under-aware of any addictive problem.

Contemplation Stage – The stage in which individuals are aware of an addictive problem—possibly even ruminating about taking action; however, no commitment is made and no action is taken. Individuals in this stage are also seen as weighing the cost and benefits of change and identifying possible solutions to their problems.

Preparation Stage – Originally called decision-making, it is defined as the stage that combines commitment to change and behavior that supports this commitment. Typically, individuals in this stage are preparing to take action within thirty days and have been unsuccessful in taking action within the past year.

Action Stage – The stage in which individuals change their attitudes and behaviors to resolve their problems. This stage requires serious commitment; consequently, behavioral change is usually overt and purposeful. The time period for altering behavior starts at one day and carries on to six months.

Maintenance Stage – The stage in which individuals work to prevent lapses and relapse. In addition, in this phase marks the integration and compilation of successes along a continuum.

Stages of Change Readiness – The Stages of Change Readiness and Treatment Eagerness indicates the client's level of recognition of a substance abuse problem and the

willingness to take steps toward recovery and maintenance. It is measured by the SOCRATES (Miller & Tonigan, 1996), which identifies change states in problem drinking. Structured from the transtheoretical stages of change model (Prochaska, 1984; Prochaska and DiClemente, 1982; Prochaska et al, 1992; 1998), the 19-item SOCRATES has three factors: Ambivalence, Recognition, and Taking Steps.

Ambivalence – Defined as mixed feelings about whether one has an alcohol problem or not. Ambivalence is measured by the third factor of the 19-item SOCRATES and appears to correlate well to the contemplation stage of change, representing a low level motivation for change.

Recognition – Defined as awareness that one has an alcohol problem and a willingness to take action. Recognition is measured by the second factor of the 19-item SOCRATES and appears to correlate well to the preparation stage of change, representing a medium or moderate level of motivation for change.

Taking Steps – Defined as an acceptance of an alcohol problem and is hallmarked by an initiation of behavioral changes related to an alcohol problem, including maintenance of these behavioral changes. Taking Steps correlated well with the action and maintenance stages of changes and seems to represent a high level of motivation for change.

Coping Self-efficacy – In general, self-efficacy is defined as an individual's belief in his or her ability to perform a certain task (Bandura, 1977). In this study, coping self-efficacy was comprised of two components: Confidence Self-efficacy and Temptation Self-efficacy. These two scales provided four subscales. The first subscale, Negative Affect (NA), refers to intrapersonal and interpersonal negative states. Positive/Social

(SP), the second subscale, is characterized by social drinking situations and the use of alcohol to enhance positive states. The third subscale, Physical and Other Concerns (PC), is hallmarked by physical discomfort or pain, concerns about others, and drinking dreams. Withdrawal and Urges (WU) represents the forth subscale and is representative of withdrawal, cravings, and a testing of one's willpower (DiClemente et al., 1994).

Confidence Self-efficacy – Defined as the extent to which an individual believes he or she has confidence in not drinking alcohol under certain conditions or situations. Confidence Self-efficacy was assessed across the four subscales from the Alcohol Abstinence Self-Efficacy Questionnaire (AASE): Negative Affect, Social/Positive, Physical and Other Concerns, Withdrawal and Urges.

Temptation Self-efficacy – Defined as the extent to which an individual believes he or she can cope with the temptation to drink alcohol under certain conditions or situations. Temptation Self-efficacy was assessed across the four subscales from the Alcohol Abstinence Self-Efficacy Questionnaire (AASE): Negative Affect, Social/Positive, Physical and Other Concerns, Withdrawal and Urges.

Negative Affect (NA) – Refers to intrapersonal and interpersonal negative states.

Social/Positive (SP) – Is characterized by social drinking situations and the use of alcohol to enhance positive states.

Physical and Other Concerns (PC) – Is hallmarked by physical discomfort or pain, concerns about others, and drinking dreams.

Withdrawal and Urges (WU) – Is representative of withdrawal, cravings, and a testing of one's willpower

Decisional Balance – For the purpose of this study, decisional balance was defined as the decision-making processes in which an individual weighed the pros and cons of changing behaviors related to an alcohol problem. Decisional Balance was measured by the Alcohol and Drug Consequence Questionnaire (ADCQ), which was specifically designed to measure the benefits and costs of changing a drug or alcohol problem and to represent the dichotomous split of cost versus benefit (Velicer et al., 1985).

Benefits of Change – Benefits of change have been used interchangeably with pros of change or gains, and typically represent the perceived positive dichotomous elements in any decision-making process. The ADCQ benefits of change are the positive aspects of a decision.

Costs of Change – Costs of change have been used interchangeably with cons of change or losses, and typically represent the perceived negative dichotomous elements in any decision-making process. The ADCQ costs of change are the negative aspects of a decision.

Assumptions

1. Individuals participating in this study are representative of an alcohol abusing population and they have accurately responded to the questionnaires.
2. The assessment instruments chosen for this study are valid and reliable measures of the identified variables.
3. Each treatment group is comprised of a formulated treatment protocol that is relatively consistent for each participant.

CHAPTER 2

REVIEW OF THE LITERATURE

Introduction

As mentioned previously, the abuse of alcohol continues to present a serious public health hazard and a significant drain on our nation's financial resources. Mental health care professionals (including medical doctors and psychologists) often see individuals that are identified with an alcohol problem as victims of an illness. Conversely, they are seen as offenders by the criminal justice system. Approaches to alcohol treatment have undergone considerable modification due, in part, to many social, moral, and political issues. To further understand these complex issues and their considerable impact on current treatment, a brief discourse on the sociopolitical history of alcohol use and abuse is presented. Following this historical perspective, a review of pertinent research regarding the clinical treatment of this special population is presented. This includes national studies on appropriate matching of individual to treatment based upon certain cognitive factors and the impact of the transtheoretical stages of change model. In addition, an exploration of these cognitive factors, stages of change, and implications for treatment is offered.

Sociopolitical Antecedents

Human beings have delved into potions and herbal remedies since the beginning of recorded time. Archaeological evidence has demonstrated the use of opium as far back as 4000 B.C., marijuana use in China as far bask as 2000 B.C., and alcohol use in Egypt at about 1500 B.C. (Ehrenwald, 1991; and Palfai & Jankiewicz, 1997). The use of naturally occurring compounds such as morning glory seeds, cannabis, poppies, coca, and peyote cactus buds predated the first uses of alcohol. In general, the evolution of human development and the archaeology of human experiences are filled with references to alcohol and drugs.

The colonization of America saw financial wealth in tobacco farming and alcohol manufacturing. Caffeine and marijuana use soon followed. By the end of the 1700's, the use of marijuana and opium had become more widespread. Alcohol, caffeine, marijuana, and opium were noted as the drugs most in use up to the time of the Civil War. Segal (1988) suggested that society had initially responded to drug use with ambivalence. This ambivalence was eventually followed by a rejection of alcohol due to an association with class differences, moral corruptibility, and social outcasts (Segal, 1988).

Temperance movements formed prior to the beginning of the Civil War, sponsored in part by social forces that likened a greater political strength for farmers (Gusfield, 1963). Throughout this period, beer consumption had risen from 2.17 gallons per capita in 1850 to 5.30 gallons in 1860 (Segal, 1988). Political groups such as the American Protestant Morality and the New England Federalist dropped a unified call for voluntary temperance and demanded total abstinence, which demonstrated a shift in their philosophy from temperance or moderation to that of the prohibitionist. Oregon ratified a

state prohibition in 1843 and Maine followed in 1851 (Cherrington, 1968). The onset of the Civil War brought the Federal government into action with additional taxation on alcoholic beverages. Alcohol taxation was the major source of Federal income until the prohibition era (Segal, 1988). Beer consumption continued to increase, with 8.73 gallons per capita in 1870, 11.16 gallons in 1880, and 17.94 gallons in 1890 (Segal, 1988).

Up until the late 1800's and early 1900's, the use of medications, drugs, tonics, or remedies was unregulated and caused considerable concern among the medical community and various political groups (Segal, 1988). In 1906, Congress took action under the Pure Food and Drug Act, which required the labeling of any food or beverage that contained a controlled drug. The Harrison Act of 1914 prohibited the unauthorized sale, possession, or purchase of any narcotic drugs. Consequently, the non-medical use of these controlled drugs, including their possession, was likewise considered illegal (Segal, 1988). In actuality, the Harrison Act was not a drug control act, but a taxation measure designed to insure continued revenue. The Harrison Act was open to wide interpretation, including a Supreme Court ruling that physicians could not prescribe narcotics to an addict for the purpose of maintaining an addiction, even though the Act specifically approved physician discretion in prescribing narcotics in the course of their practice (Segal, 1988). This Supreme Court decision had apparently created a market for illegal drugs. More importantly; however, it directly associated drug use with criminal behavior.

The consumption of alcohol was not excluded from this turn-of-the-century drive for a better society. Movements formed by the Woman's Christian Temperance Union (WCTU) in 1874 and the Anti-Saloon League (ASL) in 1893 reached a peak at the start

of the First World War. On January16th, 1920, an act of Congress (overriding a presidential veto) passed the Volstead Act, which prohibited the manufacture, sale, distribution, and consumption of alcohol in any of its form. The repeal of prohibition in 1933 opened the door to heavy taxes on the manufacture and sale of alcohol.

Federal legislation against drugs of abuse continued to revolve around issues of taxation. Marijuana use maintained a steady increase and Congress passed legislation that classified marijuana as a narcotic drug, stating that it is, "addictive, criminogenic and insanity producing" (Segal, 1988, p. 30). The Marijuana Tax Act of 1937 initiated similar controls on marijuana that were levied by the Harrison Act on opium and its cocaine derivative (Segal, 1988). More recently, Congress passed the Comprehensive Drug Abuse Prevention and Control Act in 1970, which attempted to regulate substance use and control. This Act established Federal substance schedules for the various drugs (Schedule I through Schedule V) according to their potential for abuse and demarcated jurisdiction for drug control as well as penalties for violations (e.g., drug users and drug traffickers) segregated by the substance schedules (Segal, 1988). In 1986, President Regan signed a secret national security directive that defined drug trafficking as a national security threat, which allowed the Department of Defense to use military force to stop the influx of drugs into the country (Segal, 1988).

The "War on Drugs" campaign that had permeated the last twenty years of our nation's sociopolitical global intervention strategy appeared ineffective, especially in light of what drugs were considered problematic (e.g., opioids, hallucinogenics, and amphetamines) compared to the drugs that have caused more damage to more people (e.g., nicotine, alcohol, and caffeine). According to annual surveys conducted by the

Substance Abuse and Mental Health Service Administration (SAMHSA), the prevalence of alcohol use remained the same from 1996 to 1997; however, alcohol consumption had increased among the 12 to 17 year-old population (SAMSHA, 1997). SAMSHA also estimated that 111 million individuals (ages twelve and older) used alcohol within the last thirty days prior to participating in the survey. Of this group, more then 40 percent had engaged in binge drinking (SAMSHA, 1997).

The consumption of alcohol has also been associated with a variety of criminal behaviors including manslaughter (68 % had been drinking), assault (62 % had been drinking), murder and attempted suicide (54 % had been drinking), robbery (48 % had been drinking), and burglary (44 % had been drinking; U.S. Department of Health and Human Services, 1987). Of those individuals incarcerated for rape offenses, 42.2 % reported being under the influence of alcohol (Collins & Messerschmidt, 1993). The National Highway Traffic Safety Administration (NHTSA; 1999) reported 15,936 alcohol related traffic fatalities in 1998. One person has been injured every thirty seconds as a result of alcohol-related accidents. The estimated cost of alcohol-related motor vehicle accidents was holding at 45 billion dollars per year (NHTSA, 1999). In addition to the direct cost of alcohol related incidents and criminal behavior, the cost to arrest, try, sentence, and incarcerate those found guilty had been staggering. The National Institute on Alcohol Abuse and Alcoholism (NIAAA, 1992) added to the NHTSA's 45 billion dollar figure, the cost of health consequences, job loss, and decreased productivity, and estimated the total cost to society at 246 billion dollars per year.

In summary, this sociopolitical history suggests that the legislative controls placed on drugs and alcohol by the federal government were originally enacted to: (1) insure a

measure of revenue, (2) curb the moral degeneration of society, and (3) combat the illegal activities of drug traders. The government's attitude, and subsequently the public's perception of addictive disorders (specifically alcoholism) seemed to be enmeshed with moralistic and criminal attributes derived from public health concerns, differing morals and values, and the direct and indirect economic costs. Government interventions appeared to have revolved around controlling drug and alcohol availability and use (e.g., raising the drinking age and lowering the blood-alcohol content level for driving under the influence), and prevention education efforts have been recently directed at young children.

The influence of these numerous prevention and control programs have underscored the perception that alcoholism in general and alcoholics specifically had been blamed for many social problems. Early models of understanding addiction underscored this victimization of the alcoholic by large portions of society, including the medical community. The Moral Model viewed alcoholism as a sin, the General Systems Model viewed alcoholism as a family dysfunction, the Characterological Model viewed alcoholics as personality disordered, and the Social Learning Model viewed continued alcohol use as either a knowledge or skill deficit (Hester & Miller, 1989). Despite these enormous intervention and prevention efforts, alcohol problems have continued to plague our society.

Overview

In response to the direct and indirect cost attributed to alcoholism and the resulting social problems presented thus far, the National Institute of Alcohol Abuse and Alcoholism (NIAAA; 1997a) launched a five-year, multisite study to examine substance abuse treatment matching. Project MATCH (Matching Alcoholism Treatments to Client Heterogeneity) was initiated by the NIAAA's Treatment Research Branch to evaluate the interaction between patients and the alcoholism treatment centers that provided services to them. Project MATCH was the largest and most powerful (statistically) psychotherapy research study ever conducted (Project MATCH Research Group, 1997). This program involved two independent matching studies (outpatient [$N = 952$] and an aftercare program that followed inpatient treatment [$N = 774$]) that paralleled each other (Carroll, Conners, Cooney, DiClemente, Donavon, Kadden, Longabaugh, Rounsaville, Wirtz, & Zweben, 1998). Participants were chosen on the basis of research and theory, which included the severity of an individual's alcohol involvement, cognitive impairment, psychiatric severity, conceptual level, gender, motivation for change, and other individual variables. The Project MATCH research team predicted 16 differences in participant's responses to the treatment protocols, measured by days of abstinence and drinks per day during treatment and the year following treatment (Project MATCH Research Group, 1997).

Project MATCH had become the major treatment research focus of the NIAAA in reviewing the clinical management of alcoholism treatment (NIAAA, 1997a). The

NIAAA's rationale for pursuing research on patient-treatment matching stemmed from the hypothesis that, "more beneficial results can be obtained if treatment is prescribed on the basis of individual patient needs and characteristics" (NIAAA, 1997a, p. ix). The NIAAA asserted that main effect studies (i.e., studies that seek to evaluate effectiveness of one intervention compared to another) were limited, and that studies that looked at individual variables and specific treatment interventions would yield more informative and pertinent data to increase positive treatment outcomes (1997a). This perspective has been shared by various researchers in the addiction field (Miller et al., 1993; Miller & Tonigan, 1996; Prochaska, et al., 1992; 1998) and appears to have gained some support from the theoretical underpinnings advanced by the TTM (Prochaska, 1984).

The objective of Project MATCH (1997a) was to determine if varying subgroups of patients seeking treatment, who met the Diagnostic and Statistical Manual of Mental Disorders (third edition, revised; DSM-III-R, APA, 1987) criteria, responded differently to one of three diverse treatment modalities: (1) 12-Step Facilitation Therapy, (2) Motivational Enhancement Therapy, and (3) Cognitive-Behavioral Therapy. Each treatment modality was delivered over a 12-week period by trained therapist following a standardized protocol that was manual guided (Carroll et al., 1998; NIAAA, 1997a). Before the results of this study are provided, an explanation of each treatment modality will be discussed.

12-Step Facilitation Therapy

The 12-Step Facilitation Therapy (TSF), as the title suggests, was derived from the 12 Steps and 12 Traditions of Alcoholics Anonymous (AA) and was intended to be

consistent with active involvement in AA. Consequently, the TSF treatment program was designed around the fundamental principles of AA. In addition, the TSF treatment program included an adoption of the American Disease Model, which asserts that alcoholism is a chronic, progressive illness that, if not arrested, may lead to insanity and death (Alcoholics Anonymous, 1976; Hester & Miller, 1989). According to AA (1976), alcoholism has been characterized by a loss of control; "We alcoholics are men and women who have lost the ability to control our drinking. We know that no real alcoholic ever recovers control" (p. 30). Alcoholism has also been characterized by a specific and predictable pathogenesis that affects an individual at physical, emotional, social, psychological and spiritual levels. AA (1976) asserted that the largest obstacle to recovery is the phenomena of denial; that is, a resistance to accepting the reality of one's loss of control over drinking. In providing Twelve Step Facilitation therapy, other treatments (i.e., cognitive-behavioral therapy or rational-emotive therapy) were implemented to enhance and augment the TSF treatment program (NIAAA, 1997a).

The overall goal of the TSF treatment program was to assist participants' active involvement in AA, emphasize the disease concept model, and confront denial (Carroll et al., 1998). AA involvement was perceived to be the primary factor in sustaining sobriety (recovery), which represented the desired outcome of participation in the program (NIAAA, 1997a; Nowinski, Baker, & Carroll, 1992). The TSF treatment program was structured around two goals: acceptance and surrender. Acceptance has been seen as a vital component to recovery and was underscored by the first three steps of AA: (1) admitting one's problem and recognizing powerlessness, (2) realizing that sobriety is possible as others have been able to maintain sobriety, and (3) developing a belief in a

"power greater than self" as a source of support and as a means to regain normalcy (AA, 1976). AA further suggested that the term "surrender" combined the steps of acceptance with the spiritual concept that a power greater than self can restore functioning. The TSF treatment program objectives were separated into the cognitive, emotional, behavioral, social and spiritual realms of functioning, and included interactive assignments designed to enhance an understanding of the AA philosophy (NIAAA, 1997a; Nowinski et al, 1992).

Motivational Enhancement Therapy

Motivational Enhancement Therapy (MET) was derived from motivational psychology as a method of producing prompt internally motivated behavioral change. As an intervention technique, the MET treatment program has gained some popularity, as it required fewer therapist sessions than most alternative treatment approaches and has been supported by outcome studies that suggests a higher level of effectiveness in producing changes in treatment resistant problem drinkers, as compared to the more traditional and confrontive interventions. Over the twelve-week period, participants met with a clinician on four separate occasions (week one, four eight, and twelve) four an hour-long session of motivational interviewing. The MET treatment program involved influencing behavioral change through the application of individualized motivational strategies designed to help participants alter their drinking (Miller, Zweben, DiClemente, & Rychtarik, 1992; NIAAA, 1997b).

The efficacy of the MET treatment program has been rooted in the therapist's characteristic of "accurate empathy" as termed by Carl Rogers (1957) and this approach

was viewed as a predictor of therapeutic success with problem drinkers (Miller et al., 1992; NIAAA, 1997b). The framework for the MET treatment program was grounded in the TTM, which intended to identify how people changed their addictive behaviors (Prochaska & DiClemente, 1982; Prochaska et al., 1992; 1998). In addition, the MET treatment program was designed to underscore six elements shown to promote positive change in problem drinkers. These six elements have been summarized by the acronym FRAMES: (1) FEEDBACK of personal risk or impairment, (2) Emphasis on personal RESPONSIBILITY for change, (3) Clear ADVICE to change, (4) A MENU of alternative change options, (5) Therapist EMPATHY, and (6) Facilitation of client SELF-EFFICACY or optimism.

The MET treatment program was designed to support intrinsic motivation for change and helped promote individuals to initiate and maintain behavioral change efforts by placing emphasis on goal setting, increasing a commitment to change drinking behaviors, addressing ambivalence, and providing feedback on the negative consequences of drinking (Carroll et al., 1998). The basic tenets used in MET were derived from Miller and Rollnick's (1991) work on motivational interviewing, which identified five motivational principles: (1) express empathy, (2) develop discrepancy, (3) avoid argumentation, (4) roll with resistance, and (5) support self-efficacy. The MET treatment program differed significantly from other treatment modalities and was typically considered to be conceptually opposite of almost all confrontational-type interventions.

Cognitive-Behavioral Therapy

The Cognitive-Behavioral Therapy (CBT) model was selected for use in Project MATCH due to previous research that suggested the efficacy of a CBT treatment program with alcoholic patients (Kaden et al., 1992; NIAAA, 1997c). The CBT model implemented in Project MATCH contained a focus on training interpersonal and self-management skills. The primary goal was to master skills that would assist an individual in maintaining abstinence from alcohol (Kaden et al., 1992; NIAAA, 1997c). The program was broken down into seven core elements conducted over a 12-week period: (1) Introduction to Coping Skills Training, (2) Coping with Cravings and Urges to Drink, (3) Managing Thoughts About Alcohol, (4) Problem Solving, (5) Drink Refusal Skills, (6) Planning for Emergencies and Coping with a Lapse, and (7) Seemingly Irrelevant Decisions. The final session was reserved for termination (Kaden et al., 1992; NIAAA, 1997c).

The CBT treatment program required individuals to actively participate in treatment and assumed that individuals possessed a requisite amount of responsibility for mastering self-control skills that were seen as necessary in order to prevent relapse and maintain abstinence (Kaden et al., 1992; NIAAA, 1997c). These assumptions suggested that individuals were motivated for treatment, prior to their participation in the treatment program. In addition, the CBT treatment program asserted that self-efficacy modification could occur if individuals actively participated in treatment, engaged in role-play exercise, received corrective feedback, and practiced healthier behaviors.

CBT treatment program utilized in Project MATCH was characterized by placing emphasis on skills training, identifying and exploring past high-risk situations, using practice exercise in treatment, and distinguishing between limited episodes of alcohol use (lapse) and a full relapse (Carroll et al., 1998). Participants in the CBT treatment program were highly encouraged to abstain from any alcohol or other non-prescribed drug use for the duration of their treatment. Recognizing that many individuals quit treatment after a relapse or lapse, the NIAAA coordinators instructed the CBT clinicians to encourage participants to continue with treatment even if they experienced a lapse or relapse.

Summary

The Project MATCH Research Group (1997) determined that there was limited support for the hypothesis that client matching (i.e., client attributes would significantly interact with treatment modality) would affect drinking outcome. The primary matching hypotheses that were tested depicted few significant matching effects. The outcome study on abstinence by treatment modality (failure criterion was set at three days of heavy drinking) resulted in the TSF showing 53 % of participants had not reached criterion, flowed by MET with 49 % and CBT with 48 % (The Project MATCH Research Group, 1997). The TSF treatment faired slightly better than the CBT treatment with a comorbid psychiatric population, however, this difference decreased significantly as psychiatric severity increased (The Project MATCH Research Group, 1997). This suggested an advantage in assigning alcohol treatment seeking patients without severe psychopathology to a TSF type program as an appropriate "match." MET appeared superior to both TSF and CBT for those participants that were less motivated for change

(e.g., individuals in the precontemplation or contemplation stage of change, or individuals in the ambivalence stage of change readiness). In addition, MET performed with essentially equal efficacy as did the TSF and CBT programs and its use was suggested as a low-cost alternative to TSF or CBT (The Project MATCH Research Group, 1997).

Research that sought to identify interaction effects (as opposed to main effects) appeared to place significant demands on treatment integrity and discriminability. Carroll et al. (1998) asserted that, in general, the manual guided treatment protocols (i.e., TSF, MET, and CBT treatment manuals) were implemented successfully and major threats to internal validity were accounted for through program design and statistical analysis. Treatment integrity was supported as a majority of treatment variance was accounted for by the treatment condition, which suggested that implementation of treatment was uniform across this large national study. Carroll et al. (1998) also noted that the variability in the characteristics of the providers was significant. In addition, this analysis acknowledged that the use of standardized treatment manuals was most helpful in protecting the independent variable and controlling extraneous variability and threats to internal validity. Further analysis of Project MATCH data sets (via detailed casual chain analysis) was suggested as a next phase of data analysis to explore the effect of provider's characteristics. Del Boca and Brown (1996) likewise suggested follow-up studies to confirm the test-retest reliability of the numerous measures utilized in Project MATCH.

More important results from this study, however, were the acknowledgement of change stages, the importance of motivation, self-efficacy, and decisional balance, and

the utilization of the transtheoretical stages of change model. In addition, Project MATCH provided an enormous amount of data that included a significant number of participants for conjoint (Miller & Tonigan, 1996 [$N = 1,672$]) and independent follow-up studies (Carroll et al., 1998 [$N = 1726$]; and Conners, Carroll, DiClemente, Longabaugh, & Donavon, 1997 [$N = 952$]). Through Project MATCH, Miller and Tonigan (1996) advanced the TTM suggested by Prochaska (1984) and the transtheoretical stages of change model (Prochaska, 1984, Prochaska et al., 1992; 1998) through the development of a specific measure designed to examine stages of change readiness in the alcohol abusing population. Many researchers have proposed treatment matching for the alcohol abusing population (Isenhart, 1993; Marlatt & Gordon, 1985; Prochaska et al., 1992; 1998). As stated previously, Project MATCH and the subsequent studies derived from it found limited support for this proposition.

Stages of Change

Understanding how people change on their own, especially with addictive behaviors, has eluded behavioral scientists for years (Prochaska et al., 1992). A multitude of psychotherapy outcome studies have demonstrated that people successfully change with the help of professional treatment (Lambert, Shapiro, & Bergin, 1986; Smith, Glass, & Miller, 1980). Seligman (1995, 1996) reviewed the efficacy and effectiveness of psychotherapy and highlighted the following conclusions: (1) that patients benefited very substantially from psychotherapy; (2) that long-term treatment did considerably better than short-term treatment; (3) that psychotherapy alone did not differ in effectiveness from medication plus psychotherapy; (4) that no specific treatment modality did better

than any other for any disorder; (5) psychologists, psychiatrists, and social workers did not differ in their effectiveness as treaters; (6) psychologists, psychiatrists, and social workers did better than marriage counselors and long-term family doctoring; and (7) patients whose length of therapy or choice of therapist was limited by insurance or managed care did considerably worse. The results of these studies are consistent with the NIAAA's (1997a) findings with Project MATCH, which determined that no single treatment or approach had shown to be effective for individuals with an alcohol abuse or alcohol dependence problem.

There have been other studies on how people change with professional assistance (Cashdan, 1973; Eagan, 1975; and Horn & Waingrow, 1966). Although these studies have been helpful in understanding the benefits of psychotherapy, they have provided little insight on how people change on their own (Prochaska et al., 1992). Investigations into stages of behavioral change, especially addictive behaviors, have attempted to explain how people intentionally change addictive behaviors, with and without treatment. With addictive disorders, self-change has been referred to as "spontaneous recovery," even though it had been understood that some internal or external source significantly impacted the behavioral changes (Prochaska et al., 1992).

These studies on the nature of behavioral change concluded that individuals typically go through several stages before change occurs. What is not clear, are the internal factors that have separated individuals in one stage from individuals in another stage. It seems that individual cognitive factors such as self-efficacy beliefs and decision-making processes have provided some impetus for an individual's motivation for change.

Transtheoretical Therapy Model

Prochaska (1984) asserted that intentional change or therapy-assisted change is only one form of change that has motivated or moved individuals. Developmental change and environmental change have also been recognized as influential in assisting people to alter their behavior. However, Prochaska (1984) determined that developmental or environmental changes alone are not sufficient to maintain a particular change and that a cognitive and affective assimilation of the factors that prompted intentional change is a necessary requirement to maintain this change. If this assimilation has not occurred, individuals could possibly feel coerced into making change and revert back to previous behaviors once the environmental influence is removed or modified.

The TTM has viewed psychological problems under a hierarchical organization with five levels of content: (1) symptom/situational, (2) maladaptive cognitions, (3) current interpersonal conflicts, (4) family/systems conflict, and (5) intrapersonal conflict (Prochaska, 1984). From the transtheoretical perspective, Prochaska asserted that these five levels contain the content of what is to be changed. Therefore, the level of content of therapy depended upon the clinician's preferred theory of problems and the client's preferred theory of problems.

Prochaska (1984) conceptualized the Transtheoretical Therapy Model (TTM) as a higher order of theory from which therapy commences. The TTM calls for the creation or discovery of concepts and processes that have transcended current theories, especially at points of convergence. Prochaska (1984) studied a myriad of theoretical approaches, and

his research revealed a significant number of theoretical modalities that use "Consciousness Raising" (either through therapist feedback or education) as the predominant change process that is assumed to be the core of the approaches' theoretical base. "Compared with other processes of change, three times as many therapies included an increase in consciousness as a central factor in therapeutic change" (Prochaska, 1984, p. 368). The use of therapist feedback as an impetus for consciousness raising was a key element of the MET treatment program that was utilized in Project MATCH. Miller and colleagues (Brown & Miller, 1993; Miller, 1985; and Miller et al., 1993) researched the utility of MET with several alcohol abusing populations and concluded that significant improvement was found with this approach as opposed to the more conventional and confrontive approaches. Following the identification of consciousness raising as a fundamental component of self-change, Prochaska (1984) identified nine other processes of change that were considered to be fundamental components of the cognitive, motivational, social learning, and relapse prevention theories. These ten processes of change became the underlying constructs that formed the basis of the transtheoretical stages of change model.

Processes of Change

Prochaska (1984) proposed the following ten process of change that form the basic constructs of the transtheoretical stages of change model: (1) Consciousness Raising, (2) Self-liberation, (3) Dramatic Relief, (4) Counterconditioning, (5) Stimulus Control, (6) Helping Relationships, (7) Environmental Reevaluations, (8) Social Liberation, (9) Self-reevaluation, and (10) Reinforcement Management. Consciousness

Raising concerned an increase of information about self and the problems being experienced. Self-liberation was defined as making a decision and commitment to take action. Individuals gained a belief in their ability to make this change (increased self-efficacy). Dramatic Relief involved experiencing and expressing emotions pertaining to the presenting problem and possible solutions to constructively and effectively solve problems. Counterconditioning referred to substituting an alternative for the identified problem. Stimulus Control involved avoidance or countering of stimuli that tended to elicit the problem behavior. The Helping Relationship was defined as the process in which individuals became open and honest, trusting others with their problems. Environmental Reevaluation was identified as the process in which individuals assessed the impact of their problem behaviors on the environment. Social Liberation referred to the development of an increase in awareness of alternatives to problem behaviors contained within ones own environment. Self-reevaluation was identified as the process in which individuals assessed feelings and thoughts about themselves with regard to the problems they experienced. Finally, Reinforcement Management was defined as the process where individuals rewarded themselves or accepted rewards from others for making behavioral changes (Levy, 1997).

These ten processes of change have been integrated with changes of stage, which could serve as important and helpful therapeutic tools. Prochaska (1984) underscored the importance of determining an individual's stage of change and then applying the appropriate process of change to assist the individual in advancing through a particular stage. Equally important was an understanding of the level of content of therapy as perceived by both the client and the clinician.

Transtheoretical Stages of Change Model

Typically, stage theories have been structured as a classification system, that is, a set of rules that assigned an individual to one of a finite number of categories. There is a sequence that followed, which, according to Bandura (1995), did not necessitate a progression nor limit a reverse movement. In addition, stasis or movement was not seen as being mediated by a time-line constraint. Individuals could spend moments, or years at a particular stage (Bandura, 1995). Horn (1976) identified four stages of change that individuals progressed through in making health-related behavioral changes: (1) thinking about change, (2) deciding to make change, (3) short-term change, and (4) long-term change. These stages, as identified by Horn, have been seen as an early forerunner to the work of Prochaska (1984) and colleagues (Prochaska et al., 1992; 1998).

The transtheoretical stages of change model (Prochaska et al. 1992; 1998) proposed that individuals progress through five different stages in their quest for behavioral change: precontemplation, contemplation, preparation, action, and maintenance. Originally, the transtheoretical stages of change continuum was conceptualized as a linear progression of stages; however, Bandura's (1995) notion of stage theories, coupled with an increased amount of research with addictive behaviors and relapse determinants, influenced Prochaska (1984) and colleagues (Prochaska, et al, 1992; 1998) to incorporate a non-linear progression of change that resembled a spiral continuum model. Thus, individuals could progress through the stages of change, and if relapse occurred, resume the progression at the same or a different place in the stages of change continuum.

The precontemplation stage of change has been described as the stage in which behavioral change was not seen as probable in the foreseeable future. Individuals were unaware or under-aware of any addictive problem. Those individuals that "wished" to change, but had not "intended" to change, were considered precontemplators. The contemplation stage was identified as the stage in which individuals were aware of an addictive problem—possibly even ruminating about taking action; however, no commitment to change was made and no action was taken. Individuals in this stage were also seen as weighing the cost and benefits of change and identifying possible solutions to their problems (Prochaska et al., 1992). These two stages were comprised of individuals who could be seen as ambivalent, resistant, reluctant, or in denial.

The preparation stage of change was originally called the decision-making stage and then the determination stage, as it was added and deleted through various revisions of the transtheoretical stages of change model. It has been defined as the stage that combines a commitment to change with the associated behaviors that supported this commitment. Typically, individuals in this stage were preparing to take action within thirty days and had been unsuccessful in taking action within the past year. The action stage is the stage of change in which individuals have changed their attitudes and behaviors to resolve their problems. This stage required serious commitment; consequently, behavioral change was usually seen as overt and purposeful. Individuals were considered to be in this stage once they had initiated behavioral change and maintained these behavioral changes for a period of six months. The maintenance stage of change has been characterized as a continuation of efforts initiated in the preparation

and action stages, whereas individuals worked to prevent lapses and relapse (Prochaska, 1984; Prochaska et al., 1992; 1998).

The more common exits from the transtheoretical stage of change model included: (1) making a choice not to change an addictive behavior, (2) developing a desire to cease addictive behaviors, and (3) developing a fear of further relapse and failure (Prochaska, 1984). Although the transtheoretical stages of change model was originally conceptualized to help clinicians and researchers understand how individuals engaged in self change, Annis et al., (1996) asserted that the transtheoretical stages of change model applies equally well for those individuals engaged in self-change as well as those individuals involved in therapist-assisted change.

Stages of Change Readiness and Treatment Eagerness Scale

Following the work of Prochaska (1984; 1994) and colleagues (Prochaska & DiClemente, 1982, Prochaska et al., 1992, 1998), Miller and Tonigan (1996) developed the Stage of Change Readiness and Treatment Eagerness Scale (SOCRATES). The SOCRATES was modeled, in part, after the University of Rhode Island Change Assessment (URICA) scale developed by Prochaska and DiClemente (1992) from the transtheoretical stages of change model. Although the URICA was not designed to be substance specific, the SOCRATES was designed to specifically measure problem drinking (Miller & Tonigan, 1996). The URICA provided scales that corresponded to an earlier version of the transtheoretical stages of change model, which identified only four stages of change: precontemplation, contemplation, action, and maintenance. It was noted, that the absence of the middle stage (preparation) resulted from the continual

evolutional process of modifying the transtheoretical stages of change during scale development (Prochaska & DiClemente, 1982; Prochaska, 1984; Prochaska et al., 1992; 1998).

Likewise, the SOCRATES measure went through several revisions before a final version was made available for use. Unlike the URICA or the stages of change identified by Prochaska (1984) and colleagues (Prochaska et al., 1992; 1998), a factor analysis of the SOCRATES measure provided only three subscales: Ambivalence, Recognition, and Taking Steps (Miller & Tonigan, 1996). Miller and Tonigan (1996) asserted that these three SOCRATES subscales, "seem better understood as continuously distributed motivational processes that may underlie stages of change" (p. 85). These three subscales appeared to account for movement through the stages of change that were typically seen in addiction treatment and appeared theoretically similar to the five stages of change advanced by Prochaska (1984) and colleagues (Prochaska et al., 1992; 1998).

Isenhart (1994) utilized the 40-item SOCRATES in a study that explored motivational subtypes in an inpatient sample of substance abusers at a Veterans Administration Medical Center. A factor analysis of the 40-item SOCRATES scores revealed three subscales: Determination, Action, and Contemplation. A cluster analysis of the three factors revealed three subgroups: Uninvolved, Ambivalent, and Involved. The Ambivalence Cluster consisted of participants that scored high on Contemplation and Determination, but very low on Action. The Uninvolved Cluster consisted of participants that scored low on Determination, moderately low on Action, and moderately high on Contemplation. The Involved Cluster consisted of participants that scored low on Contemplation and high on both Action and Determination. Isenhart (1994) suggested

that motivational subtypes are differentiated on the stages of change readiness (as measured by the 40-item and 20-item SOCRATES) and additional research was required to further develop these speculations about subtypes of motivation and to better understand the differences among these subgroups and subtypes. In addition to the Isenhart (1994) study, Ferrell (1999) conducted a factor analysis of the 40-item SOCRATES ($N = 223$) and extracted a three-factor solution: Awareness, Action, and Ambivalence. These three factors accounted for approximately forty-one percent of the total variance. The Ferrell (1999) study showed Awareness accounting for the largest variance (26 %), followed by Action (8 %) and Ambivalence (7 %).

Miller and Tonigan (1996), in cooperation with project MATCH (NIAAA, 1997a) and other similar studies (Carroll et al., 1998) modified the SOCRATES measure through continual analysis of its factors. From this analysis, a 40-item and a 20-item form of the SOCRATES was developed. Further analysis revealed problems with one of the items, and a 39-item and 19-item form were eventually presented as final instruments. Miller and Tonigan (1996) asserted that the 19-item version was as valid and reliable a measure as the 39-item version and should be utilized in further research.

Summary

Project MATCH was intended to explore the benefits (if any) of correct matching between individuals and treatment, and the transtheoretical stages of change model was developed to underscore the importance of moving beyond a single theoretical framework and finding convergent lines that transcend current approaches to treatment (Prochaska, 1984). The transtheoretical stages of change model appeared to work equally

well for self-change, as it does for assisted change. Many current theories have contributed to the development of the transtheoretical stages of change model in the form of the ten processes of change. Interaction of stages of change and the processes of change influenced individual movement (either forward or backward), depending upon what process of change is applied (or utilized) during a particular stage of change. The level of content from which therapy would proceed had become an additional factor for consideration under the transtheoretical therapy model.

It seems as though there has been an increase in the addiction field concerning the clinical importance of matching treatment intervention to the client's readiness to change (Isenhart, 1994; Miller & Tonigan, 1996; NIAAA, 1997a, Prochaska et al., 1992). The concept of readiness to change seemed to be synonymous with levels of motivation and the SOCRATES appeared to measure both stage of change and readiness to change or motivation level. What has not been measured; however, is the difference in motivation between these stages. From the available literature, it seems logical that an individual's transition from ambivalence to recognition (as measured by the SOCRATES; Miller & Tonigan, 1996) or the transitions from contemplation to preparation to action (as measured by the transtheoretical stages of change model; Prochaska et al., 1992; 1998) could not occur without some change in the individual's level of motivation. Therefore, it seems to follow that an investigation of an individual's motivational factors (specifically the cognitive processes that are hypothesized to influence motivation) and the stages of change (specifically the stages of change readiness as identified by the SOCRATES) is warranted.

Motivation

Miller and Rollnick (1991) suggested that motivation could be seen as "a state of readiness or eagerness to change, which may fluctuate from one time or situation to another" (p.14). Isenhart (1994) suggested that motivation could be viewed as a "dynamic series of stages through which a person progresses and regresses" (p. 463). Annis et al., (1996) asserted that motivation for addiction treatment varies along a continuum and that most alcoholics and addicts who seek treatment were ambivalent about change. All of these definitions seem applicable in viewing motivation in the context of the TTM and the transtheoretical stages of change model. Miller (1985) suggested that treatment failure had been erroneously attributed to a lack of client motivation, and Clancy (1961; 1964) suggested that denial is attributed as the most prominent defense mechanism. In addition, another common attribute applied to treatment-resistant alcoholics is a lack of motivation for treatment, or motivation for change (Dean, 1958; Miller, 1985; Sterne & Pitman, 1965). In reviewing motivation for change, the relevant literature was filled with outcome studies that reflected the efficacy of interventions applied in various treatments.

Outcome Studies

Results from numerous alcohol treatment outcome studies have shown that interventions in the forms of preventive education and treatment have not provided desirable results (Clifford, 1983). Negative outcomes have been described to include a lack of compliance with treatment recommendations (Miller et al., 1993), failure to progress in treatment (Isenhart, 1994), or premature termination (unilateral withdrawal) from treatment (Smith, Subich & Kalodner, 1995). The cumulative results of negative

outcome studies have suggested that these clients experience less long-term progress, more psychological stress, and eventually seek therapy elsewhere (Smith, Subich & Kalodner, 1995).

Numerous outcome and recidivism studies have shown a significant dropout rate for individuals placed into treatment programs. Allan (1987) had found a 64% dropout rate after 4 weeks and a 93% dropout rate after six months in a community sample of participants from an outpatient alcohol treatment program ($N = 112$). Another study of compliance with participants ($N = 178$) in an outpatient alcoholism treatment program resulted in a 52% dropout rate before nine visits (Brizer, Maslamsky, & Galanter, M., 1990). A combined inpatient and outpatient study of participants ($N = 109$) receiving alcoholism treatment resulted in 54% of the participants not following through on a referral for treatment (Castaneda, Lifshutz, Galanter, Medalia, & Franco, 1992). Reese (1985) conducted a large study with over three thousand participants across five different alcohol treatment settings and the results indicated an average of 52.7% dropout rate across settings.

Treatment outcome studies that were conducted with a specific medication regimen yielded similar results. Kranzler, Burleson, Korner, and Del Boca (1994) had found an 18% refusal rate and 31 % dropout rate in an outpatient alcohol treatment program augmented with Buspirone (BuSpar®, a non-addictive mild tranquilizer). Another outpatient alcohol treatment program augmented with Nalmefene Hydrocloride (Revex, a narcotic antagonist) resulted in a 76% dropout rate within three months of treatment (Mason, Ritvo, Morgan, & Salvato, 1994). O'Malley, Jaffe, Chang, Schottenfeld, Meyer, and Rounsaville (1992) conducted an alcohol treatment augmentation study utilizing

Naltrexone (ReVia, a pure opioid antagonist) and found that 26% refused to initiate medication therapy and 35% dropped out. The available literature suggested that client dropout rates vary by treatment setting but often range from 20 % to 60 % (Longo, Lent, & Brown, 1992).

Although outcome studies have not typically incorporated the myriad facets of treatment issues and individual differences that produce a given result, it is clear from a review of available literature that most interventions and treatment programs have not attained desired results. Consequently, a review of impediments to motivation and enhancements to motivation is necessary to understand some of these outcome results.

In discussing the impediments and enhancements to motivation, other variable that impact motivation have not been addressed. Emphasis has been placed on the individual's state of awareness of a problem and level of motivation for change, to direct attention to the issue of motivation as it pertains to the stages of change. In addition, the cognitive factors that are hypothesized to affect an individual's level of awareness of a problem and subsequent level of motivation for change were specifically identified.

Impediments to Motivation

Dean (1958) recognized that individuals seek therapy for a variety of reasons, and some individuals find themselves involved in therapy despite a real or perceived need, thus lacking the requisite motivation for change. He asserted that regular (typical) psychotherapy begins with the meeting of two requirements: admission of a problem and a desire to change. Dean (1958) outlined some stages of change in a therapeutic alliance: (1) Active Hostility, (2) Negativism, (3) Passive Resistance, (4) Neutrality, and (5)

Admission or Desire. Rogers (1958) discussed these change states as a process and described the first stage of active hostility as, "an unwillingness to communicate self...no problems are recognized. There is no desire to change. The individual at this stage represents stasis, fixity, the opposite of flow or change." (pp. 143-144). Many contemporary treatments approaches for alcoholism have viewed these issues as an individual's denial of a problem.

Solution-focused therapists have revisited the nature of the client-therapist relationship in explaining the phenomenon of denial, resistance, and reluctance. In identifying resistant and reluctant clients or clients in denial, Berg and Miller (1992) asserted that the therapist most probably have "misclassified" the type of client-therapist relationship. Tohn and Oshlag (1996) identified six components in working with an alcohol abusing population: (1) honoring the client's worldview, (2) establishing well-formed treatment goals with the client, (3) utilizing the referral source to further establish well-formed treatment goals, (4) utilizing the referral source to sustain treatment progress, (5) identifying and utilizing the client-therapist goal relationship, and (6) helping the mandated clients move toward their goal. These components were seen as essential in establishing rapport and assisting client's in making behavioral changes.

Miller and Brown's (1997) most recent findings indicated that characterologic denial is not inherent in substance use disorders. Psychological interventions could induce motivational shifts and long-term change in individuals with substance use problems. Motivationally focused treatment appeared to be associated with rapid progress in treatment, which tended to lower the cost of treatment.

Enhancements to Motivation

The issue of client motivation has become an important variable of outcome studies as it is seen to have impeded both the initial presentation for treatment and the progression through treatment. The understanding of motivation in this context has lead Prochaska, DiClemente, and Norcross (1998) to balance movement through the stages of change with the processes of change. Hester and Miller (1989) sorted through hundreds of interventions designed to increase client motivation for chemical dependency treatment. The resulting groups of interventions were cataloged into eight types: (a) advice, (b) barriers, (c) choice, (d) decreasing attractiveness, (e) external contingencies, (f) feedback, (g) goal setting, and (h) a helping attitude.

Advice, quite simply, was seen as expressing a clear and direct need for change and how that change might be accomplished. The removal of barriers or obstacles to change may also have increased the likelihood of active participation. Choice brought an element of decision making to the client; that is, the client chose from a list of options and negotiated the most acceptable and promising alternative with the therapist. Decreasing the attractiveness of drinking or using drugs was a reasonable motivational strategy that allowed the client to view the personal cost of continued usage. The intervention of external contingencies attempted to gain client participation through an ultimatum, either by the spouse, the family, the employer, or the court system. Feedback, in the form of providing personalized information, seemed to have a strong motivational impact (e.g., informing the client of his or her elevated liver enzyme resulting from alcohol consumption). Goal setting was similar to choice; however, it capitalized on the choices that were made by setting obtainable and measurable goals for treatment and

change. Finally, the helping attitude illustrated the importance of the clinician assuming an empathic approach (Hester & Miller, 1989).

Motivational Interviewing

Miller (1983; Miller, Sovereign, & Krege, 1988) asserted that the motivational interview approach was designed to increase an individual's recognition of a problem, provide assistance in his or her entrance into treatment and continuation of treatment, and promote compliance with the treatment plan. The motivational interview design was intended to help an individual move from the precontemplation stage of change through the ambivalence of the contemplation stage of change, and through the preparation, action, and eventually the maintenance stages of change.

Miller and Rollnick (1991) identified five principles of motivational interviewing, (1) expression of empathy through counselor's reflective listening, (2) development of differences between client's goals and the current problem behavior, (3) avoid arguments and direct confrontation, (4) work with resistance rather than opposing it directly, and (5) support the client's self-efficacy for changing the current problem behavior. As mentioned previously, the motivational interviewing approach was conceptually opposite to the more traditional confrontive approaches.

Brown and Miller (1993) conducted a motivational interviewing study of participants in a residential alcoholism treatment program. Participants were randomly assigned to either the treatment group (receiving motivational interviewing protocol) or a control group (not receiving the motivational interviewing protocol). All participants were measured for standard ethanol content (SEC) and blood alcohol level (BAC) at

baseline (initiation of treatment) and at a three-month follow-up. Their results suggested that brief interventions (motivational interviewing and assessment feedback) increased the participant's involvement in treatment when compared to those participants that did not receive the motivational interviewing protocol. In addition, Brown and Miller (1993) reported a significant improvement in outcome of the treatment group (36 % unfavorable outcome) versus the control group (71 % unfavorable outcome). Brown and Miller (1993) asserted that the motivational interview technique achieved its design; that is, to help people build a commitment and reach a decision to change.

Summary

Miller and Rollnick (1991) suggested that the treatment environment and the therapeutic relationship impacted an individual's level of motivation. Miller et al. (1993) suggested that almost every study that evaluated therapist characteristics had results that depicted more favorable outcomes when the therapist approximated accurate empathy. That is, therapist empathy became the most salient predictor of client outcome. Isenhart (1994) concluded that both the individual and the therapist should share an individual's level of motivation.

Cognitive Factors That May Be Related To Motivation

Decisional Balance

Decisional Balance has been defined as the decision-making processes in which an individual weighs the pros and cons of changing specific behaviors related to a specific behavioral problem (Jannis & Mann, 1977). Decision-making processes have

been related to numerous health-related behaviors (Velicer et al., 1985) and in cross-sectional studies that measured client's perceived costs and benefits of change (Cunningham et al., 1997). Jannis and Mann (1968; 1977) have provided a wealth of information on decision-making and the decision-making process. The Decisional Balance Sheet of Incentives proposed by Janis (1959; and Jannis & Mann 1968; 1977) was designed as a comparative model (gain) as opposed to an absolute model (loss), which represented the cognitive and motivational aspects of decision-making. Velicer et al. (1997) asserted that this comparative model had been heavily supported by theoretical constructs than did the absolute model.

The initial development of the decisional balance concept indicated its usefulness in shielding an individual against the negative consequence of making a decision (Velicer et al., 1985). Follow up studies by Hoyt and Janis (1975) utilized the decisional balance sheet as an intervention technique to help promote the participants adherence to a decision. Although the decisional balance construct appeared to support intervention techniques, its influence as a cognitive factor that impacts an individual's motivation through stages of change (especially in an alcohol abusing population) has yet to be fully explored.

From their decisional balance research, Janis and Mann (1968) identified four decision-making consequences that occur as a result of making a decision: (a) utilitarian gains and losses for self, (b) utilitarian gains and losses for others, (c) self-approval or self-disapproval, and (d) approval or disapproval from significant others. The Decisional Balance Sheet of Incentives was developed around these four factors. Other studies (Cunningham et al., 1997) had utilized these four decisional balance factors to condense

the gains and approvals into "pros" of change, and the losses and disapprovals into "cons" of change.

Self-efficacy

Rottschaefer (1991) asserted that two cognitive revolutions have occurred in the last century: the first cognitive revolution extolled the importance of perception, memory, thought, imagery, and problem-solving, while the second (and more recent) cognitive revolution involved the aspects of learning, motivation, and personality. Rottschaefer (1991) further suggested that advancing the social learning theory, as presented by Bandura (1989), would provide naturalist a theoretical base to address important problems in philosophical psychology. Evolving from the cognitive and social learning theories, self-efficacy is referred to as the belief that one can successfully perform a behavior that is necessary to produce a desired outcome (Bandura, 1977). Bandura's (1977; 1986) social-cognitive theory appeared to address several important concepts, such as self-efficacy beliefs, outcome expectations, and behavioral goals. These concepts seemed to be related to an individual's decisions to remain in therapy. In addition, Bandura's (1986) social-cognitive theory assumed that personal agency is utilized through an amalgamation of many cognitive factors, including self-efficacy beliefs and decision-making processes.

Self-efficacy theory hypothesized that self-efficacy is the most important predictor of future behavior (Bandura, 1986) and that outcome expectancies had little additional predictive value (Bandura, 1986; Cunningham et al., 1997; and Solomon & Annis, 1989; 1990). Various self-efficacy measures had been utilized to measure specific

efficacy values: strength, magnitude, and generality (Lee & Bobko, 1994). Strength has been defined as the measure of confidence that he or she can perform at a particular level. Magnitude, in this context, has been defined as the level at which an individual believes he or she can perform. Generality referred to the extent in which self-efficacy can be extended to other situations or settings (Maurer & Pierce, 1998).

Strength, the self-efficacy value that measured one's confidence, has been used in research primarily by those in the addiction field (cigarette smoking and alcohol consumption), to assess coping self-efficacy. Strength of clients' intentions to remain in therapy was often seen as a sign of their "motivation" for treatment. Situation specific coping self-efficacy scales have been developed for smoking, the Smoking Abstinence Self-Efficacy Scale (DiClemente, Prochaska, & Gibertini, 1985) and for drinking, the Alcohol Abstinence Self-efficacy Scale (DiClemente et al., 1994). The assumptions underlying the development of self-efficacy coping scales were the belief that individual self-efficacy for coping is situation specific (cf. Bandura, 1977). In addition, precursors to relapse identified in the literature for alcoholics and addicts (Marlatt & Gordon, 1985) were relevant indicators for determining situational dimensions of coping self-efficacy.

Wells-Parker, Williams, Dill, and Kenne (1998) investigated self-efficacy and stages of change (precontemplation, contemplation, and action) among participants (N = 177) in a court-ordered intervention program as a result of an offense for driving under the influence (DUI). Self-efficacy was measured by a Drinking and Driving Efficacy (DDE) questionnaire and stages of change was measured by the Stages of Change for Drinking scales (SCD). Of the 177 participants, 103 (58 %) were classified in the action stage, 28 (16 %) were classified in the contemplation stage, and 22 (13 %) were classified

in the precontemplation stage. The correlations between the DDE and SCD (DDE and precontemplation, $r = .06$; DDE and contemplation, $r = -.28$; and DDE and action, $r = .12$) were interpreted as a reflection of a hypothesized positive relation of self-efficacy with the action stage of change (Wells-Parker et al., 1998). The results discussed by Wells-Parker et al. (1998) did not seem to provide significant correlations, however, the factor pattern of self-efficacy and motivation for change (i.e., it was suggested that they co-defined common factors) were suggested as critical items in avoiding the drinking and driving sequence.

Haaga and Stewart (1992) examined the relationship of self-efficacy for recovery (SER) and smoking abstinence among a group of participants in a smoking cessation clinic ($N = 95$). SE was measured by the articulated thoughts during simulated situations (ATSS) paradigm. The ATSS were assessed in six simulated high-risk situations at one week, three months, and one year intervals. Continuous abstinence was measured via survival analysis, which resulted in a mean SER (after one year) of 61.9 (SD = 20.6), on a 0-100 scale. Survival curves and pairwise comparisons (absence versus presence) produced similar results, which indicated that higher self-efficacy was related to abstinence and lower self-efficacy was related to relapse. Haaga and Stewart (1992) recognized several limitations of their study including the validity of the ATSS and interrater reliability. Interestingly enough, Haaga and Stewart concluded that self-efficacy can be too high and participants with "optimistic cognitive biases led to inappropriate complacency about their adequacy of skills" (p. 26).

DiClemente (1986) asserted that self-efficacy evaluations have demonstrated significant value in predicting outcomes (e.g., either abstinence or relapse) for an alcohol

abusing population. Perceived self-efficacy provided some insight into the progression through change stages and appeared to mediate motivation to make behavioral change. Clifford (1983) argued that an individual's self-efficacy, especially those individuals with an alcohol abuse problem, was volatile and subject to treatment influence. That is, many current modals of alcoholism treatment could be "antitherapeutic" for some individuals, as they may reduce confidence in their ability to abstain (Clifford, 1983, p. 111). DiClemente (1986) concluded that there is a gap in the literature concerning self-efficacy studies that had involved an examination of an alcohol abusing population.

Research conducted by DiClemente and colleagues (DiClemente, Prochaska, Fairhurst, Velicer, Velasquez, & Rossi, 1991) examined the relationship between change processes, decisional balance and self-efficacy with smokers. Although the relationship between self-efficacy and stages of change, and the relationship between self-efficacy and decisional balance were not reported, the research suggested a high correlation between decisional balance and stages of change. That is, as one moves through the stages of change (from preparation to contemplation to action, etc.) the benefits of change appear to outweigh the cons of change. This study was replicated (Dijkstra, De Vries, & Bakker, 1996) in a Dutch population of smokers in which situational, habitual, and emotional self-efficacy was assessed. The results from the Dijkstra et al. (1996) study indicated that participants in the maintenance stage found it easier to abstain from smoking than those in the action stage ($t = 4.22, p < .001$) and participants in the action stage found it easier to abstain from smoking than those in the preparation stage ($t = 3.42$, $p < .001$). The correlation between decisional balance and stage changes becomes significant when viewed in light of the transtheoretical model that assumes decision-

making in its theoretical construction (Dijkstra, et al., 1996). To date, these are the only two studies that have incorporated self-efficacy efforts as an additional variable with decision-making processes and stages of change.

Implications for Treatment

Various studies, including Project MATCH (NIAAA, 1997a; 1997b; 1997c) have identified the need to fit treatment goals and objectives with the individual's stage of change—not to fit the individual into the treatment. Isenhart (1994) asserts that having a client who is in the precontemplation stage of change participate in treatment that demands total abstinence is most probably inappropriate. The TTM developed by Prochaska and DiClemente (1982) proposed a higher order of therapy theory that incorporates stages and processes of change. The Transtheoretical Stages of Change Model (Prochaska et al., 1992; 1998) identified an interaction of change processes with change stages to produce more desirable outcome. Hester and Miller (1989) identified the efficacy of motivational interviewing by assimilating relapse prevention determinants extolled by Marlatt and Gordon (1985; Marlatt, 1996). Further research of Miller and Rollnick (1991; Miller et al., 1993) sponsored the development of Motivational Enhancement Therapy, which was also based on the Transtheoretical Stages of Change Model. In response to the general application and utility of the Transtheoretical Stages of Change Model for a variety of health-related issues, Miller and Tonigan (1996) developed the Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES) that was specifically designed to examine stage changes in an alcohol abusing population.

Summary

As mentioned previously, decision-making processes and self-efficacy efforts were identified as two cognitive factors that are hypothesized to influence an individual's motivation for change. Janis and Mann (1968; 1977) identified the importance of decisional balance as an influential factor in a variety of cognitive process, including motivation. Prochaska et al. (1994) also recognized decisional balance as a motivational factor in the stages of change for 12 health-related behavioral problems, and recognized the need for more research in an alcohol abusing population. Likewise, examination of an individual's self-efficacy beliefs and self-efficacy efforts have been studied with a number of health-related issues (e.g., smoking and weight loss). Bandura (1986) asserted that self-efficacy beliefs are the most salient predictor of future behavior, and Clifford (1993) suggests that the therapist-client relationship has an effects on an individual's self-efficacy beliefs and self-efficacy efforts. Prochaska (1986) argues that more research is needed that examines self-efficacy in an alcohol abusing population.

This study is primarily concerned with the relationship between cognitive factors (self-efficacy efforts and decision-making processes) that are hypothesized to influence motivation and the stages of change readiness; however, due to the theoretical base used to examine this relationship, there is an element of interest in how this relationship applies to treatment. At the beginning of Chapter 2, emphasis was placed on the historical and sociopolitical antecedents of alcohol use, abuse, and associated behaviors. Researchers and practitioners from all corners of the addiction arena recognize that alcoholism (e.g., alcohol abuse or alcohol dependence) is a significant social and public health problem. There are however, discernable differences between these researchers

and practitioners philosophical frame of reference for treatment. Although the alcoholism treatment field seems to be changing focus from the American Disease Model to the Public Health Model (Hester & Miller, 1989; Marlatt, 1996; Miller 1993) and the field has become heavily influenced by the TTM (Prochaska & DiClemente, 1982) and the transtheoretical stages of change model (Prochaska et al, 1992; 1998), many institutions and agencies designed to treat alcoholism (especially those sponsored in whole or part by local, state, and federal government) continue to utilize confrontive and coercive methods to influence behavioral change.

Motivation Enhancement Therapy recognizes both the decision-making processes and self-efficacy efforts as significant cognitive factors that influence motivation and behavioral change. It is grounded in the TTM and the Transtheoretical stages of Change Model, and has shown superior efficacy during the Project MATCH study. In contrast, the Moral Reconnitation Therapy technique that is predominantly utilized in mandated drug court programs across the country is highly confrontive and coercive.

A review of the U. S. Department of Justice's (USDJ; 1997) drug court literature reveals some interesting information. The drug court's standards committee is completely composed of individuals from the criminal justice system; clinicians, at any educational or professional level, are not included as members of this committee. None of the literature, including local pamphlets and brochures that advertise these services to the community, includes any information on the provider's level of experience, education, or professional affiliation. The USDJ literature discusses ten key components of the drug court program that are oriented to treatment intervention; however, there is no

identification of the minimum educational or experiential requirements of the providers to provide these services.

Beyond the ethical implications of participating as a clinician or therapist in such a program, are the efficacy and effectiveness issues. In light of the more recent advances in the addiction field (i.e., movement from a disease model towards a public health model; the transtheoretical stages of change model paradigm shift; influence of cognitive factors [self-efficacy and decision-making] on motivation; and the influence of motivation on progression through stages of change), drug court programs that do not incorporate these advances seem archaic in philosophy and detrimental to the welfare of the client. As government agencies continue to dictate treatment policy through mandated treatment programs, recidivism, relapse, and the offspring of criminal behavior will continue to persist.

In closing, it seems appropriate to relay the advice of Miller and Brown (1997), who call for a change in the current zeitgeist; that is, a removal of historical barriers that have been placed between psychologist and the treatment of substance use disorders. Psychologists should also collaborate with others and disseminate clinical findings and research to the practitioner in the field. Identifying the appropriate matches between client cognitive factors, stage of change, and treatment modality type, may be helpful in breaking down some of these barriers.

In this study, an exploration of stages of change readiness in clients across different treatment modalities will be explored to see if certain levels of motivation are associated with specific treatments. This may guide future work in the research and

practice of treatment matching based on clients' level of motivation, among other important individual characteristics.

CHAPTER THREE

METHODOLOGY

Participants

Participants for this study were recruited from three different alcohol treatment programs: 1) a 21 to 28 day inpatient treatment program, 2) an intensive outpatient treatment program, and 3) a mandatory drug court outpatient treatment program. The different treatment programs provided a diverse mixture of individuals (e.g., different levels of motivation for change and varied types of alcohol problems) compared to studying one treatment group alone. This mixture of participants represented a more comprehensive sample of the problem drinking population. Approximately one third of the participants sought intensive outpatient treatment for substance abuse disorders ($N = 78$). Another one-third of the participants for this study sought inpatient treatment at a variable length of stay residential treatment facility ($N = 81$). The final one-third of the participants was mandated (court-ordered) to attend a drug court outpatient treatment program ($N = 85$). All of the participants were at least eighteen years of age or older.

There were 183 male and 61 female participants, who ranged in age from 18 to 62 years. Approximately 40 % of the participants were Caucasian, 27 % were Hispanic, and 24 % were African American. See Table 1 for more specifics on the demographics.

Table 1

Demographic Information By Treatment Group

Demographic Variables	Inpatient		Outpatient		Drug Court		Total	
	$N = 78$	%	$N = 81$	%	$N = 85$	%	$N = 244$	%
Age								
18 – 29	35	45	34	42	28	33	97	40
30 – 41	27	35	33	41	42	49	102	42
42 – 53	15	19	10	12	15	14	40	16
54 - 62	1	> .1	4	5	0	0	5	2
Education								
Some High School	4	5	27	33	29	34	60	25
H. S. Diploma	24	31	21	26	20	24	65	27
Some College	21	27	18	22	19	23	58	24
Associates	20	25	3	4	7	8	30	12
Bachelors	4	5	7	9	2	2	13	5
Graduate	2	3	1	1	0	0	3	1
Professional	1	1	1	1	1	1	3	1
Technical/Trade	2	3	3	4	7	8	12	5
Income								
Less than 10 K	10	13	17	21	16	19	43	18
10 K – 20 K	19	24	17	21	23	27	59	24
20 K – 30 K	16	21	21	26	16	19	53	22
30 K – 40 K	16	21	15	19	17	20	48	20
40 K – 50 K	9	11	5	6	7	8	21	8
50 K – 60 K	3	4	6	7	2	2	11	4
60 K – 70 K	1	1	0	0	1	1	2	1
Greater than 70 K	4	5	0	0	3	4	7	3

Table 1 (Continued)

Demographic Information By Treatment Group

Demographic Variables	Inpatient		Outpatient		Drug Court		Total	
	$N = 78$	%	$N = 81$	%	$N = 85$	%	$N = 244$	%
Gender								
Males	48	61	55	68	80	94	183	75
Females	30	39	26	32	5	6	61	25
Marital Status								
Single	23	30	38	46	36	42	97	40
Married/Partnered	47	60	24	30	26	31	97	40
Separated/Divorced	8	10	15	19	21	25	44	18
Widowed	0	0	4	5	2	2	6	2
Race/Ethnicity								
African American	11	14	24	30	23	27	58	24
American Indian	7	9	3	4	3	4	13	5
Asian American	4	5	1	1	1	1	6	3
Caucasian	42	54	29	35	27	32	98	40
Hispanic	14	18	23	29	29	34	66	27
Other	0	0	1	1	2	2	3	1
Work Status								
Employed	52	67	48	59	53	62	153	63
Unemployed	26	33	33	41	32	38	91	37

Measures

The following measures were completed by the participants in this study: a demographic form, the Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES), The Alcohol and Drug Consequence Questionnaire (ADCQ), the Alcohol Abstinence Self-Efficacy Scale (AASE), and the Alcoholics Anonymous Involvement Scale (AAI).

Demographic Form

The demographic form included information regarding age, gender, marital status, race/ethnic identity, highest level of education obtained, employment status, and annual income. See Appendix B for a copy of the demographic form.

Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES)

Stage of change readiness was measured by the 19-item Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES; Miller & Tonigan, 1996). The 19 items are rated on a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). There are three factor scores for this instrument: Ambivalence (which accounted for all contemplation items and appears to represent a low level of motivation for change), Recognition (which accounted for a vast majority of the preparation stage of change items and appears to represent a medium or moderate level of motivation for change), and Taking Steps (which accounted for many action and maintenance stages of change items and appears to represent a high level of motivation for change; Miller & Tonigan, 1996). The Ambivalence factor includes items 2, 6, 11, and 16; the Recognition

factor includes items 1, 3, 7, 10, 12, 15, and 17; and the Taking Steps factor includes items 4, 5, 8, 9, 13, 14, 18, and 19.

The SOCRATES measure is intended to assess where the respondent might be on the stages of change continuum. An example of an item from the Taking Steps factor is, "I am working hard to change my drinking." An example of an item from the Recognition factor is "I have serious problems with drinking," An example of an item from the Ambivalence factor is, "There are times when I wonder if I drink too much."

The original design of the SOCRATES corresponded with the original four-stage, stages of change model developed by Prochaska and DiClemente (1982). The design called for four 8-item scales to correspond with the four stages of change: precontemplation, contemplation, determination, and action (Miller & Tonigan, 1996). A more current model (SOCRATES 5.0) was developed in 1991 and utilized 40-items rated on a Likert-type scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The 40 items corresponded with the revised five-stage, stages of change model (Prochaska et al., 1992; 1998), which comprised five 8-item scales that correspond to the five stages of change: precontemplation, contemplation, preparation, action, and maintenance. From the 40-item SOCRATES, a 20-item instrument was developed, that utilized the highest factor loadings for each of the five stages. The original subscale items for this 20-item SOCRATES were: Precontemplation (1, 6, 9,12), Contemplation (2, 7, 10, 13), Preparation/Determination (3, 15, 16, 19), Action (4, 8, 17, 18), and Maintenance (5, 11, 14, 20).

A rigorous multi-site research of the psychometric properties the SOCRATES 5.0 (both the 40-item and the 20-item instrument) provided consistent and reliable data;

however, some instrument modification was necessary to insure internal validity. Item 6, "The only reason I'm here is that somebody made me come," from the precontemplation scale yielded an exceptionally low factor score and was discarded from both the 40-item and 20-item SOCRATES versions (Miller & Tonigan, 1996). This yielded a 39-item and 19-item version of the SOCRATES and both forms provided a three-factor solution (using both orthogonal and non-orthogonal rotations): Ambivalence, Recognition, and Taking Steps. Although the three factors did not coincide with the five stages of change proposed by Prochaska et al., they are suggested to represent continuously distributed motivational processes that underlie stages of change (Miller & Tonigan, 1996).

Previous studies on the SOCRATES demonstrated its adequate reliability and validity measures. In the Project MATCH study (NIAAA, 1997a; 1997b; 1997c; Miller & Tonigan, 1996) used the 19-item SOCRATES on a large sample (N = 1,672), and the Cronbach alpha statistics for Taking Steps (α = .83), and Recognition (α = .85) were consistent with the optimal balance of scale fidelity and breadth of measurement for alpha measures. Although the Cronbach alpha for Ambivalence (α = .60) was lower, it provided high test-retest reliability (r = .83). In addition, the three constructs appear to have very little overlap, as Ambivalence was unrelated to Recognition (r = .03) and Taking Steps (r = .03). However, Recognition and Taking Steps were positively, albeit moderately related (r = .33). The three-factor solution accounted for 44% of the total item variance (Miller & Tonigan, 1996). Miller and Tonigan (1996) assert that the 19-item form provides scores that converge well, provide cleaner factor solutions, and presents similar internal consistency compared to the longer 39-item form.

To further evaluate the scale's structure and integrity, a principle component analysis with an oblimin rotation was conducted on the 19-item SOCRATES for this sample. Factor scores were then used in other analyses of this study. See Appendix C for a copy of the 19-item SOCRATES.

Alcohol and Drug Consequence Questionnaire

Decisional Balance was measured by the ADCQ (Cunningham et al., 1997), a 29-item measure developed specifically for the substance abuse population to assess an individual's anticipated costs and benefits of changing alcohol or drug use. The 29 items are rated on a 6-point Likert scale, ranging from 1 (not important) to 5 (extremely important), with a 0 score for items that are not applicable. The ADCQ is scored by summing the costs and benefits subscale scores. Item 15, "I will have a better relationship with my family," is representative of the benefits for change subscale, while item 21, "I will have difficulty not drinking or using drugs," is representative of a cost of change subscale. Subscale scores can range from 0 to 70 on costs (14 items: 2, 3, 5, 8, 14, 15, 16, 17, 21, 22, 24, 25, 27, and 29) and from 0 to 75 on benefits (15 items: 1, 4, 6, 7, 9, 10, 11, 12, 13, 18, 19, 20, 23, 26, and 28). High scores (50 – 75) indicate a greater level of importance, moderate scores (25 – 50) indicate moderate levels of importance, while low scores (0 – 25) indicate low levels of importance. See Appendix D for a copy of the ADCQ.

The ADCQ was derived, in part, from various Decisional Balance Scales (Velicer et al., 1985; Janis & Mann, 1977) and scales used to measure the pros and cons of changing an alcohol or drug problem (Solomon & Annis, 1989; 1990). From the original

38-item form, six items were discarded as they were highly endorsed as not applicable and three items were discarded due to poor factor loadings. The final version contains 29 items.

Cunningham et al. (1997) researched the utility and applicability of the ADCQ ($N = 218$) and found a two-factor (cost and benefit) solution (using principle-axis factoring with varimax rotation) that accounted for 41.3% of the total variance. The 14 items that loaded on Factor 1 formed a cost of change subscale and the 15 items that loaded on Factor 2 formed a benefit of change subscale. The benefits ($\alpha = .90$) and costs ($\alpha = .92$) subscales have good internal consistency. The ADCQ scores were correlated with a repeated-measure, self-report decisional balance exercise (benefits, $r = .20, p < .01$; and costs, $r = .38, p < .01$), providing some indication that the ADCQ is a valid measure of respondent's anticipated costs and benefits of change (Cunningham et al., 1997).

Alcohol Abstinence Self-efficacy Scale

The Alcohol Abstinence Self-efficacy Scale (AASE; DiClemente et al, 1994) is a 40-item measure, consisting of two 20-item subscales. Both subscales (confidence self-efficacy and temptation self-efficacy) are composed of the same twenty statements; however, the instructions differ. For the temptation self-efficacy subscale, the instructions read "We would like to know how tempted you might be to drink in each of these situations." For the confidence self-efficacy subscale, the instructions read "We would like to know how confident you are that you would not drink in each situation." Participants respond to each statement using a five-point, Likert-type scale ranging from

1 (not at all tempted) to 5 (extremely tempted). Scores are summed to obtain total scores for each subscale as follows:

Negative Affect: Questions 3, 6, 14, 16, and 18.

Social/Positive: Questions 4, 8, 15, 17, and 20.

Physical and Other Concerns: Questions 2, 5, 9, 12, and 13.

Withdrawal and Urges: Questions 1, 7, 10, 11, and 19.

Subscale scores can range from 5 to 25 on either the temptation or confidence self-efficacy scales. On any subscale of the AASE-T, high scores (20 – 25) indicate serious problems coping with the temptation to drink, moderate scores (15 – 20) indicate moderate problems, while low scores indicate mild problems. On any subscale of the AASE-C, high scores (20 – 25) indicate greater levels of confidence in not drinking, moderate scores (15 – 20) indicate moderate levels, while low scores indicate low levels. See Appendix E for a copy of the AASE-T (Temptation Self-efficacy) and Appendix F for a copy of the AASE-C (Confidence Self-efficacy).

Initial factor analysis (using a oblique rotation) of both subscales yielded four factors that correlated with the Marlatt and Gordon (1985) relapse categories: Negative Affect, Social/Positive, Physical and Other Concerns, and Withdrawal and Urges. The first factor, Negative Affect (NA), refers to intrapersonal and interpersonal negative states. Positive/Social (SP), the second factor, is characterized by social drinking situations and the use of alcohol to enhance positive states. The third factor, Physical and Other Concerns (PC), is hallmarked by physical discomfort or pain, concerns about others, and drinking dreams. Withdrawal and Urges (WU) represents the forth factor and is representative of withdrawal, cravings, and a testing of one's willpower (DiClemente et

al., 1994). Temptation self-efficacy factors correlated well with the confidence self-efficacy factors; however, some item loadings were not always as high and some overlapping of factor loadings were noted (DiClemente et al., 1994). As stated earlier, the confidence self-efficacy and temptation self-efficacy statements are the same. Example items for each of the four subscales are listed below:

Negative Affect: "When I am feeling angry inside."

Social/Positive: "When I see others drinking at a bar or at a party."

Physical and Other Concerns: "When I have a headache."

Withdrawal and Urges: "When I am in agony because of stopping or withdrawing from alcohol use."

The AASE was developed from knowledge gained from previous efficacy studies to resist the urge to drink heavily (Annis, 1986; Annis & Davis, 1989), assessing the frequency of heavy drinking through the Inventory of Drinking Situations (Annis & Graham, 1995) and studies on relapse and relapse prevention (Marlatt & Gordon, 1985). The AASE differs in theoretical base from previous efficacy studies, in that it incorporated Marlatt's and Gordon's (1985) classification of relapse determinants (DiClemente et al., 1994). The AASE was specifically designed to assess an individual's confidence (self-efficacy) to abstain from drinking alcohol and was modeled after the Smoking Abstinence Self-Efficacy (SASE; DiClemente, et al., 1991) scale that utilized both a confidence and temptation subscale. The temptation subscale can be viewed as cue strength of each situation. Originally designed as a 49-item instrument, nine items were found to be unstable and significantly skewed; therefore, they were abandoned (DiClemente et al., 1994).

Initial reliability studies demonstrated high internal consistency for the overall scale (α = .92) and confidence self-efficacy and temptation self-efficacy subscales established a negative correlation (r = -.58) with each other and a second order correlation (r = -.65) with the overall scale, which supported a prediction of finding a moderate negative relationship between the two subscales. Cronbach alpha test statistics for the confidence self-efficacy factors (NA = .88, SP = .82, PO = .83, and WU = .92) and for the temptation self-efficacy factors (NA = .99, SP = .86, PO = .60, and WU = .70) were consistent with the optimal balance of scale fidelity and breadth of measurement for alpha measures (DiClemente et al., 1994).

As Clifford (1983) and others have recognized the volatility of self-efficacy evaluations, the different methods of conducting self-efficacy research have come into question. Maurer and Pierce (1998) researched the utility of Likert scales with regard to self-efficacy studies and their results indicated that Likert-type and traditional measures of self-efficacy have similar reliability-error variance, provide equivalent levels of prediction, have similar factor structure, similar discriminability, and seems to offer an acceptable alternative method of measuring self-efficacy.

The Alcoholics Anonymous Involvement Scale

Developed by Tonigan, Connors, and Miller (1996) the Alcoholics Anonymous Involvement Scale (AAI) differentiates between Alcoholics Anonymous (AA) attendance (Newcomer or Continuing Member) and involvement (Uninvolved or Drop Out). Previous measures of AA affiliation targeted AA attendance (Emrick, Tonigan, Montgomery, & Little, 1993; and Ogborne & Glaser, 1981) curative influences (Gilbert,

1991; Sheeren, 1988; and Snow, Prochaska, & Rossi, 1994) or drinking outcome (Emrick, 1987; and Tonigan & Hiller-Sturmhofel, 1994). The AAI was initially presented and evaluated as a supplementary measure in the Project MATCH research (Miller & Tonigan, 1996; $N = 1,272$) and was followed by a smaller test-retest sample group (Tonigan, Connors, & Miller, 1996; $N = 76$). An example of the AAI is provided on Appendix F.

The 13-item AAI was designed to assess both attendance (3 items) and involvement (8 items) in AA. Two items (questions 8 and 9) are used to assess an individual's exposure to AA within the context of treatment. Items 1, 2, 3, 4, 5, 6, 7, and 13 (AA involvement) are yes or no responses and are scored dichotomously (either a 0 = no or a 1 = yes). Items 10, 11, and 12 are converted to deciles and individually divided by 10 to produce values ranging from 0.10 to 1.00 for each item. Item 2 (Have you attended AA in the past year?) is representative of items in the AA attendance subscale and item 11 (How many AA steps have you worked?) is representative of items in the AA involvement subscale.

Factor analysis of the AAI resulted in a 2-factor solution (scree plot inspection and eigenvalues greater than 1.00) with factor 1 (attendance) accounting for 40% of the variance and factor 2 (involvement) accounting for an additional 9% of the variance. Correlation of the summed factors depicted a moderately high positive relationship ($r = .67$). Internal consistency for the entire AAI scale was found to fairly high (Chronbach alpha $\alpha = .85$), and subscales produced similar results (attendance subscale, $\alpha = .85$, $r = .65$; and involvement subscale, $\alpha = .77$, $r = > .30$)

The AAI has demonstrated utility in discerning four groups: Drop Outs, Newcomers, Continuing Members, and Unexposed. Drop Outs. The Unexposed Drop-Out refers to those individuals that attended AA at one time, but do not currently attend. The Newcomers group is comprised of individuals who have no past exposure to AA, but are active current members. Continuing Members refers to individuals that have had past exposure to AA and who are active current members. The Unexposed group is comprised of individuals who have not had any experience or exposure to AA. The AAI was scored under the following conditions: Drop Outs = Questions 1, 2, or 3 = 1 (Yes) and Questions 11 or 12 < .3; Newcomers = Questions 2 or 4 or 6 or 8 = 1 (Yes); Continuing = Question 5 or 7 or 9 or 13 = 1 (Yes) and Question 11 or 12 > .3; and Unexposed = Question 1 or 2 = 2 (No). Morgenstern, Lobouvie, McCrady, Kahler, and Frey (1997) reported that affiliation with AA is associated with better proximal substance use outcomes.

It should be noted that the AAI scores were not used for this dissertation project, but will used in future analyses. It is presented here for institutional review board approval.

Procedure

Approval for this study followed standard procedures at each treatment program and adhered to the principles, rules, and laws governing individual and agency confidentiality. Likewise, approval from the Oklahoma State University Institutional Review Board was obtained before initiation of this study.

Prospective individuals were recruited at the time of admission into their respective treatment program. For the participants in the Outpatient and Mandated Drug

Court group, the principle investigator collected the data. For the participants in Inpatient group, data was collected by a staff member of the facility.

Typically, upon an admission into a treatment program, individuals are asked to complete requisite documentation specific to the treatment program (admission or intake documentation). During this time, prospective participants were invited to participate in this study. Prospective participants were provided information that explained the study (See Appendix G). In the case of an individual's inability to participate upon his or her admission, (e.g., severe withdrawal in the inpatient treatment setting) the participant completed the measures as soon as the situation permitted. Prospective participants were read the informed consent form that was provided in the data collection packet. See Appendix H for a copy of the informed consent form.

Participants signed the consent form and completed the packet of materials, which included a demographic sheet, the 19-item SOCRATES, the 29-item ADCQ, the 40-item ASSE, and the 13-item AAI. These measures were randomly sorted in the packets to control for order effects of test administration. To ensure participant confidentiality, participants were directed not to write their names on any questionnaire or measure (see Informed Consent form). After the participants completed the questionnaires, they returned the questionnaires to the assessment packet, sealed the assessment packet, and wrote their initials across the seal. This helped to ensure the confidentiality of their responses. Staff members at the different treatment programs did not have access to the participant's responses; however, a summary of the findings will be provided to each treatment facility at the end of the study. Informed consent forms were separated from the packets to ensure that names could not be connected to any questionnaire responses. A

number was assigned to each assessment packet and the questionnaire forms within the assessment packet, in order to keep the questionnaires together. These numbers were not associated with participant's names. Participation was voluntary and participants did not receive any compensation. Participants were allowed to withdraw from the study at any time and they were not penalized for withdrawing from this study.

Data packets were collected from the three different substance abuse treatment groups. There were 87 packets collected from the In-Patient/12-Step Facilitation Group, 92 packets from the Intensive Outpatient/Motivational Enhancement Therapy Group, and 96 packets from the Drug Court/Moral Reconnatation Therapy Group ($N = 275$). All fully completed data packets were included in this study. Data packets that contained one or two ambiguous (two or more endorsements for any one item) or voided (blank or incomplete) responses per instrument were considered complete and were used in this study. Missing data and multiple responses to items were treated similarly by utilizing the group mean score (rounded to whole numbers) for the item(s) in question. Data packets that had more than two ambiguous or voided responses per instrument were considered incomplete and were not included in the analyses of this study. There were nine incomplete data packets from the In-Patient/12-Step Facilitation Group and 11 incomplete data packets from both the Intensive Outpatient/Motivational Enhancement Therapy Group, and the Drug Court/Moral Reconnatation Therapy Group. Consequently, the original sample of all data collected ($N = 275$) was reduced to the study sample size ($N = 244$) by discarding the 31 incomplete packets.

Summary

Participants ($N = 244$) from three different treatment groups [Inpatient ($n = 78$) Intensive Outpatient ($n = 81$), and Mandated Drug Court ($n = 85$)] completed a data collection packet containing a demographics form, the SOCRATES, the ADCQ, the AASE-T, the AASE-C, and the AAI. Data was collected at the onset of treatment and participants completed an informed consent form. The data was analyzed and the results are presented in the following chapter.

CHAPTER FOUR

RESULTS

Introduction

This chapter presents the statistical analyses conducted in this study. The results of each analysis are presented in sequence by the research question. The descriptive statistics are presented first (when applicable) followed by the results of the particular analysis.

Research Question 1

What is the component structure of the 19-item SOCRATES for the sample? To answer this research question, a principal components analysis (with an oblimin rotation) was conducted on the SOCRATES items for the sample ($N = 244$).

Descriptive Statistics

The descriptive statistics (means and standard deviations) for the SOCRATES items are shown at Table 2. The descriptive statistics (means and standard deviations) for the SOCRATES components are shown at Table 3. The descriptive statistics (means and standard deviations) for the SOCRATES factor scores are shown at Table 4.

Table 2

Means and Standard Deviations of SOCRATES Items

Items	Inpatient Group ($n = 78$)		Outpatient Group ($n = 81$)		Drug Court Group ($n = 85$)		Total ($N = 244$)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
01	4.59	.83	4.15	.92	3.64	1.40	4.11	1.15
02	3.37	1.54	3.40	1.33	2.85	1.27	3.20	1.40
03	4.71	.74	3.96	1.08	3.45	1.29	4.02	1.18
04	4.45	.73	4.06	.87	3.44	1.22	3.97	1.05
05	3.37	1.64	3.69	1.10	3.09	1.37	3.38	1.40
06	4.22	1.32	3.84	1.12	3.36	1.31	3.80	1.30
07	4.50	.73	3.79	1.09	3.01	1.36	3.75	1.25
08	4.62	.76	4.07	.80	3.48	1.24	4.04	1.07
09	4.58	.81	4.00	.91	3.34	1.34	3.95	1.17
10	4.47	.88	3.72	1.16	2.93	1.48	3.68	1.36
11	3.14	1.65	3.51	1.78	3.27	1.19	3.31	1.56
12	4.05	1.29	3.73	1.20	3.21	1.31	3.65	1.31
13	4.56	.85	4.05	.92	3.31	1.27	3.95	1.16
14	4.71	.63	4.12	.95	3.49	1.25	4.09	1.10
15	4.72	.64	3.96	.98	3.27	1.40	3.96	1.21
16	3.40	1.70	3.67	1.18	3.31	1.27	3.45	1.40
17	4.67	.71	3.79	1.22	2.94	1.39	3.77	1.35
18	4.55	.83	4.07	.89	3.33	1.30	3.97	1.15
19	4.68	.65	4.02	1.01	3.64	1.40	4.00	1.16

Table 3

Means and Standard Deviations of the SOCRATES Components Subscale Scores

SOCRATES	Inpatient (n = 78)		Outpatient (n = 81)		Drug Court (n= 85)		Total (N = 244)	
	Mean	*SD*	Mean	*SD*	Mean	*SD*	Mean	*SD*
Component 1	68.06	8.71	59.34	11.70	49.56	16.69	58.72	14.93
Component 2	58.46	8.34	53.40	11.48	45.15	14.99	52.14	12.96
Component 3	11.89	2.49	11.13	2.50	9.24	3.44	10.72	3.06

Component 1 = Recognition with Some Taking Steps
Component 2 = Ambivalence with Some Recognition
Component 3 = Denial

Table 4

Means and Standard Deviations of the SOCRATES Component Scores

SOCRATES	Inpatient (n = 78)		Outpatient (n = 81)		Drug Court (n = 85)		Total (N = 244)	
	Mean	*SD*	Mean	*SD*	Mean	*SD*	Mean	*SD*
Component 1	-5.2E -18	1.0	-1.6E -15	1.0	-3.5E -18	1.0	-5.9E -17	1.0
Component 2	-3.8E -17	1.0	-3.3E -17	1.0	-3.1E -17	1.0	-1.1E -16	1.0
Component 3	-9.7E -17	1.0	-9.5E -17	1.0	-8.3E -17	1.0	-1.1E -16	1.0

Component 1 = Recognition with Some Taking Steps
Component 2 = Ambivalence with Some Recognition
Component 3 = Denial

Statistical Analysis

Based on the Kaiser rule (e.g., retain factors with eigenvalues greater than 1.0) and an examination of a scree plot (Stevens, 1996), three components were extracted from the structure matrix: Recognition with Some Taking Steps (R-TS), Ambivalence with Some Recognition (A-R), and Denial (D). Almost three-fourths (72.86 %) of the total variance was explained by these three components. Recognition with Some Taking Steps uniquely accounted for 58 % of the total variance; Ambivalence with Some Recognition uniquely accounted for 9.1 % of the total variance; Denial uniquely accounted for an additional 5.7 % of the total variance.

Although the results of the principle components analysis identify three factors, they are not comparable to the SOCRATES factor structure identified in the literature. The first component (Recognition with Some Taking Steps – R-TS) was comprised of fifteen items (15:19), the second component (Ambivalence with Some Recognition – A-R) was comprised of thirteen items (13:19), while the third component (Denial – D) was comprised of three items (3:19). Eight items uniquely loaded to one component: items 4, 8, 9, 13, and 19 with the R-TS component and items 2, 11, and 16 with the A-R component. The first component accounted for fifty-eight percent of the total variance, the second component accounted for 9 % of the total variance, and the third component accounted for another 5.6 % of the total variance. Only items that loaded at .40 or higher were considered to be included in the component structure.

The Recognition and Taking Steps component appears to be a hybrid of Miller and Tonigan's Recognition and Taking Steps factors. This component included 100 % ($N = 7$) of the items from the original Recognition factor and 87.5 % ($N = 7$) from the

original Taking Steps factors found in Miller and Tonigan's (1996) study. It reflects the relationship between recognition of a substance abuse problem and the likelihood of taking steps to recover (become sober/clean) and maintain changes in drinking. The Ambivalence with Some Recognition component appears to be another hybrid of two original components from Miller and Tonigan's (1996) study: Ambivalence and Recognition. Approximately 75 % ($N = 3$) of the original Ambivalence items and 86 % ($N = 6$) of the original Recognition items loaded on this component. This component reflects conflict with substance abusing individuals: ambivalence about having a substance abuse problem along with some recognition that drinking could be a problem. This component could reflect participants' transition from one stage of change to the next—that is, from Ambivalence to Recognition (e.g., Miller & Tonigan, 1996). The Denial component appears to be a unique component not found in any former study using the SOCRATES. The three items that comprise the Denial component are Item 5 ("I was drinking too much at one time, but I managed to change my drinking."), Item 10, and Item 12. Items 10 and 12 were reversed scored and should read respectively, "I do not have serious problems with drinking." and "My drinking is not causing a lot of harm."

See Figure 1 for the scree plot depicting the component eigenvalues. Table 5 shows the initial eigenvalue loadings for the SOCRATES components and the explained variance. Table 6 shows the structure matrix of the SOCRATES components and table 7 shows the comparison of item loadings from the Miller and Tonigan (1996) study and the results of this analysis.

Figure 1

Scree Plot of SOCRATES Components

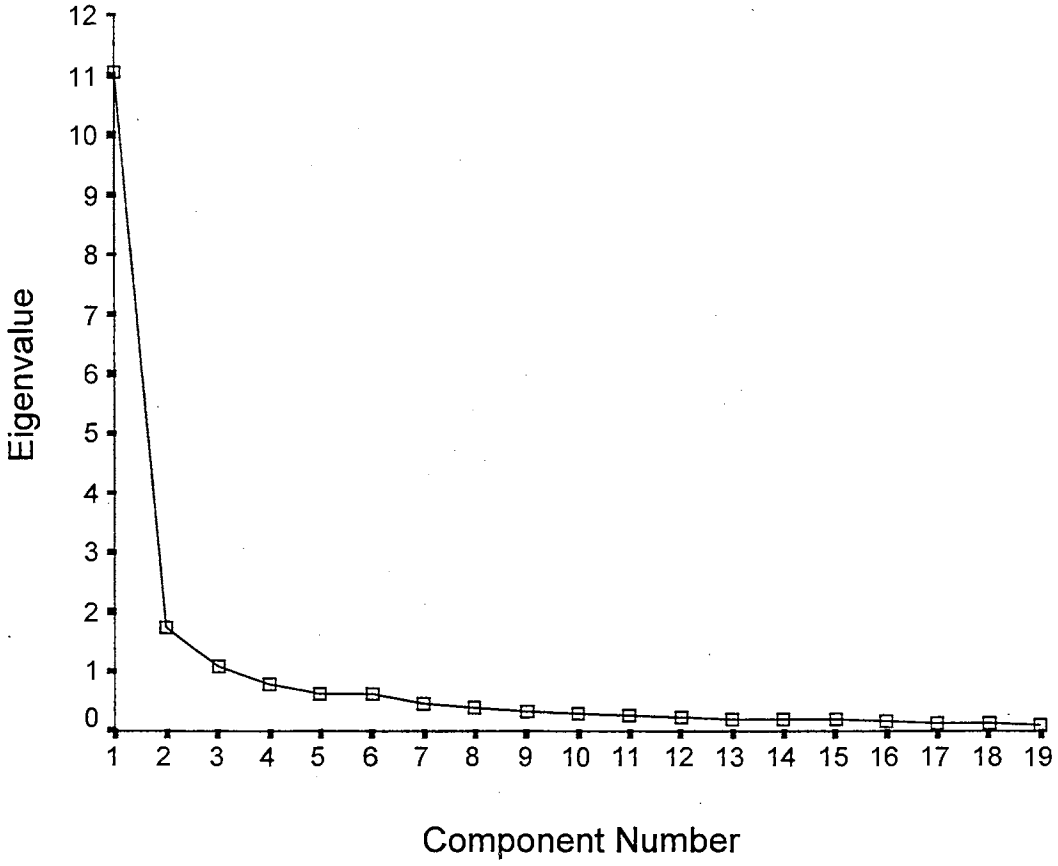

Table 5

SOCRATES Components and Explained Variance ($N = 244$)

SOCRATES Components	Initial Eigenvalues		
	Eigenvalues[1]	% of Variance	Cumulative %
01	11.03	58.07	58.07
02	1.73	9.11	67.18
03	1.08	5.68	72.86
04	.79	4.14	77.00
05	.64	3.36	80.36
06	.63	3.31	83.67
07	.47	2.47	86.14
08	.39	2.05	88.20
09	.34	1.79	90.00
10	.28	1.50	91.49
11	.26	1.37	92.86
12	.24	1.26	94.12
13	.21	1.12	95.24
14	.19	1.01	96.25
15	.19	.98	97.23
16	.16	.86	98.09
17	.14	.76	98.85
18	.13	.71	99.56
19	.01	.44	100.00

Table 6

Structure Matrix of the SOCRATES Items ($N = 244$)

	SOCRATES Items	Components		
		1	2	3
1	I really want to make some changes in my drinking.	.84	.41	.00
2	Sometimes I wonder if I am an alcoholic.	.32	.67	.09
3	If I don't change my drinking soon, my problems are going to get worse.	.82	.46	-.24
4	I have already started making some changes in my drinking.	.84	.39	.25
5	I was drinking too much at one time, but I managed to change my drinking.	.35	.63	.58
6	Sometimes I wonder if my drinking is hurting other people.	.63	.72	-.15
7	I am a problem drinker.	.81	.40	-.34
8	I'm not just thinking about changing my drinking, I am already doing something about it.	.87	.36	.16
9	I have already changed my drinking, and I am looking for ways to keep from slipping back into my old pattern.	.85	.38	.05
10	I have serious problems with drinking.	.82	.40	-.41
11	Sometimes I wonder if I am in control of my drinking.	.25	.68	.02
12	My drinking is causing a lot of harm.	.65	.66	-.49
13	I am actively doing things now to cut down or stop drinking.	.87	.39	.03
14	I want help to keep from going back to the drinking problems that I had before.	.89	.43	-.12
15	I know that I have a drinking problem.	.90	.47	-.28
16	There are times when I wonder if I drink too much.	.37	.81	-.11
17	I am an alcoholic.	.87	.43	-.28
18	I am working hard to change my drinking.	.86	.40	.00
19	I have made some changes in my drinking, and I want some help to keep from going back to the way I used to drink.	.86	.39	-.09

Component 1 = Recognition with Some Taking Steps
Component 2 = Ambivalence with Some Recognition
Component 3 = Denial

Table 7

Comparison of SOCRATES Components with Miller & Tonigan (1996) Factors

	Miller & Tonigan (1996)			Kells (2001)		
SOCRATES Items	TS	R	A	R-TS	A-R	D
1		X		X	X	
2			X		X	
3		X		X	X	
4	X			X		
5	X				X	X
6			X	X	X	
7		X		X	X	
8	X			X		
9	X			X		
10		X		X		X
11			X		X	
12		X		X	X	X
13	X			X		
14	X			X	X	
15		X		X	X	
16			X		X	
17		X		X	X	
18	X			X	X	
19	X			X		

Component 1 = Recognition with Some Taking Steps
Component 2 = Ambivalence with Some Recognition
Component 3 = Denial

While a three-component solution was found in previous studies on the SOCRATES, (Ferrell, 1999; Isenhart, 1994; and Miller & Tonigan, 1996) the items that loaded on these components are very different from previous studies found in the literature. Both the Isenhart (1994) study and the Ferrell (1999) study used the forty-item SOCRATES. Isenhart (1994) extracted three factors (Contemplation, Determination, and Action) and Ferrell (1999) initially extracted ten factors; however, only three factors were interpretatively useful [Action (26 % of the total variance), Awareness (8.1 % of the total variance), and Ambivalence 6.6 % of the total variance)]. The three factors from the Isenhart (1994) study accounted for 47 % of the total variance while the three factors from the Ferrell (1999) study accounted for 41 % of the total variance. The most current version of the SOCRATES (the 19-item SOCRATES 8A; Miller & Tonigan, 1996) provided three factors: Ambivalence (items 2, 6, 11, and 16), Recognition (items 1, 3, 7, 10, 12, 15, and 17), and Taking Steps (4, 5, 8, 9, 13, 14, 18, and 19). Their three-factor solution accounted for 44 % of the total variance. Miller and Tonigan (1996) conceptualized these factors as "continuously distributed motivational processes that may underlie stages of change" (p.85).

From this analysis, Component 1 ("Recognition with Some Taking Steps" or "R-TS") contained 15 items (with loading values 4.0) that reflected the participants' recognition of a substance abuse problem and their efforts to cope with or resolve their substance abuse problem. For example, item 1 ("I really want to make some changes in my drinking.") is an example of a "Recognition" statement, while item 4 ("I have already started to make some changes in my drinking.") is an example of a "Taking Steps statement, and both items had very high loadings (.839 and .845 respectively) on

Component 1. Component 2 ("Ambivalence with Some Recognition") contained 13 items (with loading values 4.0) that reflected the participants' ambivalence about their alcohol or drug use with some recognition that their use may be a problem. For example, item 16 ("There are time when I wonder if I drink too much.") is an example of an "Ambivalence" statement with a high loading (.886) on Component 2. In contrast, Component 3 ("Denial") contained 3 items (with loading values 4.0) that reflected the participants' denial of a substance abuse problem. Component 3 is comprised of two items with negative (inverse) loadings [item 10 loaded at -.414 ("I have a serious problem with drinking.") and item 12 loaded at -.492 ("My drinking is causing a lot of harm.")]. The third item (5) that comprises Component 3 (I was drinking too much at one time, but I managed to change my drinking) seems to acknowledge a past problem but denies any present problem. The SOCRATES components found in this study and their differences from factors generated in previous studies are discussed in greater detail in Chapter 5.

Research Question 2

Do the SOCRATES component scores differ across substance abuse treatment programs (Inpatient treatment group utilizing a hybrid Twelve-Step Facilitation treatment program, Intensive Outpatient treatment group utilizing Motivational Enhancement Therapy, and a Mandated Drug Court treatment group utilizing Moral Reconnitation Therapy)? To address the second research question, a multivariate analysis of variance (MANOVA) was performed to identify any between-group differences.

Statistical Analysis

The results of the MANOVA indicated significant treatment group differences on the SOCRATES component scores when they were considered together, $F(1, 478) = 17.45, p < .01$.

Follow-up univariate analyses (ANOVA) were conducted. These series of one-way ANOVAs indicated significant treatment group differences for Component 1 ("Recognition with Some Taking Steps"), $F(2, 241) = 45.08, p < .01$, Component 3 ("Denial"), $F(2, 241) = 3.39, p < .05$, but not for Component 2 ("Ambivalence with Some Recognition"), $F(2, 241) = 3.01, p < .051$.

To further understand the treatment group differences on these two components, a Tukey post hoc analysis of multiple comparisons was conducted. This comparison examined significant differences across the three treatment groups for Recognition with some Taking Steps and Denial. The Inpatient group had significantly higher scores on Component 1 (Recognition with Some Taking Steps) compared to the Outpatient and Drug Court groups. The Outpatient group had significantly higher scores on Component 1 than the Drug Court group. Treatment group paired comparisons for Component 3 revealed some different findings. While the Drug Court and Inpatient Groups, and Drug Court and Outpatient groups did not significantly differ on Component 3 (Denial), the participants in Inpatient group scored significantly higher on Denial than patients in the Outpatient treatment group. See Table 8 for the post hoc findings.

Based on the results of these statistical analyses, the first null hypothesis (that there would be no significant differences in the SOCRATES factors across treatment programs) was rejected.

Table 8

Test of Multiple Comparisons for the SOCRATES Component Scores

Dependent Variable	Treatment Groups		Mean Difference	Significance
R-TS	Inpatient	Outpatient	.61	.000
		Drug Court	1.27	.000
	Outpatient	Inpatient	-.61	.000
		Drug Court	.67	.000
	Drug Court	Inpatient	-1.27	.000
		Outpatient	-.67	.000
D	Inpatient	Outpatient	-.39	.038
		Drug Court	-.31	.110
	Outpatient	Inpatient	.39	.038
		Drug Court	.07	.880
	Drug Court	Inpatient	.31	.110
		Outpatient	-.07	.880

Research Question 3

Do the cognitive factors differ across substance abuse treatment programs (inpatient treatment utilizing a hybrid 12-step treatment program, intensive outpatient utilizing Motivational Enhancement Therapy, and mandated drug court outpatient treatment utilizing Moral Reconnitation Therapy)? To address the third research question, three MANOVA procedures were conducted. The first MANOVA examined the between-group (Inpatient, Outpatient, and Mandated Drug Court) differences on the subscale scores of the Alcohol and Drug Consequence Questionnaire (ADCQ). The second MANOVA examined the between-group differences (Inpatient, Outpatient, and Mandated Drug Court) on the subscale scores of the Alcohol Abstinence Self-efficacy (Temptation) Scale (AASE-T). The third MANOVA examined the between-group differences (Inpatient, Outpatient, and Mandated Drug Court) on the subscale scores of the Alcohol Abstinence Self-efficacy (Confidence) Scale (AASE-C).

Descriptive Statistics

Descriptive statistics are provided for each instrument used in this study (the ADCQ, the AASE-T and the AASE-C). The means and standard deviations for each treatment group [Inpatient Group ($n = 78$), Outpatient Group ($n = 81$), Drug Court Group ($n = 85$)], and for the entire sample ($N = 244$) follow.

The descriptive statistics for each of the Alcohol and Drug Consequence Questionnaire (ADCQ) items are provide in Table 9. The ADCQ scores range from 1 (Not Very Important) to 5 (Extremely Important). In addition, a score of 0 (Does Not Apply) was an optional response to the instrument items. In Table 10, the descriptive

statistics for the subscale scores of the Alcohol and Drug Consequence Questionnaire (Cost of Change and Benefits of Change) are presented for each treatment group [Inpatient Group (n = 78), Outpatient Group (n = 81), Drug Court Group (n = 85)], and for the entire sample (N = 244). The ADCQ subscale scores range from 0 – 70 on the Cost of Change and from 0 – 75 on the Benefits of Change.

The descriptive statistics for each of the Alcohol Abstinence Temptation Self-efficacy Questionnaire (AASE-T) items are provided in Table 11. Item scores range from 1 (Not At All Tempted) to 5 (Extremely Tempted). In Table 12, the descriptive statistics for the Temptation subscale scores of the Alcohol Abstinence Self-efficacy Questionnaire (Negative Affect, Social/Positive, Physical and Other Concerns, and Withdrawal and Urges) are presented by treatment group and for the total sample. The AASE-T subscale scores range from 5 – 25 on each of the four subscales.

The descriptive statistics for each of the AASE-C items are provided in Table 13. Item scores range from 1 (Not At All Confident) to 5 (Extremely Confident). In Table 14, the descriptive statistics for the Confidence subscale scores of the Alcohol Abstinence Self-efficacy Questionnaire (Negative Affect, Social/Positive, Physical and Other Concerns, and Withdrawal and Urges) are presented by treatment group and for the total sample. The AASE-C subscale scores range from 5 – 25 on each of the four subscales.

Table 9

Means and Standard Deviations of ADCQ Items

Items	Inpatient Group ($N = 78$)		Outpatient Group ($N = 81$)		Drug Court Group ($N = 85$)		Total (N = 244)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
01	4.35	.79	4.04	1.30	3.42	1.64	3.92	1.35
02	3.09	1.49	2.98	1.62	2.34	1.37	2.79	1.52
03	3.45	1.57	3.48	1.65	2.60	1.62	3.16	1.66
04	4.64	.88	4.07	1.33	3.08	1.71	3.91	1.50
05	3.81	1.03	2.93	1.69	2.39	1.46	3.02	1.54
06	3.49	1.29	4.16	1.17	3.47	1.57	3.70	1.39
07	4.60	.63	4.12	1.21	3.24	1.52	3.97	1.31
08	3.29	1.51	2.83	1.60	2.59	1.74	2.89	1.64
09	3.29	1.44	3.41	1.49	2.88	1.70	3.19	1.56
10	4.46	1.21	4.40	1.14	3.62	1.44	4.15	1.33
11	4.47	1.17	4.42	1.04	3.44	1.59	4.09	1.38
12	4.35	1.09	4.25	1.16	3.59	1.50	4.05	1.31
13	4.74	.61	4.15	1.31	3.45	1.60	4.09	1.36
14	3.24	1.73	3.00	1.60	2.41	1.71	2.87	1.71
15	2.86	1.81	2.85	1.73	2.19	1.66	2.62	1.75
16	2.79	1.64	2.75	1.70	2.24	1.66	2.59	1.68
17	3.15	1.69	3.27	1.64	2.54	1.64	2.98	1.68
18	4.46	.82	4.25	1.15	3.85	1.39	4.18	1.17
19	4.46	.91	4.38	.96	3.64	1.61	4.15	1.26
20	4.45	.86	4.35	1.04	3.56	1.67	4.11	1.31
21	3.19	1.78	2.42	1.53	2.15	1.55	2.57	1.67
22	1.91	1.62	2.62	1.55	2.34	1.72	2.30	1.65
23	3.99	1.17	4.02	1.32	3.39	1.60	3.79	1.41
24	2.01	1.64	2.19	1.57	1.95	1.65	2.05	1.62
25	3.38	1.67	2.73	1.68	2.34	1.67	2.80	1.72
26	4.29	.90	3.57	1.51	2.84	1.65	3.55	1.52
27	2.58	1.81	2.80	1.69	2.59	1.62	2.66	1.70
28	4.18	1.10	4.53	3.33	3.69	1.41	4.13	2.20
29	2.72	1.88	2.63	1.69	2.28	1.79	2.54	1.79

Table 10

Means and Standard Deviations of the ADCQ Subscale Scores

Instrument and Subscales	Inpatient ($N = 78$)		Outpatient ($N = 81$)		Drug Court ($N = 85$)		Total ($N = 244$)	
	Mean	*SD*	Mean	*SD*	Mean	*SD*	Mean	*SD*
Decisional Balance Subscale Scores *								
Costs	37.84	15.98	39.47	17.03	32.95	15.00	37.84	15.98
Benefits	58.97	14.11	62.11	11.31	51.15	17.64	58.97	14.11

* Based on the subscales generated by research from Cunningham et al. (1997).

Table 11

Means and Standard Deviations of AASE-T Items

Item	Inpatient Group ($N = 78$)		Outpatient Group ($N = 81$)		Drug Court Group ($N = 85$)		Total (N = 244)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
01	3.01	1.27	3.10	1.16	2.71	1.33	2.93	1.26
02	2.13	1.09	2.68	1.27	2.06	1.07	2.29	1.18
03	3.22	1.50	3.68	1.08	2.95	1.26	3.28	1.32
04	2.72	1.29	3.21	1.25	3.35	1.14	3.10	1.25
05	2.67	1.27	3.10	1.17	2.67	1.20	2.81	1.22
06	3.06	1.31	3.51	1.17	2.75	1.32	3.10	1.30
07	2.67	1.42	3.56	1.36	2.72	1.26	2.98	1.40
08	2.47	1.16	3.60	1.26	3.05	1.25	3.05	1.30
09	2.21	1.10	3.10	1.24	2.35	1.19	2.55	1.24
10	2.85	1.48	3.51	1.33	2.66	1.37	3.00	1.43
11	2.88	1.35	3.57	1.29	3.02	1.34	3.16	1.35
12	2.91	4.41	3.04	1.19	2.41	1.27	2.78	2.69
13	2.59	1.19	3.25	1.24	2.66	1.29	2.83	1.27
14	3.01	1.20	3.60	1.15	2.95	1.33	3.19	1.26
15	2.74	1.17	3.59	1.27	3.16	1.34	3.17	1.31
16	3.06	1.36	3.93	1.02	3.25	1.37	3.41	1.31
17	2.51	1.24	3.51	1.31	3.05	1.47	3.03	1.40
18	2.68	1.33	3.51	1.12	3.11	1.30	3.10	1.29
19	2.78	1.12	3.59	1.20	2.79	1.33	3.05	1.28
20	2.44	1.22	3.51	1.12	3.35	1.32	3.11	1.31

Table 12

Means and Standard Deviations of the AASE-T Subscale Scores

Instrument and Subscales	Inpatient ($N = 78$)		Outpatient ($N = 81$)		Drug Court ($N = 85$)		Total ($N = 244$)	
	Mean	*SD*	Mean	*SD*	Mean	*SD*	Mean	*SD*
Temptation Self-efficacy Subscale Scores *								
Negative Affect	15.04	6.16	18.22	4.37	15.01	5.67	16.09	5.63
Social/Positive	12.88	5.29	17.42	4.88	15.96	5.33	15.46	5.48
Physical/Other	12.50	6.93	15.16	4.80	12.15	4.43	13.26	5.60
Withdrawal/Urges	14.19	5.66	17.32	5.41	13.89	5.18	15.13	5.61

* Based on the subscales generated by research from DiClemente et al. (1994).

Table 13

Means and Standard Deviations of AASE-C Items

Item	Inpatient Group ($N = 78$)		Outpatient Group ($N = 81$)		Drug Court Group ($N = 85$)		Total ($N = 244$)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
01	3.18	1.39	3.05	1.18	2.68	1.38	2.96	1.33
02	3.94	1.13	3.35	1.17	3.05	1.35	3.43	1.28
03	3.27	1.17	2.79	1.09	2.71	1.08	2.91	1.14
04	3.73	1.17	3.23	1.22	2.96	1.23	3.30	1.24
05	3.60	1.09	3.17	1.13	3.04	1.19	3.26	1.16
06	3.24	1.16	3.01	1.11	2.73	1.19	2.99	1.17
07	3.26	1.53	2.64	1.34	2.79	1.31	2.89	1.41
08	3.92	1.26	2.77	1.25	2.84	1.40	3.16	1.40
09	3.87	1.11	3.06	1.12	2.94	1.44	3.28	1.30
10	3.31	1.59	2.95	1.40	2.96	1.42	3.07	1.47
11	3.42	1.32	2.74	1.33	2.58	1.27	2.90	1.35
12	3.90	1.10	3.20	1.17	2.93	1.30	3.33	1.26
13	3.50	1.04	3.05	1.19	2.64	1.31	3.05	1.24
14	3.21	1.18	2.99	1.19	2.46	1.32	2.87	1.27
15	3.64	1.04	2.79	1.24	2.79	1.42	3.06	1.31
16	3.18	1.19	2.77	1.28	2.60	1.32	2.84	1.28
17	3.68	1.25	2.75	1.27	2.71	1.38	3.03	1.37
18	3.44	1.23	2.93	1.16	2.53	1.30	2.95	1.28
19	3.04	1.28	2.68	1.18	2.56	1.30	2.75	1.27
20	3.77	1.12	2.98	1.07	2.92	1.37	3.21	1.26

Table 14

Means and Standard Deviations of the AASE-C Subscale Scores by Treatment Group

Instruments and Subscales	Inpatient ($N = 78$)		Outpatient ($N = 81$)		Drug Court ($N = 85$)		Total ($N = 244$)	
	Mean	*SD*	Mean	*SD*	Mean	*SD*	Mean	*SD*
Confidence Self-efficacy Subscale Scores *								
Negative Affect	16.33	5.38	14.48	4.70	13.02	5.01	14.57	5.19
Social/Positive	18.73	5.06	14.52	4.91	14.21	5.15	15.74	5.42
Physical/Other	18.81	4.68	15.83	4.24	14.59	5.13	16.35	5.01
Withdrawal/Urges	16.21	6.44	14.06	5.31	13.58	5.19	14.58	5.74

* Based on the subscales generated by research from DiClemente et al. (1994).

Statistical Analysis

The results of the first MANOVA indicated significant treatment group differences on the ADCQ subscale scores when they were considered together, F (4, 480) = 13.41, $p < .01$. Follow-up univariate analyses (ANOVA) were conducted. These series of one-way ANOVAs indicated significant treatment group differences for the ADCQ Cost subscale, F (2, 241) = 6.733, $p < .01$, and the ADCQ Benefits subscale, F (2, 241) = 24.424, $p < .01$.

To further understand the treatment group differences, a Tukey post hoc analysis of multiple comparisons was conducted. While the Outpatient and Inpatient Groups did not significantly differ on the ADCQ Costs and Benefits subscales, participants in these two treatment groups scored significantly higher than patients in the Drug Court treatment group on these subscales. See Table 15 for the post hoc findings.

Table 15

Test of Multiple Comparisons for the ADCQ Subscale Scores by Treatment Groups

Dependent Variable	Treatment Groups		Mean Difference	Significance
Cost	Inpatient	Outpatient	2.12	.555
		Drug Court	13.08	.000
	Outpatient	Inpatient	-2.12	.555
		Drug Court	10.96	.000
	Drug Court	Inpatient	-13.08	.000
		Outpatient	-10.96	.000
Benefit	Inpatient	Outpatient	2.02	.694
		Drug Court	8.53	.001
	Outpatient	Inpatient	-2.02	.694
		Drug Court	6.52	.020
	Drug Court	Inpatient	-8.53	.001
		Outpatient	-6.52	.020

The results of the second MANOVA indicated significant treatment group differences on the AASE-T subscales scores when they were considered together, F (8, 476) = 7.911, $p < .01$. Follow-up univariate analyses (ANOVA) were conducted and indicated significant treatment group differences for the AASE-T Negative Affect subscale, F (2, 241) = 9.325, $p < .01$; the Social/Positive subscale, F (2, 241) = 15.900, $p < .01$; the Physical and Other Concerns subscale, F (2, 241) = 7.405, $p < .01$; and the Withdrawal and Urges subscale, F (2, 241) = 10.015, $p < .01$. To further understand the treatment group differences on these subscales, a Tukey post hoc analysis of multiple comparisons was conducted.

For the Negative Affect, Physical and Other Concerns, and Withdrawal and Urges subscales, the Outpatient Group scored significantly higher on these subscales compared to the Inpatient and Drug Court Groups. However, the Inpatient and Drug Court Groups did not significantly differ on these subscales.

For the Social/Positive subscale, the Outpatient Group scored significantly higher than the Inpatient Group, but did not significantly differ with the Drug Court Group. The Inpatient Group scored significantly lower from the Outpatient and Drug Court Groups. However, the Outpatient and Drug Court Groups did not significant differ on Social/Positive subscale scores. See Table 16 for the post hoc findings.

Table 16

Test of Multiple Comparisons for the AASE-T Subscale Scores by Treatment Groups

Dependent Variable	Treatment Groups		Mean Difference	Significance
Negative Affect	Inpatient	Outpatient	-3.18	.001
		Drug Court	.03	.999
	Outpatient	Inpatient	3.18	.001
		Drug Court	3.21	.000
	Drug Court	Inpatient	-.03	.999
		Outpatient	-3.21	.000
Social Positive	Inpatient	Outpatient	-4.54	.000
		Drug Court	-3.08	.000
	Outpatient	Inpatient	4.54	.000
		Drug Court	1.46	.165
	Drug Court	Inpatient	3.08	.000
		Outpatient	-1.46	.165
Physical/Other	Inpatient	Outpatient	-2.66	.006
		Drug Court	.35	.913
	Outpatient	Inpatient	2.66	.006
		Drug Court	3.01	.001
	Drug Court	Inpatient	-.35	.913
		Outpatient	-3.01	.001
Withdrawal & Urges	Inpatient	Outpatient	-3.13	.001
		Drug Court	.30	.934
	Outpatient	Inpatient	3.13	.001
		Drug Court	3.43	.000
	Drug Court	Inpatient	-.30	.934
		Outpatient	-3.43	.000

The results of the third MANOVA indicated significant treatment group differences on the AASE-C subscale scores when they were considered together, F (8, 476) = 7.785, $p < .01$. Follow-up univariate analyses (ANOVA) were conducted, and indicated significant treatment group differences for the AASE-T Negative Affect subscale, F (2, 241) = 8.503, $p < .01$; the Social/Positive subscale, F (2, 241) = 19.820, $p < .01$; the Physical and Other Concerns subscale, F (2, 241) = 16.655, $p < .01$; and the Withdrawal and Urges subscale, F (2, 241) = 4.615, $p < .01$.

To further understand the treatment group differences on these subscales, a Tukey post hoc analysis of multiple comparisons was conducted. For the Negative Affect, Social/Positive, Physical and Other Concerns, and Withdrawal and Urges subscales, the Outpatient Group scored higher on these subscales compared to the Inpatient and Drug Court Groups. The Drug Court Group was significantly higher than the Inpatient group on the Negative Affect, Social/Positive, and Physical and Other Concerns subscales. The Outpatient group was significantly higher than the Inpatient group on the Social/Positive and Physical and Other Concerns subscales. However, the Inpatient and Drug Court Groups did not significantly differ on these subscales. See Table 17 for the post hoc findings. The implications of these analyses are discussed in Chapter 5.

Based on the results of these statistical analyses, the second null hypothesis (that there would be no significant differences in the cognitive subscales between treatment programs) was rejected.

Table 17

Test of Multiple Comparisons for the AASE-C Subscale Scores by Treatment Groups

Dependent Variable	Treatment Groups		Mean Difference	Significance
Negative Affect	Inpatient	Outpatient	1.80	.063
		Drug Court	3.26	.000
	Outpatient	Inpatient	-1.80	.063
		Drug Court	1.46	.149
	Drug Court	Inpatient	-3.26	.000
		Outpatient	-1.46	.149
Social Positive	Inpatient	Outpatient	4.21	.000
		Drug Court	4.52	.000
	Outpatient	Inpatient	-4.21	.000
		Drug Court	.31	.919
	Drug Court	Inpatient	-4.52	.000
		Outpatient	-.31	.919
Physical/Other	Inpatient	Outpatient	2.95	.000
		Drug Court	4.19	.000
	Outpatient	Inpatient	-2.95	.000
		Drug Court	1.24	.208
	Drug Court	Inpatient	1.80	.063
		Outpatient	3.26	.000
Withdrawal & Urges	Inpatient	Outpatient	-1.80	.063
		Drug Court	1.46	.149
	Outpatient	Inpatient	-3.26	.000
		Drug Court	-1.46	.149
	Drug Court	Inpatient	4.21	.000
		Outpatient	4.52	.000

Research Question 4

What is the relationship of the SOCRATES components (Ambivalence, Recognition, and Taking Steps) with the cognitive subscales associated with substance use (decisional balance and coping self-efficacy)? To address the fourth research question, Pearson correlational analyses were conducted to identify any significant relationships across these variables of interest.

There are number of significant correlations between the SOCRATES components and the cognitive factors (see Table 18). The ADCQ Benefits subscale was significantly correlated with the SOCRATS R-TS component ($r = .591$; $p < .001$) and the SOCRATES A-R component ($r = .315$; $p < .001$). In contrast, the ADCQ Cost subscale was significantly correlated with the SOCRATES D component ($r = .227$; $p < .001$). The AASE-T Social/Positive subscale was significantly correlated with the SOCRATES D component ($r = -.167$, $p < .001$); the AASE-T Negative Affect subscale was significantly correlated with the SOCRATES R-TS component ($r = .140$, $p < .05$); and the AASE-T Physical/ Other Concerns Subscale was significantly correlated with the SOCRATES A-R component ($r = .127$, $p < .05$). In addition, the AASE-T Withdrawal and Urges Subscale were significantly correlated with both the SOCRATES R-TS component ($r = .132$, $p < .05$) and the SOCRATES D component ($r = -.213$, $p < .001$). The AASE-C Social/Positive subscale was significantly correlated with the SOCRATES R-TS component ($r = .237$, $p < .001$) and the AASE-C Negative Affect subscale was significantly correlated with the SOCRATES D component ($r = .216$, $p < .001$). The third null hypothesis (there will be no significant relationship between SOCRATES factors and the cognitive factors) was rejected.

Table 18

Correlation Matrix of the SOCRATES Components and Cognitive Factors ($N = 244$)

Cognitive Factors	SOCRATES Components		
	R-TS	A-R	D
ADCQ (Cost Subscale)	.092	.052	-.227 **
ADCQ (Benefits Subscale)	.591 **	.315 **	-.039
AASE-T (Social/Positive Subscale)	-.038	.119	-.167 **
AASE-T (Negative Affect Subscale)	.140 *	.011	-.117
AASE-T (Physical/Other Concerns Subscale)	.015	.127 *	-.101
AASE-T (Withdrawal and Urges Subscale)	.132 *	.078	-.213 **
AASE-C (Social/Positive Subscale)	.237 **	.010	.121
AASE-C (Negative Affect Subscale)	.086	.049	.216 **
AASE-C (Physical/Other Concerns Subscale)	.222 **	-.027	.192 **
AASE-C (Withdrawal and Urges Subscale)	.127 *	.030	.280 **

* $p < .05$
** $p < .001$

Summary

The component structure of the SOCRATES was extracted from this sample and compared the results with previous studies of the SOCRATES factor structure found in the literature (Miller & Tonigan, 1996). The SOCRATES components derived from this study were examined across three different treatment groups to explore between group differences. Cognitive factors associated with substance abuse were also examined across the same three treatment groups to explore between group differences. Finally, the relationship between the SOCRATES factors and the cognitive factors were explored. The results indicated a rejection of all four null hypotheses.

Here is a summary of the main findings. 1) A unique three-component solution to the SOCRATES was extracted from this sample: Recognition with Some Taking Steps, Ambivalence with Some Recognition, and Denial. 2) Significant treatment group differences were observed for the SOCRATES components when they were considered together. Follow-up univariate analyses and Tukey comparisons indicated that treatment group differences were noted for the Recognition with Some Taking Steps and the Denial components. 3) Significant treatment group differences were found for the cognitive factors when considered together. Follow-up univariate analyses and Tukey comparisons indicated that treatment group differences were noted for all cognitive factors: Cost of Change, Benefits of Change, Social/Positive, Negative Affect, Physical/Other Concerns, and Withdrawal and Urges. 4) SOCRATES components were significantly related to some cognitive factors, most notably some AASE-C subscales (Physical and Other Concerns factor and the Withdrawal and Urges, some AASE-T subscales (Withdrawal

and Urges subscale) and the ADCQ Benefits subscale. The implications of these findings are discussed in Chapter 5.

CHAPTER 5

DISCUSSION

Introduction

This chapter provides an overview of the study, identifies the statistical findings and interprets the results, and draws some conclusions. The implications of the statistical findings and interpretation of the results are discussed and recommendations for future research are suggested.

This study examined the SOCRATES (a measure of readiness to change) component structure from this sample. The SOCRATES components and the cognitive factors of self-efficacy beliefs (the temptation self-efficacy subscales and confidence self-efficacy subscales) and decisional balance (benefits subscale and costs subscales) were examined across three treatment groups: Inpatient, Intensive Outpatient, and Mandated Drug Court. Last, the relationship between the cognitive factors and the SOCRATES was explored.

One of the purposes of this research study was to examine the utility of the SOCRATES as an instrument for measuring stages of change readiness across different treatment groups. Of equal interest were the differences across treatment groups on the cognitive factors and their subscales. Additionally, this research was concerned with the main effect between the SOCRATES components and the cognitive factors and the and

interaction effect between the SOCRATES components and the subscales of the cognitive factors across the different treatment groups

Findings

SOCRATES

The Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES) was specifically designed to measure problem drinking and was utilized in Project MATCH ($N = 952$ and $N = 774$; Project MATCH Research Group, 1997). The general purpose for developing such an instrument was to "match" individuals to specific treatment based upon the individual's change state, as opposed to providing a "one size fits all" treatment for everybody. The nineteen-item SOCRATES was also designed to identify the presence or absence of specific insights or cognitions ("I am an alcoholic," or "I have a drinking problem.") with scores for each item that ranged from 1 (Strongly Disagree) to 5 (Strongly Agree). Consequently, low scores indicate disagreement [Precontemplation (Prochaska & Diclemente, 1992), Contemplation (Isenhart, 1994), Ambivalence (Ferrell, 1999; Miller & Tonigan, 1996)] while high scores indicate agreement on each of the nineteen items. [Taking Steps (Miller & Tonigan, 1996; Prochaska & Diclemente, 1992), Action (Ferrell, 1999; Isenhart, 1994)].

Both the Isenhart (1994) study and the Ferrell (1999) study used the forty-item SOCRATES. Isenhart (1994) extracted three factors (Contemplation, Determination, and Action) and Ferrell (1999) initially extracted ten factors; however, only three factors were interpretatively useful [Action (26 % of the total variance), Awareness (8.1 % of the total variance), and Ambivalence 6.6 % of the total variance)]. The three factors from the

Isenhart (1994) study accounted for 47 % of the total variance while the three factors from the Ferrell (1999) study accounted for 41 % of the total variance. The most current version of the SOCRATES (the 19-item SOCRATES 8A; Miller & Tonigan, 1996) provided three factors: Ambivalence (items 2, 6, 11, and 16), Recognition (items 1, 3, 7, 10, 12, 15, and 17), and Taking Steps (4, 5, 8, 9, 13, 14, 18, and 19). Their three-factor solution accounted for 44 % of the total variance. These previous studies of the SOCRATES factor structure (Ferrell, 1999; Isenhart, 1994; Miller & Tonigan, 1996) were fairly consistent in regards to their factors and the items that comprised them. The Miller & Tonigan (1996) study utilized the SOCRATES as a "treatment matching" instrument, whereas both the Isenhart (1994) and Ferrell (1996) study were interested in an analysis of the SOCRATES factors and utilized a single group of participants (i.e., veterans seeking outpatient substance abuse treatment).

In contrast to the other studies, this study identified three components that were somewhat different and extracted these components from a population where the participants were already enrolled into one of three different treatment groups. Of the three components extracted, two of them appear to be an amalgamation of SOCRATES factors found in the Miller and Tonigan (1996) study: Recognition with Some Taking Steps, and Ambivalence with Some Recognition. The third component extracted (Denial) is seen as unique to this instrument and has not been previously identified in any studies on the SOCRATES. In addition, this study was concerned with the component structure of the SOCRATES across three different treatment groups in which the participants were already "matched." Although the sample size for this study was moderate ($N = 244$), the sample size for each treatment group ($n = 78$, $n = 81$, $n = 85$) was not adequate to run a

principle component analysis for each treatment group (which required a minimum *n* of 95 per treatment group). However, significant treatment group differences were noted for the three SOCRATES components when considered together. Follow-up analyses revealed that the Recognition with Some Taking Steps component primarily accounted for that finding. The Recognition with Some Taking Steps component was significantly different across the treatment groups: The Inpatient treatment group had the highest scores, followed by the Intensive Outpatient treatment group, and then the Mandated Drug Court treatment group. The Denial component was also significant between the Inpatient treatment group and the Intensive Outpatient treatment group. While the Mandated Drug Court and Inpatient treatment groups, and the Mandated Drug Court and Outpatient treatment groups did not significantly differ on the Denial component, the participants in Intensive Outpatient treatment group scored significantly higher on Denial than the patients in the Inpatient treatment group. That is, the Inpatient treatment group had more denial than the Intensive Outpatient treatment group. This is both an interesting and unexpected result and deserves further inquiry.

In the interpretation of the SOCRATES components, the presence of the Denial component was most probably the result of the scores from the participants in the Mandated Drug Court treatment group. It appears that there may also be an element of denial in these other two groups as well. The Denial component scores were lowest (i.e., more denial) in the Drug Court group, followed by the Outpatient group, and then the Inpatient group. This makes intuitive sense and the issue of denial as a construct (or cognitive process) has not been raised in either the TTM, or the SOCRATES. This

becomes more obvious when looking at the composition (demographics and descriptive statistics on the SOCRATES components) of the different treatment groups.

The Mandated Drug Court treatment group was comprised of eighty men (94 %) and 5 women (6 %). The majority of the participants from this treatment group were single (42 %), between the ages of thirty and forty-one (49 %), with some high school but no high school diploma (34 %), and earned between ten and twenty thousand dollars per year (27 %). The ethnic/racial composition was very even (Hispanic at 34 %, Caucasian at 32 %, and African American at 27 %) but not proportionately representative of the general population from the areas surveyed. In comparing treatment group demographics, the Mandated Drug Court treatment group appears to be significantly more heterogeneous than the other two treatment groups. The mean scores on the Mandated Drug Court treatment group were lower on each of the SOCRATES subscales. The variance (i.e., within group differences) for the Mandated Drug Court treatment group is substantially higher for each SOCRATES component than the other two treatment groups.

The utilization of the SOCRATES as a measure of stages of change or as a measure of motivation to change also carries an inherent risk in generalization and interpretation due to possible methodological problems in the structure of the SOCRATES. Additionally, since the component structure of the SOCRATES extracted in this study accounted for a large variance (73 %) and the Recognition with Some Taking Steps and Ambivalence with Some Recognition components had significant overlap in item content (cross-loading), the interpretation of the components (e.g., component naming and extrapolation back to the underlying theoretical construct) became more

difficult and increased the likelihood of a Type I error. It could be argued that the results indicate a univariate component structure since the first component accounted for a large amount of variance and comprised fifteen of the nineteen SOCRATES items; however, doing so appears atheoretical in light of the TTM underpinnings that shaped the SOCRATES as an instrument to measure stages of change along a continuum. Also, the extraction of the Denial component as a unique result not seen before in the literature would be overlooked. Since a significant difference was found between the treatment groups on the SOCRATES components, there appears to be additional information that helps explain both the three-component solution and the inclusion of the third component from a practical perspective.

Conversely, the Inpatient treatment group had the highest mean score on the SOCRATES Recognition with Some Taking Steps component, which is an amalgamation of many attributes seen in recovery (i.e., recognition of a problem, a desire to change, and taking steps to change) and also meets the requirements put forth by Dean (1958). This group had the smallest variance of all the SOCRATES component scores and is seen as the group most likely to be homogeneous. However, two Denial component items were also significant in this group of participants. It appears that denial is a component that transcends treatment groups and elements of it can be found in any participant from any treatment group. Regardless of the reason for its loading two items on the Recognition with Some Taking Steps component, its presence helps solidify its inclusion as a SOCRATES component and as a cognitive factor that deserves further study.

In summary, the Recognition with Some Taking Steps component was highest in the Inpatient group, followed by the Intensive Outpatient group, and then the Mandated

Drug Court group. The Denial component was highest in the Mandated Drug Court treatment group, followed by the Intensive Outpatient treatment group and then the Inpatient treatment group. No significant differences were found on the Ambivalence with Some Recognition component across these treatment groups. This information provides some insight when the items that comprise the significantly different components are examined. All of the Denial component items have to do with the acknowledgement of a problem. As stated earlier, Dean (1958) asserts that therapy begins with the meeting of two requirements: admission of a problem and a desire to change. Active (as opposed to passive) change can not commence unless something is acknowledge that is to be changed. Of the three treatment groups, the Mandated Drug Court treatment group has the highest level (lowest scores) of the Denial component. It is in this group that the highest level of variance (Table 6) occurs for each SOCRATES component and is the group most likely to be heterogeneous and the most likely to have a preponderance of participants in denial.

Cognitive Factors

Another purpose of this study was to examine cognitive factors that have been considered to be associated with both addiction and change states: decisional balance and self-efficacy beliefs. Significant treatment group differences (Inpatient vs. Outpatient vs. Drug Court) were noted on the cognitive factors in this study: the Cost and Benefit subscales of the Alcohol and Drug Consequence Questionnaire and on the four factors of the Alcohol Abstinence Self-Efficacy Scale (i.e., Negative Affect, Social/Positive,

Physical and Other Concerns, and Withdrawal and Urges) of both the Temptation and Confidence instruments.

In examining the results of the Alcohol and Drug Consequence Questionnaire analysis, it was interesting to note that the Mandated Drug Court treatment group saw more cost (the lower the score, the higher the cost) and less benefit (the higher the score the higher the benefits) in changing behaviors associated with problem drinking compared to the Inpatient and Intensive Outpatient treatment groups. It can be argued that some form of a cost-benefit analysis is implemented in the decision-making process to change substance use patterns and to maintain sobriety. It seems likely that the participants in the Mandated Drug Court treatment group were not as likely to want to change their drinking behaviors as those participants in the other two groups. There can be many reasons for this, including overt resistance to authority, denial of a drinking problem, or the absence of a drinking problem. In contrast, the Inpatient and the Intensive Outpatient treatment groups saw more benefits and less cost than the Mandated Drug Court treatment group. Clients in these groups may be more likely to focus on both the costs and benefits of changing drinking habits given the possibility that their treatment may have been more voluntary than clients in the drug court group—since their treatment was probably not court-mandated.

In examining the coping with the temptation to drink (AASE-T) scale, five significant relations were found. Both the Social/Positive and Withdrawal and Urges factors were inversely correlated with the SOCRATES Denial component. That is, participants who were characterized by social drinking situations and the use of alcohol to enhance positive states (Social/Positive) or participants with higher levels of

withdrawal, cravings, and willpower testing (Withdrawal and Urges) were more likely to be in the Denial stage of change readiness. Participants with lower levels of intrapersonal and/or interpersonal negative states (Negative Affect) and participants with lower levels of withdrawal, cravings, and willpower testing (Withdrawal and Urges) were more likely to be in the Recognition with Some Taking Steps stage of change readiness. In addition, higher scores on the Alcohol Abstinence Self Efficacy-Temptation Physical and Other Concerns subscale (hallmarked by physical discomfort or pain, concerns about others, and drinking dreams) indicate that participants were more likely to be in the Ambivalence with Some Taking Steps stage of change readiness.

In examining the confidence in not drinking (AASE-C) scale, six significant relationships were found. Higher scores on the Alcohol Abstinence Self-efficacy Negative Affect, Social/Positive, and Withdrawal and Urges subscales are related to the SOCRATES Denial component. That is, the higher level of confidence in not drinking was associated with the Denial stage of change readiness. One possible interpretation of this finding is that people with higher levels of denial may be overconfident in their perceived ability not to drink whereas people with lower levels of denial may have a more realistic outlook in their confidence to abstain. This makes intuitive sense in that there are myriad pitfalls to maintaining abstinence that will become obvious to individuals as they progresses in recovery (lower confidence scores). Conversely, individuals in the denial stage of change readiness may not be aware of how powerful chemical addiction in relation to their own willpower (higher confidence scores). The other three significant relationships fall into the SOCRATES Recognition with Some Taking Steps component. It would be expected to find higher levels of confidence in not

drinking from participants who are in the Recognition with Some Taking Steps stage of change readiness. People who recognized their drinking problems and are willing to take steps to change their drinking were likely to feel confident in their ability to abstain.

It appears that the Intensive Outpatient treatment group had higher levels of coping with temptation than the other two groups and the Mandated Drug Court treatment group has the lowest level of coping with temptation. The lone exception to this appears to be the difference on the Social/Positive factor between the Inpatient treatment group and the other two groups. The most plausible explanation for this exception rests in the drinking relationships people have. If participants in the Drug Court group do not see themselves as having a problem, their position is supported by associating with other heavy or problem drinkers. Whereas individuals in the Intensive Outpatient treatment group have volunteered for treatment, they may not have established the necessary social support to establish and maintain abstinence since their previous associates may have been heavy or problem drinkers. In contrast, those individuals who were in the Inpatient treatment group have established relationships with other recovering people and are constantly receiving social reinforcement. This might be a function of the time spent per day in treatment. Typically twenty-four hours a day for the Inpatient treatment group, three to four hours per day for several days in a week for the Intensive Outpatient treatment group, and one and a half hours per day for two days in a week for the Mandated Drug Court treatment group.

Confidence in abstaining from alcohol was highest the inpatient group compared to the outpatient and drug court groups. It makes a great deal of sense that people would be more confident in abstaining from alcohol in an inpatient setting where the focus is on

physical detoxification from alcohol compared to outpatient treatment efforts where the focus is more on emotional coping. There are fewer obstacles to relapse in a controlled environment like an inpatient setting compared to an outpatient setting. The Inpatient group scored the highest, followed by the Outpatient group and then the Drug Court group. This data suggests that the depth of treatment (i.e., setting, duration, and intensity) might be related to confidence in not drinking. That is, the more intense and longer the treatment, the more confident one might be in not drinking. When viewed in this way, the element of denial as a SOCRATES component and as a substance abuse construct becomes clearer. Thus, participants who believed that their current drinking habits were not causing harm (Item 12) or serious problems (Item 10) also believed that they have managed their drinking behavior despite prior drinking excesses. When reviewing these findings within the context that these participants just entered one of three substance abuse treatment modalities, these beliefs appear to reflect an underestimation of the severity of their drinking problem and their ability to cope which appears to represent denial or "wishful thinking."

Relationship Between the SOCRATES Components and the Cognitive Factors

Significant relationships were noted between the SOCRATES components and the cognitive factors. In looking at the relationship between SOCRATES components (Recognition with Some Taking Steps, Ambivalence with Some Recognition, and Denial) and the Alcohol and Drug Consequence Questionnaire subscores (Cost and Benefits of change) an expected relationship emerged. Higher perceived costs to changing drinking behaviors were associated with more denial. Participants that perceived costs to changing

their drinking behaviors also deny that a problem exists or a problem existed previously, but no longer exists. Higher perceived benefits to changing drinking behaviors were associated with both the Recognition with Some Taking Steps and Ambivalence with Some Rcognition components. Participants that perceived benefits to changing their drinking behaviors also saw more recognition of a drinking problem and have made some effort to take steps to change their drinking behaviors. That is, the SOCRATES Denial component increased as the Alcohol and Drug Consequence Questionnaire Cost factor decreased and the SOCRATES Denial component decreased as the Alcohol and Drug Consequence Questionnaire Benefits increased. That is, the more one acknowledges the benefits of change, the lower the denial; the more one acknowledges the cost of change, the higher the denial. People who were willing to accept that their current drinking habits were causing harm or serious problems (less denial) were more likely to see the benefits of changing their substance use behavior (greater benefits compared to those higher in denial about their drinking habits). The costs of changing substance use behavior were more apparent to people who denied harmful or serious problems with their drinking compared to those with less denial.

The Temptation Self-Efficacy Social/Positive and Withdrawal and Urges subscales were negatively correlated with the SOCRATES Denial component. The Confidence Self-efficacy Social/Positive subscale was positively correlated with the SOCRATES Recognition with Some Taking Steps component. The Confidence Self-Efficacy Withdrawal and Urges subscale was positively correlated with the SOCRATES Denial component. Most interestingly, however, was the positive correlation between

Temptation Self-Efficacy Physical and Other Concerns subscale and the SOCRATES Recognition with Some Taking Steps and Denial component.

Treatment Groups

Interestingly, this study showed some significant differences across treatment groups on the SOCRATES and the cognitive factors. Higher levels of denial were found in the Mandated Drug Court treatment group, while higher levels of recognition and taking steps were found in the Inpatient treatment group. Participants in the Mandated Drug Court treatment group saw more cost of change and participants in the Inpatient treatment group saw more benefits of change. These are important findings; however, in a practical sense the more compelling argument comes from the results of the Alcohol Abstinence Self-efficacy – Temptation and the Alcohol Abstinence Self-efficacy – Confidence group scores. Self-efficacy beliefs (as a cognitive construct) are likely to influence behavioral change in a substance abusing population. This information, coupled with the information gained by the SOCRATES instrument, is helpful to clinicians in determining an appropriate treatment match. In a larger sense, neither happenstance, coincidence, nor environmental influences alone dictated the participants "choice" of treatment (participants were recruited after they elected a treatment program). Self-efficacy beliefs appear to play a pivotal role in this decision as well as influencing their beliefs in staying sober. For example, on all of the Alcohol Abstinence Self-efficacy – Confidence subscales, the Intensive Outpatient treatment group scored the highest, followed by the Inpatient treatment group and then the Mandated Drug Court treatment group. The Intensive Outpatient treatment group offers the benefit of conventional

inpatient therapy without the restrictions found in hospitals or residential settings. Participants in this group can continue to work and enjoy family life in their familiar surroundings while still participating in therapy. It would seem that these individuals have a higher level of confidence and have selected the treatment that meets their self-efficacy beliefs. In contrast, the drug court participants had a lower level of confidence self-efficacy and probably did not see any difficulty in continuing their drinking. Consequently, confidence in not drinking would be low in a population that has not determined that drinking is a problem (or that has determined that drinking is not a problem).

Conclusions

This study was designed to examine a sample of adults with alcohol problems with regard to their stages of change readiness, decisional balance processes, and self-efficacy beliefs across three different treatment settings/modalities. Based on the statistical findings within the parameters and limitations of this study, the following general conclusions are presented.

1. A unique three-component solution was extracted from the SOCRATES, which accounted for 73 % of the total variance
2. The SOCRATES components from this study are significantly different between the three treatment groups.
3. The ADCQ factors (Benefits of Change and Cost of Change) are significantly different between the three treatment groups.

4. The AASE Temptation subscale scores (Negative Affect, Social/Positive, Physical and Other Concerns, and Withdrawal and Urges) are significantly different between the three treatment groups.
5. The AASE Confidence subscale scores (Negative Affect, Social/Positive, Physical and Other Concerns, and Withdrawal and Urges) are significantly different between the three treatment groups
6. A majority of the cognitive factors (Decisional Balance and Coping Self-efficacy) examined in this study have a positive correlation with one or more of the SOCRATES components.

Limitations

In analyzing the instruments, procedures, data collection, and results, the lack of control for participants' prior drug and alcohol treatment seems to be an impediment for a more accurate interpretation of the findings. Prior treatment may have confounded the results and the absence of controls for this issue may affect the generalizability of the findings.

It is equally important to note that all instruments utilized in this study are self-report measures and carry with them some inherent constraints and/or limitations. Anecdotally, for example, many individuals seeking recovery from chemical dependency may embellish the symptoms of their addiction as a constant reminder to aid in relapse prevention. Conversely, many individuals that do not recognize an alcohol problem when an alcohol problem might exist often tend to minimize the symptoms of addiction. In addition, the results may have been skewed by a variety of elements attributed to human

error (e.g., misunderstanding or misinterpretation, clarity of cognitive processing, apathy in completing the questionnaires, etc.), setting, and level of intoxication (if any).

Other limitations include the absence of controls for the influence of additional or supplemental treatment through attendance at Alcoholics Anonymous (AA) meetings or other similar self-help or group-help programs. The influence of AA can be very powerful and participants' attendance or membership in a 12-step program might confound the results, especially for those participants in the Mandated Drug Court Group (e.g., a participant in the Drug Court with a high level of AA attendance could be further along the stage of change continuum than would be expected).

Implications for Practice

Historically, individuals identified as having an alcohol or drug problem, (whether categorized as problem use, abuse, dependence, alcoholism, or addiction) have received a myriad of negative public opinions and characterological attributes. Some segments of society view alcoholism and drug addiction as a moral deficit, while other segments view it as a lack of willpower and personal discipline. The medical community has vacillated between grouping addictive disorders as either biological phenomena (tantamount to an allergy) or a disease process (similar to diabetes). There is a significant association between drug and alcohol use, and crime. As stated in previous chapters, the legal and criminal justice systems view the behaviors associated with addiction (which includes the mere possession of a substance) as criminal and this system is given wide latitude in mandating severe penalties and punishment. Now, the addict or the alcoholic incur an additional label as a "criminal." In fact, the majority of individuals who are presently

incarcerated in city and county jails, and state and Federal prisons, present with a significant drug and/or alcohol history. Although many subcultures within our society endorse the "recreational" use of illicit drugs, society as a whole has dichotomized this issue in moral terms; non-users are good and users are bad. At the same time, the use of alcohol is glamorized in every form of media, and endorsed by a multitude of celebrities, athletes, artists, and musicians. These externalized perceptions and social concepts have muddled an already complex and often irritating issue: What to do with the addict and the alcoholic?

The overwhelming response has been to provide addictions treatment, either in unison with other treatments for co-morbid disorders, as supplemental treatment, and maybe during or after an individual's incarceration. Many factions of our society disagree with treatment for a variety of reasons. It is believed by some that addictions are self-inflicted wounds and that our society should not tackle the financial cost in treating such an injury. Adding to this argument is the Darwinian-like stance of excluding certain ethnic, cultural, or socioeconomic groups from receiving treatment as "they" could not survive or perpetuate without it. These points of view have also challenged the effectiveness of treatment. Is the money spent on treatment wasted? Does treatment even work?

During the last twenty years, treatment of addictive disorders has undergone serious scrutiny by the agencies that have paid for the treatment: the health insurance companies. Although changes from an indemnity insurance program to a managed care system, have forced medical and psychological providers to utilize empirically validated treatment measures (which is not a totally undesirable event), the cost containment

practices have also hampered accessibility and availability of treatment programs, increased the cost to the consumer, and regimented treatment with outcome studies (again, not necessarily undesirable results). Unfortunately, the changes in the health care delivery system have placed additional obstacles on a population that already is encumbered with a multitude of internal conflicts and social pressures.

In light of the differing social attitudes related to alcoholism, the alcoholic, and the treatment of individuals with alcohol problems, three treatment groups were chosen for this study. As stated in chapter two, the criterion for treatment group inclusion in this study rested in their availability within the community, their potential relevance to matching, the evidence for their clinical efficacy, their distinctiveness from each other, and their application within existing treatment systems. Since treatment programs differ in setting, duration, modality, and the inclusion or exclusion of self-help group augmentation, it became important to gain an understanding of differences between these groups.

There are literally thousands of published articles, manuscripts, dissertations, and theses that have empirically studied the internal processes that embody addictive disorders. Topics covered in these works include many global issues, such as problem recognition, denial, resistance, and open hostility towards treatment. More individually specific issues, such as co-morbid personality disorders or depression and anxiety have been addressed. More recently, researchers have shifted the focus of treatment from a "one size fits all" mentality to a more compassionate stance of treatment matching.

Treatment matching is not a new idea, nor is it a panacea for success. Prochaska and DiClemente (1982) and Prochaska (1984) identified a system of psychotherapy that

transcended conventional thought and a variety unified theoretical perspectives. This approach was termed the Transtheoretical Therapy Model or TTM. Prochaska (1984) asserted that intentional change or therapy-assisted change is only one form of change that has motivated or moved individuals. Developmental changes and environmental influences were recognized as prominent catalyst in motivating individuals towards behavioral change. Prochaska (1984) determined that developmental or environmental changes alone are not sufficient to maintain a particular change and that a cognitive and affective assimilation of the factors that prompted intentional change is a necessary requirement to maintain this change. If this assimilation has not occurred, individuals could possibly feel coerced into making change and revert back to previous behaviors once the developmental milestone is achieved or the environmental influence is removed or modified. Consequently, this perspective reiterates the argument stated by Dean (1958), that psychotherapy should begin with the meeting of two requirements: admission of a problem and a desire to change.

This study took hold of these ideas and concepts. In considering a workable structure for implementing this research, the TTM provided an empirically grounded foundation to research individual motivation to change, related to the cognitive process involved in making changes. From the TTM, Miller and Tonigan (1996) extrapolated a measure to assess placement on the stages of change continuum for individuals with alcohol problems. This measure (SOCRATES) underwent several revisions and eventually was accepted as an empirically valid measure in the National Institute of Alcohol Abuse and Alcoholism's Project MATCH research ($N = 1,726$). Since the SOCRATES was derived from the TTM, it would provide the requisite stability as a

measure while also grounding this investigation to the transtheoretical theory originally proposed by Prochaska (1982, 1984).

One of the more interesting result gleaned from this study involves the positive correlation between the SOCRATES components and the ADCQ factors. In considering the implications of these relationships, it might be helpful to review an old cliché: it is easier to catch flies with honey than with vinegar. It seems as though extolling the benefits of change is far more beneficial to the participant, as opposed to reminding them of the cost of change. In other words, shifting the participants' attitude to a gain as opposed to a loss may be more helpful. In many instances, (especially in the earlier days of drug and alcohol treatment when the zeitgeist insisted upon "breaking" the client's defenses), benefits were considered "good" and costs were considered "bad." Unfortunately, the use of such moralistic attitudes and judgmental labels tended to victimize the individual seeking help, place the practitioner in an ethical dilemma, and solidify the construct that addictions were a moral illness. The more recent trend in addictions treatment extols the collaboration between client and therapist, recognizes the vulnerability, pain, and suffering of the client, and endorses Rogerian thought.

The positive correlation between the SOCRATES Recognition with Some Taking Steps components with three of the four factors of the AASE-C was also quite interesting. It appears that the more confidence an individual becomes (in not drinking), they will be further along the stage of change readiness continuum (e.g., there are more individuals with higher AASE-C scores in the Recognition with Some Taking Steps stage of change readiness, than in the Recognition with some Ambivalence or Denial stage of change readiness). If this is true, practitioners can help the client obtain higher levels of

confidence by including confidence-building goals and objectives into the client's treatment plan. The caveat to this might be the differentiation between confidence by successful treatment vs. confidence as a function of denial.

Practitioners often struggle with a myriad of issues when working with individuals with alcohol or drug problems (e.g., indigenous problems such as co-morbid diagnoses, to external demands of time, cost, and working through the third party insurance company's constraints while simultaneously satisfying their requirements). Identifying more efficient and effective approaches (extolling the benefits of change and reinforcing confidence self-efficacy) and matching client to treatment program, setting, or modality, may provide some needed assistance to both the client and the practitioner.

Recommendations for Future Research

Although the SOCRATES did not provide the same component structure in this study as it had in previous studies, further use of this questionnaire among differing populations would be helpful to assess the stability of its component structure. In addition to the SOCRATES, practitioners may be guided by the results generated by the ADCQ and the AASE in placing clients who require some form of drug and/or alcohol treatment.

Further investigation on the findings from this study is also warranted. How helpful would it be to the client to reinforce confidence self-efficacy? Does confidence self-efficacy relate to obtaining or maintaining sobriety? Does the client's conclusion on decisional balance provide enough impetus for change? How well does reinforcing the benefits of change work to prevent relapse?

Further research exploring the factor structure of the SOCRATES within and across specific treatment modalities will help researchers and clinicians understand the extent to which the SOCRATES components identified will generalize to substance abuse patients across a variety of treatment programs.

How consistent are the SOCRATES components across different treatment groups? How consistent are the cognitive factors across treatment groups? These are questions for future research; however, this research lays some foundation work on treatment group difference on these instruments. In the sample from this study and from the other studies (Ferrell, 1999; Isenhart, 1994; and Miller & Tonigan, 1996), are the treatment groups more heterogeneous or more homogeneous? From this study, it appears that both the Inpatient and Intensive Outpatient treatment groups are homogeneous, while the Mandated Drug Court treatment group is significantly more heterogeneous than the others. This study suggests that there are significant between group differences and also identifies the high probability of some within group differences, especially within the Mandated Drug Court treatment group.

Summary

Almost twenty years ago, Prochaska and DiClemente (1982) opened the door to a higher order of therapy. Since that time, very few studies have examined the many facets of the TTM or, its derivative instrument SOCRATES. Although the application of the TTM is limitless, it seems as though researchers are experiencing some hesitancy in extrapolating the theoretical constructs into other areas of inquiry.

Although this study examined group scores on several questionnaires in three different treatment groups, the purpose of this study was to (1) explore the validity of the SOCRATES components, (2) discern treatment group differences on the SOCRATES components, (3) explore treatment group differences in coping self-efficacy and decisional balance, (4) and explore the relationships between the identified cognitive factors and SOCRATES components. Many of the findings are consistent to what was expected.

In analyzing the SOCRATES ($N = 244$), a three-component solution was expected and found; however, these components were unique to the literature. Possible reasons for this disparity may be found in this study's inclusion of a court-ordered (the mandatory drug court group; $N = 85$) population, or the absence of treatment matching (participants were not "matched" to any treatment group).

As expected, the between-group scores on the SOCRATES components were significantly different across the three treatment groups. Both the Recognition with Some Taking Steps and the Denial components differed significantly across the three treatment groups; whereas the Ambivalence with Some Recognition component [$F(2, 241) = 3.01$; $p <. 051$] did not significantly differ. The differences found in the R-TS component between the groups have practical significance in addition to its statistical power. In chapter one, Recognition was defined as awareness that one has an alcohol problem and a willingness to take action. Since the treatment groups are clearly different it was expected that the group scores would likewise be different. Overall, there was little difference between Inpatient and Intensive Outpatient treatment programs (i.e., the vast majority of relationships were not significant between these two groups). However, the majority of

the between-group differences found in this study involved the Mandated Drug Court group. To date, no research has utilized the SOCRATES, the ADCQ, or the AASE with a Mandated Drug Court population. As hypothesized earlier, this population might be comprised of individuals who are outside the stage of change continuum

As discussed extensively in Chapter Two, outcome studies have consistently shown high recidivism rates for individuals who have received substance abuse treatment. Clearly, the practical significance of this result lies in the perceived benefit of treatment matching. As stated earlier, Isenhart (1994) asserts that having a client who is in the precontemplation stage of change participate in treatment that demands total abstinence is most probably inappropriate.

The necessity for treatment matching is very clear. There are measurements and instruments available to practitioners that will assist in guiding appropriate decisions in treating individuals who have an alcohol or drug problem. The SOCRATES can easily provide information on current stage of change readiness, while the ADCQ can provide both practitioner and patient with insight into the cost and benefits of changing problem drinking and associated behaviors. The AASE provides insight into self-efficacy beliefs. In a combined use of these measures, both practitioner and patient can collaborate and determine the best course of action and "match" patient to treatment based upon stage of change readiness change, decisional balance, and self-efficacy beliefs. These measures do not provide a determination of appropriate matching. They provide important information and insight to help clinicians' appropriately guide their clients to make the best choices from treatment programs that are available.

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APPENDICES

APPENDIX A

OKLAHOMA STATE UNIVERSITY INSTITUTIONAL REVIEW BOARD: HUMAN SUBJECTS REVIEW

OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD

Date: March 13, 2000 IRB #: ED-00-228

Proposal Title: "SELF-EFFICACY AND DECISIONAL BALANCE: RELATIONSHIP OF COGNITIVE FACTORS AND STAGES OF CHANGS READINESS IN CLIENTS WITH ALCOHOL PROBLEMS"

Principal Investigator(s): Carrie Winterowd
Kevin Kells

Reviewed and Processed as: Exempt

Approval Status Recommended by Reviewer(s): Approved

Signature:

Carol Olson, Director of University Research Compliance

March 13, 2000
Date

Approvals are valid for one calendar year, after which time a request for continuation must be submitted. Any modification to the research project approved by the IRB must be submitted for approval with the advisor's sign The IRB office MUST be notified in writing when a project is complete. Approved projects are subject to mon by the IRB. Expedited and exempt projects may be reviewed by the full Institutional Review Board.

Corrected Title: "AN EXAMINATION OF THE COMPONENT STRUCTURE OF THE SOCRATES AND RELATIONSHIPS WITH COGNITIVE FACTORS ACROSS THREE TREATMENT GROUPS."

APPENDIX B

DEMOGRAPHIC DATA SHEET

Demographic Data Sheet

The following information is requested to provide some information about you. Please do not write your name on this form and answer each question that best describes you.

1. **Age:** _____
2. **Gender:**

   ❑ Female ❑ Male

3. **Marital Status:** (check what currently applies)

   a) ❑ Single
   b) ❑ Married/Partnered/Common Law
   c) ❑ Separated/ Divorced
   d) ❑ Widowed

4. **Racial/Ethnic Identity:** (check all that may apply)

   a) ❑ African American/Black
   b) ❑ American Indian/Native American
   c) ❑ Asian/Asian American
   d) ❑ Caucasian/White
   e) ❑ Hispanic/Latino(a)
   f) ❑ Other: (please list)

   _____

5. **Highest level of education obtained:** (check the highest level that applies)

   a) ❑ Some High School
   b) ❑ High School Diploma
   c) ❑ Some College
   d) ❑ Associates Degree
   e) ❑ Bachelors Degree
   f) ❑ Graduate Degree
   g) ❑ Professional Degree
   h) ❑ Technical or Trade

6. **Employed:**

   ❑ Yes ❑ No

7. **Occupation:**

   _____

8. **Annual Income:** (check the current level that applies)

   a) ❑ < $ 10,000 per year
   b) ❑ $ 10,000 to $ 20,000 per year
   c) ❑ $ 20,000 to $ 30,000 per year
   d) ❑ $ 30,000 to $ 40,000 per year
   e) ❑ $ 40,000 to $ 50,000 per year
   f) ❑ $ 50,000 to $ 60,000 per year
   g) ❑ $ 60,000 to $ 70,000 per year
   h) ❑ > $ 70,000 per year

APPENDIX C

PERSONAL DRINKING QUESTIONNAIRE (SOCRATES 8A)

Personal Drinking Questionnaire (SOCRATES 8A)

Please read the following statement carefully. Each statement below describes a way that you might (or might not) feel about your drinking. For each statement, circle one number on the scale at the right, to indicate how much you agree or disagree with it right now. Please circle one and only one number for each statement.

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
	NO	No	?	Yes	YES
1. I really want to make some changes in my drinking.	1	2	3	4	5
2. Sometimes I wonder if I am an alcoholic.	1	2	3	4	5
3. If I don't change my drinking soon, my problems are going to get worse.	1	2	3	4	5
4. I have already started making some changes in my drinking.	1	2	3	4	5
5. I was drinking too much at one time, but I managed to change my drinking.	1	2	3	4	5
6. Sometimes I wonder if my drinking is hurting other people.	1	2	3	4	5
7. I am a problem drinker.	1	2	3	4	5
8. I'm not just thinking about changing my drinking, I am already doing something about it.	1	2	3	4	5
9. I have already changed my drinking, and I am looking for ways to keep from slipping back into my old pattern.	1	2	3	4	5
10. I have serious problems with drinking.	1	2	3	4	5
11. Sometimes I wonder if I am in control of my drinking.	1	2	3	4	5
12. My drinking is causing a lot of harm.	1	2	3	4	5
13. I am actively doing things now to cut down or stop drinking.	1	2	3	4	5
14. I want help to keep from going back to the drinking problems that I had before.	1	2	3	4	5
15. I know that I have a drinking problem.	1	2	3	4	5
16. There are times when I wonder if I drink too much.	1	2	3	4	5
17. I am an alcoholic.	1	2	3	4	5
18. I am working hard to change my drinking.	1	2	3	4	5
19. I have made some changes in my drinking, and I want some help to keep from going back to the way I used to drink.	1	2	3	4	5

APPENDIX D

THE ALCOHOL AND DRUG CONSEQUENCE QUESTIONNAIRE (ADCQ)

Alcohol and Drug Consequence Questionnaire (ADCQ)

Please read the following statement carefully. Listed below are a number of situations that involve the cost and benefits of changing drug or alcohol use. Please circle one and only one number for each statement using the rating scale.

	Does Not Apply	Not Very Important	Slightly Important	Moderately Important	Very Important	Extremely Important
1. I will feel better physically.	0	1	2	3	4	5
2. I will have difficulty relaxing.	0	1	2	3	4	5
3. I will change a lifestyle I enjoy.	0	1	2	3	4	5
4. I will have fewer problems with my family.	0	1	2	3	4	5
5. I will feel frustrated and anxious.	0	1	2	3	4	5
6. I will have more money to do other things with.	0	1	2	3	4	5
7. I will be more active and alert.	0	1	2	3	4	5
8. I will get depressed.	0	1	2	3	4	5
9. I will have fewer problems with friends.	0	1	2	3	4	5
10. I will feel better about myself.	0	1	2	3	4	5
11. I will regain some self-respect.	0	1	2	3	4	5
12. I will accomplish more of the things that I want to get done.	0	1	2	3	4	5
13. I will have a better relationship with my family.	0	1	2	3	4	5
14. I will have difficulty coping with my problems.	0	1	2	3	4	5
15. I will feel withdrawals or cravings.	0	1	2	3	4	5
16. I will have too much time on my hands.	0	1	2	3	4	5
17. I will have difficulty not drinking or using drugs.	0	1	2	3	4	5
18. My health will improve.	0	1	2	3	4	5
19. I will live longer.	0	1	2	3	4	5
20. I will be more in control of my life.	0	1	2	3	4	5
21. I will feel bored.	0	1	2	3	4	5
22. I will be irritable.	0	1	2	3	4	5
23. I will be more financially stable.	0	1	2	3	4	5
24. I will miss the taste.	0	1	2	3	4	5
25. I will have difficulty having a good time.	0	1	2	3	4	5
26. I will have a better relationship with my friends.	0	1	2	3	4	5
27. I will feel stressed out.	0	1	2	3	4	5
28. I will save more money.	0	1	2	3	4	5
29. I will miss the feeling of being high.	0	1	2	3	4	5

APPENDIX E

THE ALCOHOL ABSTINENCE SELF-EFFICACY SCALE: TEMPTATION (AASE-T)

The Alcohol Abstinence Self-efficacy (Temptation) Scale (AASE-T)

Please read the following statement carefully. Listed below are a number of situations that lead some people to drink. We would like to know how ***tempted*** you might be to drink in each of these situations. Please circle one and only one number for each statement using the rating scale.

	Not at All Tempted	Not Very Tempted	Moderately Tempted	Very Tempted	Extremely Tempted
1. When I am in agony because of stopping or withdrawing from alcohol use.	1	2	3	4	5
2. When I have a headache.	1	2	3	4	5
3. When I am feeling depressed.	1	2	3	4	5
4. When I am on vacation and want to relax.	1	2	3	4	5
5. When I am concerned about someone.	1	2	3	4	5
6. When I am very worried.	1	2	3	4	5
7. When I have the urge to try just one drink to see what happens.	1	2	3	4	5
8. When I am being offered a drink in a social situation.	1	2	3	4	5
9. When I dream about taking a drink.	1	2	3	4	5
10. When I want to test my willpower over drinking.	1	2	3	4	5
11. When I am feeling a physical need or craving for alcohol.	1	2	3	4	5
12. When I am physically tired.	1	2	3	4	5
13. When I am experiencing some physical pain or injury.	1	2	3	4	5
14. When I feel like blowing up because of frustration.	1	2	3	4	5
15. When I see others drinking at a bar or at a party.	1	2	3	4	5
16. When I sense that everything is going wrong for me.	1	2	3	4	5
17. When people I used to drink with encourage me to drink.	1	2	3	4	5
18. When I am feeling angry inside.	1	2	3	4	5
19. When I experience an urge or impulse to take a drink that catches me unprepared.	1	2	3	4	5
20. When I am excited or celebrating with others.	1	2	3	4	5

APPENDIX F

THE ALCOHOL ABSTINENCE SELF-EFFICACY SCALE:

TEMPTATION (AASE-C)

The Alcohol Abstinence Self-efficacy (Confidence) Scale (AASE-C)

Please read the following statement carefully. Listed below are a number of situations that lead some people to drink. We would like to know how ***confident*** you are to not drink in each of these situations. Please circle one and only one answer for each statement using the rating scale.

	Not at All Confident	Not Very Confident	Moderately Confident	Very Confident	Extremely Confident
1. When I am in agony because of stopping or withdrawing from alcohol use.	1	2	3	4	5
2. When I have a headache.	1	2	3	4	5
3. When I am feeling depressed.	1	2	3	4	5
4. When I am on vacation and want to relax.	1	2	3	4	5
5. When I am concerned about someone.	1	2	3	4	5
6. When I am very worried.	1	2	3	4	5
7. When I have the urge to try just one drink to see what happens.	1	2	3	4	5
8. When I am being offered a drink in a social situation.	1	2	3	4	5
9. When I dream about taking a drink.	1	2	3	4	5
10. When I want to test my willpower over drinking.	1	2	3	4	5
11. When I am feeling a physical need or craving for alcohol.	1	2	3	4	5
12. When I am physically tired.	1	2	3	4	5
13. When I am experiencing some physical pain or injury.	1	2	3	4	5
14. When I feel like blowing up because of frustration.	1	2	3	4	5
15. When I see others drinking at a bar or at a party.	1	2	3	4	5
16. When I sense that everything is going wrong for me.	1	2	3	4	5
17. When people I used to drink with encourage me to drink.	1	2	3	4	5
18. When I am feeling angry inside.	1	2	3	4	5
19. When I experience an urge or impulse to take a drink that catches me unprepared.	1	2	3	4	5
20. When I am excited or celebrating with others.	1	2	3	4	5

APPENDIX G

ALCOHOLICS ANONYMOUS INVOLVEMENT SCALE (AAI)

Alcoholics Anonymous Involvement Scale

Directions: Please answer the following questions by circling the appropriate response or filling in the blank with an accurate number. In some instances you may need to make an "educated guess" in order to complete this questionnaire.

1. Have you ever attended an Alcoholics Anonymous meeting?	**YES**	**NO**
2. Have you attended an Alcoholics Anonymous meeting in the past year?	**YES**	**NO**
3. Have you ever considered yourself to be a member of Alcoholics Anonymous?	**YES**	**NO**
4. Have you ever attended 90 AA meetings in 90 days?	**YES**	**NO**
5. Have you ever celebrated an "AA" birthday?	**YES**	**NO**
6. Have you ever had an AA sponsor?	**YES**	**NO**
7. Have you ever been an AA sponsor?	**YES**	**NO**
8. Was your involvement in AA the result of your participation in formal treatment?	**YES**	**NO**
9. Has your involvement in AA continued past formal treatment?	**YES**	**NO**
10. What is the number of AA steps that you have worked?	_____	
11. What is the number of AA meetings that you attended in the past year?	_____	
12. What is the number of AA meetings that you attended in your lifetime?	_____	
13. Have you ever had a "spiritual awakening" from your involvement in AA?	**YES**	**NO**

APPENDIX H

FACILITATOR'S SCRIPT

FACILITATOR'S SCRIPT

You are invited to participate in a study to understand the decision-making styles and coping strategies used by people with alcohol problems. Participation in this study would involve completing five questionnaires, which will take no more than 30 minutes to complete. The findings from this study may help mental health professionals provide better services to clients with alcohol problems. In addition, you might gain an increased awareness of your coping strategies and your decision-making style related to alcohol use. There are no foreseeable risks involved in participating in this study. Your decision to participate in this study is completely voluntary, and you may choose to end your participation at anytime without penalty. Your responses will be kept anonymous and the staff here will not have access to your specific responses, but may be provided a summary of the general findings from all participants. Your name and any other identifying information will not be associated with the questionnaires or your responses. There is no connection between your participation in this study and the treatment you will receive at this facility. Your anonymity within this facility will be protected. If you choose not to participate in this study, no documentation indicating this will be placed in the agency file. Would you like to participate?

I have read this script to the client.

Signed: _____ Date: _____

APPENDIX I

INFORMED CONSENT FORMS

INFORMED CONSENT

The purpose of this study is to examine the decision-making styles and coping strategies among individuals seeking alcohol treatment. Participation in this study will involve answering five questionnaires, which should take no more than 30 minutes to compete. Benefits of your participation in this study could include an increased awareness of your coping strategies and your decision-making style related to your use of alcohol. There are no foreseeable risks involved in your participation in this study.

I am aware that my responses to the questionnaires will be kept anonymous, as my name and any other identifying information will not be associated with these responses. My decision to participate in this study is completely voluntary. You may choose to end your participation at any time without penalty. I also understand that if I feel any stress or anxiety as a result of participation in this study, I may consult with any of the researchers associated with this study, and I may ask questions related to this study.

I am aware that there is no connection between my participation in this study and the treatment I will receive at this facility. My anonymity within this facility will be protected and my responses will be kept confidential. If I choose not to participate in this study, no documentation indicating this will be placed in the agency file.

The American Psychological Association's ethical standards for research with human subjects will be followed in all stages of this study. I understand that if I have any questions about this study that are not satisfactorily answered, I may the following for assistance.

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Gay Clarkson
Department of Research
305 Whitehurst
Oklahoma State University
Stillwater, Oklahoma 74078
(405) 744-5700

By signing this form and completing this questionnaire, I indicate my informed consent to participate in this study.

Date: _____

Signed: _____

Witness: _____

VITA

Kevin Barry Kells

Candidate for the Degree of

Doctor of Philosophy

Thesis: AN EXAMINATION OF THE COMPONENT STRUCTURE OF THE SOCRATES AND RELATIONSHIPS WITH COGNITIVE FACTORS ACROSS THREE TREATMENT GROUPS

Major Field of Study: Educational Psychology

Biographical:

Personal Data: Born in Washington DC, March 6, 1958, the son of Col. Robert A. and Lillian T. Kells.

Education: Graduated from Wyomissing Area High School, Wyomissing, Pennsylvania, May 1976; received a Bachelor of Science Degree from the University of Maryland in 1991; received a Master of Human Relations degree from the University of Oklahoma in 1992. Completed requirements for the Doctor of Philosophy degree in the Applied Behavioral Studies in Education with specialization in Counseling Psychology at Oklahoma State University in August 2001.

Experience: Denver Health Medical Center and the Denver County Jail (Correctional/Forensic), American Psychological Association approved predoctoral internship from July 2000 to August 2001. Practicum experience included the L. E. Rader Center, Sand Springs, OK; the Osage Nation Counseling Center, Pawhuska, Oklahoma; and the Psychological Services Center, Oklahoma State University, Stillwater, Oklahoma.

Professional Memberships: American Psychological Association, Colorado Psychological Association, and the Prescribing Psychologist Register.