THE EFFECTIVENESS OF COGNITIVE BEHAVIORAL THERAPY FOR THE TREATMENT OF SUBSTANCE ABUSE IN COMPARISON TO OTHER MAJOR TREATMENTS IN THE FIELD

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ABSTRACT

THE EFFECTIVENESS OF COGNITIVE BEHAVIORAL THERAPY FOR THE TREATMENT OF SUBSTANCE ABUSE IN COMPARISON TO OTHER MAJOR TREATMENTS IN THE FIELD

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This literature review provides a general overview of the relative effectiveness of different treatment modalities that are available to therapists for the treatment of substance abuse. Some of these models include Cognitive Behavioral Therapy, Relapse Prevention, Mindfulness-Based Stress Reduction, Contingency Management, The 12-Step Approach, Motivational Interviewing, and Harm Reduction. While investigating the effectiveness of these treatment strategies, it was discovered that the conditions under which recovery from substance abuse are likely to occur involves several components. These concepts are common to nearly all of the evidenced-based strategies that were reviewed and include the development of coping and social skills. The promotion of self-awareness, self-efficacy, and interpersonal communication are common themes throughout the literature. This review provides meaningful data that supports the assumption that the application of evidenced-based treatment modalities positively impacts the lives of adult substance abusers and can be used effectively with a wide range of substance use disorders (Killuk, 2014). Cognitive Behavioral Therapy is currently the most widely used and researched treatment strategy. Treatments that help substance abusers gain awareness of the relationship between their thoughts, behaviors, and emotions tend to create desired outcomes. This literature review also explores the effectiveness of spirituality and religion as a part of

treatment. This dissertation is available in open access at AURA (https://aura.antioch.edu/) and OhioLINK ETD Center (https://etd.ohiolink.edu).

Keywords: Drug Addiction, Substance Use Disorder, Cognitive Behavioral Therapy, Evidenced-based Strategies, Relapse Prevention, Contingency Management, Motivational Interviewing, The 12-Step Program of AA and NA, Twelve-Step Facilitation, Literature Review

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This body of work is dedicated to those who continue to struggle with active addiction, have died from substance abuse, and continue to participate in recovery, and to the members of the twelve-step fellowship who continue to support me in my twelfth year of recovery.

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CHAPTER I: INTRODUCTION

Substance abuse is an epidemic that has a profound impact on society and negatively impacts the lives of millions of individuals worldwide. It also puts a significant strain on the healthcare system in the United States. According to Bartlett (2013), substance abuse costs employers and taxpayers an estimated $590 billion dollars annually in lost productivity and medical treatment. These financial costs are substantial, however, the negative impacts associated with substance abuse on individuals, families, and communities are much more acute.

The providers of both inpatient and outpatient drug treatment facilities are frequently called upon to provide quality care to individuals who suffer from substance abuse. White et al. (2002) found that, of those individuals who seek treatment, the majority of addicts relapse at some point during their recovery. According to McIntosh and McKeganey (2000), “a number of estimates suggest that rates of relapse among treated populations can be as high as 90%” (p. 79).

One treatment for substance abuse is Cognitive Behavioral Therapy (CBT), an intervention focused on changing unhealthy cognitive distortions (e.g., thoughts, beliefs, and attitudes) and behaviors, improving emotional regulation, and the development of personal coping strategies that mitigate current problems. CBT represents a combination of behavioral strategies that have been modified in order to arrest symptoms associated with various substances of abuse. Examples of these CBT related treatments include Relapse Prevention, Contingency Management, and Rational Emotive Behavioral Therapy.

The relationship between CBT and other drug treatment modalities has several implications which impact the way services are delivered. It is also important to understand *how* CBT and other forms of evidence-based practices impact the lives of substance abusers. This literature review examines scholarly research on substance abuse with the purpose of providing a

comparative review of a range of different treatment approaches and their relative effectiveness to one another. Now is an important time to study this topic because today there is a multiplicity of substance abuse treatment strategies available to clinicians. This inquiry has been driven by a need for a summary of the strategies explored in this review and their effectiveness. Included in this examination are stand-alone treatment modalities and treatments that combine methodologies. This review also explores the effectiveness of spirituality and religion as a part of treatment.

Background

It is a goal of this literature review to examine the relevant substance abuse treatment literature on Cognitive Behavioral Therapy (CBT), Relapse Prevention (RP), Motivational Interviewing (MI), The 12-Step Model (AA/NA), Twelve-Step Facilitation, Mindfulness-Based Stress Reduction (MBSR), Contingency Management (CM), and Harm Reduction (HR), and describe what was found. It is acknowledged that there are numerous other treatment strategies available to clinicians in addition to those explored in this review. Some examples of these strategies include Drug Counseling, Family, Group, and Psychodynamic Therapies. An investigation of the aforementioned treatment strategy examples is beyond the scope of this review. Many of the treatments considered in the current investigation have a very specific context from which the results are substantiated. These contexts include differences in sample size, method of analysis, theoretical perspectives, populations, drugs of abuse, and homogeneity of variances. Given these differences, drawing conclusions across articles can be difficult.

To gain a better perspective on this issue, an article entitled, "*Cognitive-behavioral treatment with adult substance users: A meta-analysis*," was reviewed. This article is an extremely useful reference point for describing what was learned in this review. Magill (2007)

noted that, “Meta-analysis, like all research endeavors, involves a number of decision points with corresponding implications on later validity of findings” (p. 22). In addition, “A number of potential moderating factors warrant clarification. Those of note include type of drug, type of comparison condition, mode of implementation, and potential matching characteristics” (Magill, 2007, p. 22). These findings parallel the difficulties encountered in this dissertation. They relate to the difficulty involved in comparing the findings of many different types of research. For example, some studies involve alcohol and evidenced-based treatment strategies. Others use varying terms such as substance abuse or addiction. Even more complex are the combinations of treatment modalities covered in this dissertation. A strategy for overcoming these challenges involves paying close attention to the parameters outlined in the research and illustrating them comprehensively so that inferences may be accurately reported**.** Meta-analyses are the best points of reference in order to account for the challenges associated with drawing inferences across a multiplicity of studies.

Magill (2007) reported that, “its status as a method of quantitative research synthesis and what some consider an ‘illusion of objectivity’ underscores the need for a conservative stance on the part of the meta-analyst” (p. 22). The aim is to provide an unbiased summary value that characterizes the relationship of interest (Magill, 2007, p. 22). In this dissertation, the relationship of interest involves the efficacy of various evidenced-based treatment modalities designed to combat substance abuse. Literature that relates to meta-analysis of substance abuse treatment studies is examined and placed in the context of essential research directions. Similarly, the conclusions drawn in this dissertation are not universal, however, they are indicative of patterns that have emerged in the literature, which can assist clinicians when determining which strategies or combination of strategies are efficacious to use with their clients.

This research may also be useful concerning the development of future drug and alcohol programs.

The preceding paragraphs have only briefly described the difficulties associated with drawing inferences across studies that have differences in sample size, method of analysis, theoretical perspectives, populations, drugs of abuse, and homogeneity of variances. These challenges are often referred to as comparing apples to oranges. How this problem was addressed is described more thoroughly in this dissertation's Methods section under the Magill and Ray's (2009) Study heading.

As mentioned previously, CBT is the most prevalent intervention strategy for substance abuse. One of the reasons this is the leading evidenced-based treatment is because it is the easiest of all models to collect data. Intervention strategies such as the 12-step model pose challenges for researchers because of their spiritual emphasis. Numerous literature sources in support of CBT being the most efficacious treatment are presented as well as research that contradicts this finding. Additionally, various intervention strategies are investigated in relation to their effectiveness in treating specific drugs of abuse such as alcohol, marijuana, opioids, and cocaine. The relevant research is synthesized and a critical review of the efficacy of several different evidenced-based strategies has been developed. As mentioned previously, meta-analysis provides the most methodologically sound way of reporting on the effectiveness of evidenced-based strategies that vary in context. Therefore, numerous meta-analyses concerning the efficacy of CBT and other substance abuse treatment modalities have been examined. However, meta-analytic studies (quantitative research) often lack detailed information describing each of the modalities. A purpose of this dissertation is also to provide the reader with an overview of various evidenced-based strategies that are available to clinicians. In order to

accomplish this, the following headings are used, Treatment Description, Similarities/Differences with CBT, Treatment Implementation, Strengths of the Modality, Limitations of the Modality, Effectiveness, and Integration with other Approaches.

In pursuit of reviewing the available treatment options, using CBT as an anchor, valuable data was appraised from quantitative studies, qualitative interviews, and outpatient treatment experimentation measures, which provide a unique perspective on the topic of this dissertation. The methods incorporated in this synopsis provided a step-by-step process for building upon emergent psychological theory.

Previous Research

The following paragraphs briefly describe two particular studies that are investigated in more thorough detail later in this review. These studies contribute substantially to answering the following research question, "What is the relative effectiveness of the different treatment modalities within the scope of this review that are available to therapists for treatment of substance abuse?"

Although this dissertation focuses primarily on efficacious treatments for *substance abuse* and posits that CBT is the most pervasive, the current investigation would not be complete without an assessment of the efficacy of CBT for treating *psychiatric disorders*. Hofmann et al. (2012) conducted a comprehensive review of 269 meta-analytic studies, reporting on the efficacy of CBT for treating psychiatric disorders (including but not limited to substance use disorders, schizophrenia and other psychotic disorders, depression, anxiety, bipolar disorder, personality disorders, and general stress).

Prior to Hofmann et al.'s (2012) review, only one other meta-analytic study examined the efficacy of CBT in relation to different psychiatric disorders. This previous study was conducted

by Butler et al. in 2006, and it identified 16 quantitative reviews that included 332 clinical trials covering 16 different disorders. As Hofmann et al. (2012) advised, “the Butler et al. study has since become one of the most influential reviews of CBT” (p. 428). The goal of the Hofmann et al. (2012) study was to survey the meta-analytic literature examining the evidence-base for the efficacy of CBT between 2000 and 2012 because the majority of studies (84%) were published after 2004.

According to Hofmann et al. (2012), “the present study is the most comprehensive and contemporary review of the meta-analytic studies of CBT to date” (p. 435). After surveying the more recent meta-analytic studies of CBT between 2012 and 2019, the current dissertation has not discovered any evidence of a more comprehensive or influential study than the one conducted by Hofmann et al. (2012). This study is examined in more detail in the literature review portion of this review. There have been numerous studies conducted on the efficacy of CBT between 2012 and 2019, however, they are specific in context. Some report on CBT and its efficacy for treating anxiety while others focus on CBT and its efficacy for treating obsessive-compulsive disorder. Hofmann et al. (2012) looked at the efficacy of CBT with 15 different disorders and found that CBT is more efficacious than comparison conditions with borderline personality disorder, panic disorder, anger/aggression, depression, childhood anxiety, generalized anxiety disorder, chronic fatigue, and bulimia nervosa.

Hofmann et al. (2012) reviewed 18 studies on the efficaciousness of CBT in treating substance abuse. They found that CBT is particularly efficacious for treating cannabis dependence, but less effective for treating opioid and alcohol dependence. Although their study did report on substance abuse, it was broader in focus concerning CBT’s effectiveness in treating a wide variety of disorders. Magill and Ray’s (2009) study evaluated CBT’s effectiveness with

treating substance use disorder in particular, and is therefore, more congruent with the current investigation. Both the Hofmann et al. (2012) and Magill and Ray (2009) studies model the type of article selection and methodology used in this dissertation. Additionally, this review utilizes key studies that were not include by the authors described in the preceding paragraphs. It also outlines in much more detail both the commonalities and differences between the varying treatment approaches.

As mentioned previously, this dissertation is written with the intention of providing the reader with a comprehensive overview of the issues surrounding the research question. CBT has received overwhelming support concerning its efficacy. One of the reasons that CBT is an efficacious approach to treating substance abuse is because it focuses on eliminating the very cognitions that cause substance abusers to fail in their attempts to maintain sobriety. Also, CBT's ability to help substance abusers see the connection between their thoughts, behaviors, and emotions is a central element that supports its efficacy.

CHAPTER II: METHODS

Study Selection

This method section outlines the approach that was taken in this critical evaluation of the literature. The first step in developing a comprehensive literature review is to describe the search criteria that determined how the studies were chosen for analysis. First, substance abuse treatment review articles were identified and analyzed based on treatment terms (e.g., cognitive-behavioral, relapse prevention, motivational interviewing) and outcome targets (e.g., alcohol, cocaine, opiate, illicit drug, substances), and in several reputable databases that are outlined in the following paragraphs. For a listing of all search terms, see Appendix A. Second, articles published in peer-reviewed journals were examined. Third, the reference sections of those articles were inspected to locate other qualitative and quantitative reviews on cognitive-behavioral therapy or general substance-dependence treatment. This was accomplished by utilizing the names of each author of the studies that were selected. The evidence base cited consisted of findings from either individual studies or meta-analyses of studies, many of which were randomized controlled trials (RCT).

The data was obtained via specific government databases and other academic sources (see Appendix A). Some of these databases include the following sources, PsycINFO (produced by The American Psychological Association), PubMed, ProQuest, National Institute on Drug Abuse (NIDA), Substance Abuse and Mental Health Services Administration (SAMHSA), Center for Disease Control and Prevention (CDCP), National Institute on Alcohol Abuse and Alcoholism (NIAAA), and the Center for Substance Abuse Treatment (CSAT). In total, 160 articles were reviewed, and from those, 93 were included in the current dissertation. How the 160

articles were distilled down to the 93 that were included is described throughout this methods section.

NIDA is a federal scientific research institute that is funded by the National Institutes of Health. It is a branch of the Department of Health and Human Services. The reason this was chosen as a primary resource is because it is the largest supporter of the world's research on drug use and addiction. The data found within this database is aligned with this review because it addresses fundamental questions about drug abuse such as, "How effective are the various evidenced-based strategies that are available for treatment of substance abuse?" Several articles contained within the NIDA resource were used in this review to explore the research question.

In order to substantiate the legitimacy of the sources that were reviewed, what follows is a brief description of them. NIDA is actively involved in developing and testing new drug treatments and prevention approaches. Therefore, its integration into this review is invaluable because it provides information about both evidenced-based and non-evidenced-based intervention strategies. The Bartlett (2013) article was chosen for this review because it frequently references NIDA and closely adheres to its research. SAMHSA is another governmental agency under the U.S. Department of Health and Human Services. Its purpose is to advance the behavioral health of the nation and to reduce the impact of substance abuse and mental illness on American communities. This resource has particular utility for this review because of its contributions to investigating the correlation between mental health and substance abuse. It also provides meaningful data about abstinence rates and sheds light on statistics that illustrate information about treatment completion.

The National Institute on Alcohol Abuse and Alcoholism (NIAAA) conducts behavioral research on the causes, consequences, treatment, and prevention of alcoholism and

alcohol-related problems. It funds approximately 90% of all such research in the United States. This source was selected because it is well known and respected within the scientific community. NIAAA conducted an eight-year, multi-site, $27-million study (Project MATCH Research Group [PMRG], 1997) that concluded Cognitive Behavioral Coping Skills Therapy, Motivational Enhancement Therapy, and Twelve-Step Facilitation Therapy are equal in effectiveness. Before including a study in this review, its instruments and procedures were evaluated (psychometrics).

PsychINFO is a valuable American Psychological Association (APA) database that is reputable and well known for its scholarly articles. It is the largest resource of peer-reviewed literature in behavioral science and mental health. Hundreds of articles were reviewed from this database. Ultimately, these articles were distilled down based on their relevance to the topic, science-based research, and legitimacy within the field of psychology. For instance, the clinical psychologist Alan Marlatt's pioneering work in the field of addictive behaviors was chosen to be included in this dissertation as a result of surveying the literature and discovering that he has been cited 7,071 times in prestigious databases. He is an expert on addiction, harm reduction, brief interventions, and relapse prevention. Additionally, he was a member of NIDA, multiple award recipient from well-known associations, and leader in his field.

Author Selection

Many of the authors were chosen and included in this dissertation based on their comprehensive analysis of the work of pioneers in the field of addiction research. One example is Sonali Jhanjee's (2014) article entitled, "Evidence Based Psychosocial Interventions in Substance Use." One of the goals of this dissertation is to provide the reader with a current assessment of the literature on substance abuse intervention strategies. Although six years old,

Jhanjee's (2014) article conducted a relatively current literature review using several electronic databases (PubMed, Cochrane Database of systemic reviews and specific journals, which pertain to psychosocial issues in addictive disorders and guidelines on this topic). The term *psychosocial* refers to an individual's psychological development and interaction with their social environment. Psychosocial treatments (interventions) include structured counseling, motivational interviewing, case management, care-coordination, psychotherapy, and relapse prevention.

Jhanjee's (2014) frequently referenced Miller and Rollnick's (1991) well-known and pioneering work on Motivational Interviewing. He also integrated research from many of the aforementioned governmental databases such as the MATCH trial and reported on Aaron Beck's contributions to Cognitive Behavioral Therapy. It is acknowledged that although Jhanjee's (2014) article contributes to accurate reporting on the comparative effectiveness of CBT, it is not the only viewpoint within the scientific community on the topic. Therefore, as mentioned previously, this literature review also delineates reliable, scientifically substantiated, and valid perspectives that contradict the idea that CBT is the most efficacious treatment strategy for treating substance abuse. The purpose of this review is not to determine whether CBT is the most efficacious approach. The intention is to survey the relevant substance abuse treatment and describe what was learned. While in pursuit of this aspiration, it was discovered that numerous scholars advocate that CBT is the most effective treatment. This review provides evidence that there are several other evidenced-based strategies that are comparatively effective to CBT. Also, non-evidenced-based strategies such as Harm Reduction and 12-Step Program of AA and NA are examined.

There are approximately 54 major addiction and related journals. The *Journal of Addiction Research and Therapy* is high on this list in terms of reputation. The following

authors, Donovan and Witkiewitz (2012) and George et al. (2012), have published in this journal and are included in this dissertation. The former authors are used for their contributions concerning relapse prevention and the latter for their insights on CBT. Many of the articles included in this review were extracted from the remaining 53 well respected journals.

Methods of Assessment

Both secondary and original sources were analyzed. Various methods of assessment were reviewed in order to gain a better understanding of the topic. The next research tool involved a search using a list of prevalent words gathered from an examination of the abstracts related to substance abuse and evidenced-based practices. This literature review used information contained in the *Publication Manual of the American Psychological Association* (American Psychological Association, 2010) as a reference point for the construction of the methods section. This dissertation's exclusion criteria involve articles that specifically conduct research on depression, anxiety, trauma, and other pathologies that are not explicitly linked with substance abuse or addiction.

Bem (2016) published a book entitled, *Writing a Review Article for Psychological Bulletin.* It illustrates the fundamental components of a literature review that are necessary to become published in the *Psychological Bulletin*. A challenge in writing this dissertation is that the rigors of the scientific community are thorough and comprehensive. This book described the methodology required for publication, and therefore, is a valid example of how to write a scholarly review. It was used as a model for the construction of this review. This dissertation is essentially a paper that has surveyed the relevant substance abuse treatment material and describes what was learned. This review also suggests the next steps toward solving the problem of addiction.

Primary and Secondary Sources

Consistent with many other literature reviews, this dissertation includes secondary sources. Although primary sources are important to reference, a significant amount of the data that has been collected involve these sources. Primary sources are important because they often include pivotal authors within various disciplines. For instance, an investigation of behavioral theory would not be complete without mentioning Pavlov, Bandura, or Watson's contributions to the field. Secondary sources, however, are generally more numerous and are an integral part of theory development and data integration.

Critical Analysis

A strength of this dissertation's methodology (literature review) is that it allows the author to develop broad knowledge about the issues associated with addiction treatment. It provides the reader with an overview of the pertinent issues that relate to the topic. It does not however allow for an in-depth description of the essence of the experience of being a treatment provider or an individual who lives with a substance abuse problem or dual diagnosis as would be illustrated by a phenomenological study.

Fragmentation

The issue of fragmentation of disciplines lies at the heart of the current challenges regarding comparing apples to oranges. According to Donovan and Marlatt (1988), "Until 1976, the study of addictions was fragmented in that each drug was studied independently by a variety of disciplines with interests that were narrowly defined by their orientations" (p. 1). After conducting an exhaustive search of the literature, it became apparent that the study of addiction is often split up between various disciplines such as psychology, social work, pharmacology, neurology, psychiatry, and sociology. To further complicate the difficulty of evaluating the

comparative effectiveness of CBT and other evidenced-based strategies, within each of these disciplines, researchers often focused on a specific drug of abuse because they had different motives behind their research (different orientations). This resulted in little cross-disciplinary sharing of information (Brennan, 1998, p. 9). For instance, one study used in this dissertation by Rawson et al. (2006) provides a comparative analysis of contingency management and cognitive-behavioral approaches for stimulant dependent individuals. Another by Irvin et al. (1999) investigated the effectiveness of Relapse Prevention with alcohol use, smoking, poly substance, and cocaine use.

There are fewer studies conducted that evaluate the comparative effectiveness of various treatment strategies, which makes the current dissertation all the more relevant. Additionally, because there is not one universal treatment which has emerged as the "most effective," the current investigation has particular merit. When evaluating the comparative effectiveness of CBT, it is crucial to understand that this modality is inherently complex. CBT is explored in greater detail later in this review. Given the complexity of CBT, its implementation poses significant challenges. In order to account for this difficulty, CBT is often modified or distilled down so that its effectiveness with certain populations may increase.

Treatment Simplification

As mentioned previously, CBT is a comparatively complex strategy, which can be challenging when training clinicians to implement it successfully. The advent of Relapse Prevention is an example of how CBT has been simplified in order to match its most relevant mechanisms of action to meet the needs of the substance abusing population. Another example is how a computerized version of CBT (explored later in this review) has been developed in order to simplify and put the modality into a scientific crucible so that its ineffective components can

be removed, and treatment delivery can be shortened and tailored to substance abuse. The current dissertation will examine what the research indicates about the effectiveness of these adjustments in approaches.

In order to address many of the formidable hurdles which face current researchers on substance abuse, and which stem from the earlier fragmentation of disciplines, meta-analyses often provide a bridge across the gap. However, as mentioned previously, meta-analyses have their limitations. Meta-analyses are used to compare strategies in this dissertation; however, the structure of this paper more closely resembles a literature review.

Comparing Strategies

The validity of this dissertation is substantiated on its ability to utilize acceptable research practices that are accepted by the profession of psychology. Additionally, the goal of this methods section is to describe *what* was done to address the research question and to describe *how* answering it has been approached. This review has not yet adequately identified *how* this dissertation can account for the problems associated with drawing inferences or determining overall trends from studies that include a number of varying contexts and variables, however, it has shown that it is replicating methods of past successful reviews and meta-analyses. The following is a review of the methodology utilized.

In order to address the problems associated with drawing inferences from studies, which vary considerably, Hofmann et al. (2012) used inclusion criteria, major groupings, effect size estimates, and response rates to describe their findings. In 2012, Hofmann et al. conducted a comprehensive review of meta-analyses, reporting on the efficacy of CBT across a wide range of treatments (e.g., contingency management, relapse prevention, and motivational approaches), comparison conditions (e.g., medication, placebo, treatment as usual, wait list, and other

treatment), and particular disorders including but not limited to substance use disorders, schizophrenia and other psychotic disorders, depression, anxiety, bipolar disorder, personality disorders, and general stress. For each disorder and population grouping, data were described qualitatively, considering the findings of all meta-analyses within that group (described in detail in the CBT Efficacy section of this dissertation). The current dissertation mirrors this approach in describing its findings, but also includes a comparative review of the literature in order to provide more detail concerning the various treatments.

Hofmann et al.'s (2012) study provides a model for how meta-analytic studies address problems with drawing inferences from studies that have multiple variables. The current dissertation uses many of the strategies explored above in order to evaluate its findings. However, meta-analyses have weaknesses. They are subject to publication bias, Questionable Research Practices (QRP), coding issues, and non-cumulative methods and measurement (mixing apples and oranges; see Corker, 2018). According to Corker (2018), "A meta-analyst's task is synthesizing findings on a common research question or hypothesis. Sometimes, however, the methods and measures used to investigate a question are so diverse that the resulting synthesis may lack meaning" (p. 10). Eysenck (1978) referred to this phenomenon as "mixing apples and oranges." Proponents of meta-analysis note that researchers can code methodological features of studies and include those features in the analysis. As mentioned previously, the goal of this method section is to describe *how* this literature review was conducted. In order to address some of the aforementioned limitations of meta-analysis, a comparative review of the literature has been made.

Comparative Review

As indicated earlier, the current dissertation comprehensively describes the various treatments. The strengths and limitations of multiple treatment approaches are addressed in more detail than allowed by meta-analysis alone. This review utilizes both quantitative and qualitative research in pursuit of examining the research question. Examples of pertinent issues surrounding the effectiveness of substance abuse treatment include aftercare, effects over time, integration with the 12-steps, and social skills. This dissertation outlines the similarities and differences between the various approaches for treatment of substance abuse in the pursuit of providing an overview of the relative effectiveness of the different treatment models available to clinicians.

Essentially, a review of the literature has found that previous authors, who are well respected in the scientific community, have taken studies that are specific in context, compared and contrasted them with other strategies, and drawn inferences which have led to the development of new and more effective strategies for treatment of substance abuse. Throughout this review, the reader will gain insight into the complexities involved in this distillation process. The next section addresses the reasoning taken by the current investigation.

Multimodal Treatment Packages

Cognitive behavior interventions have also been evaluated as a component of multimodal treatment packages. According to Carroll and Onken (2005):

> A multisite study involving 450 marijuana-dependent individuals demonstrated that a nine-session individual approach that integrated cognitive behavior therapy and motivational interviewing was more effective than a two-session motivational interviewing approach, which was in turn more effective than a delayed-treatment control condition. (p. 1455)

This finding is consistent with Magill and Ray's 2009 meta-analytic study of randomized controlled trials explored in the following paragraphs.

This dissertation provides a balance between investigating the various treatment modalities as stand-alone treatments and when used in conjunction with other interventions. This approach allowed for a depth and breadth of understanding of the implications regarding the usefulness of the substance abuse treatments available to clinicians. It fostered an ability to provide an in-depth analysis of the efficacy of just one element of the multi-method approach. After a comprehensive review of the literature, it was discovered that Magill and Ray's (2009) study provides the *only* meta-analytic study to date comparing various evidence-based treatments for substance abuse *across substances, or for individual substances.*

This study, in other words, investigates the efficacy of stand-alone treatment modalities, when combined with other treatments, and or with pharmacological interventions. This highlights the reason this study is so important for the current dissertation. Further, Magill et al.'s (2019) meta-analysis of CBT treatment for substance abuse is the most comprehensive study to date that reports on the efficacy of CBT when delivered in a stand-alone format and not combined with another psychosocial or pharmacological treatment (p. 1094). The latter study is explored later in this review. This dissertation has been influenced by the methodology of other great works that have come before such as Magill and Ray (2009).

Scope of the Review

The relevant research is synthesized and a review of the efficacy of several different evidenced-based strategies has been developed. This literature review assumes that "a one size fits all" approach to combating addiction is problematic. This analysis defines effectiveness/healing and uses the definition as an anchor for program development. The pros

and cons of the various treatment modalities explored in this paper has allowed for meaningful conclusions to be drawn across studies.

This dissertation illuminates differences, contradictions, inconsistencies, similarities, and gaps in the literature. The application of critical thinking skills has uncovered trends in the literature that have been referred to in order to determine the conditions under which recovery from substances is most likely to occur. Interpretations of the meta-analyses have been demonstrated with the intention of drawing broad assertions from a variety of sources.

The individual studies have been critiqued and recommendations for future research have been made. Critiquing the studies together allowed for an assessment of multiple perspectives. This method facilitated the advancement of the scope of the review. It reinforced, clarified, and defined the problems associated with the implementation of evidenced-based strategies with the purpose in mind of reducing symptoms correlated with substance abuse and increasing functioning. Integrating and organizing the data into classifications of symptomology enhanced the progression of theory inquiry.

Information was obtained from the perspectives of both clients and service providers. As stated earlier, valuable data was appraised from quantitative studies, qualitative interviews, and outpatient treatment experimentation measures. As has been observed, the methods incorporated in this review provided a step-by-step process for building upon emergent psychological theory. They also highlight the advantages and disadvantages of including spiritual principles and religion in the substance abuse treatment process. The aspects of the evidenced-based practices that are most useful in determining which treatments, or combination of treatments, are efficacious for clinicians to utilize when treating clients that have problems with substance abuse has been discerned.

Operational Definitions

What follows is an illustration of the operational definitions included in the literature review. The description of substance abusers' primary drug includes five possible categories—alcohol, cocaine/stimulant, opiate, cannabis, or polysubstance. The types of cognitive behavioral treatments covered in the literature review vary. When reporting on findings, three key classifications emerge. The first category involves CBT as a stand-alone treatment. The second reports on CBT administered in combination with other evidenced-based treatments. The third utilizes CBT treatments delivered in combination with medications. This dissertation uses interchangeable terms such as drug addiction, substance abuse, drug and alcohol abuse, and substance use disorders. All of these terms are synonymous and refer to the main variable studied in this literature review.

DSM–5

What is a substance use disorder (SUD) according to the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (DSM-5) of the American Psychiatric Association (2013)? "The essential feature of a substance use disorder is a cluster of cognitive, behavioral and physiological symptoms indicating that the individual continues using the substance despite significant substance-related problems" (American Psychiatric Association, 2013, p. 483). In this overview of the literature, alcohol is considered to be a particular subset of substances and not a separate treatment category.

The DSM-5 establishes nine types of Substance-Related Disorders:

1. Alcohol
2. Caffeine*
3. Cannabis (e.g., marijuana)

4. Hallucinogens

5. Inhalants

6. Opioid (e.g., heroin)

7. Sedatives, Hypnotics, or Anxiolytics (e.g., valium, “qualudes”)

8. Stimulants (cocaine, methamphetamine)

9. Tobacco

*Substance use disorder does not apply to caffeine.

Regardless of the particular substance, the diagnosis of a substance use disorder is based upon a pathological set of behaviors related to the use of that substance. These behaviors fall into four main categories:

1. Impaired control

2. Social impairment

3. Risky use

4. Pharmacological indicators (tolerance and withdrawal)

The following descriptions of substance abuse criteria are merely summaries of the 11 criteria involved in making a diagnosis. In order to receive a diagnosis, a client must have at least two of the 11 symptoms.

Impaired Control. Impaired control may be evidenced in several different ways: One example is using substances for longer periods of time than intended, or using larger amounts than intended. Another criteria for impaired control involves the desire to reduce use yet being unsuccessful doing so. This category also involves spending excessive time getting drugs, using drugs, or recovering from the drug use. In addition, impaired control often is influenced by cravings that are so intense that it is difficult to think about anything else.

Social Impairment. Social impairment is one type of substantial harm (or consequence) caused by the repeated use of a substance. Individuals may continue to use despite problems with their work, love, or play lives. This might include repeated work absences, poor school performance, neglect of children, or failure to meet household responsibilities. A substance use disorder may also be indicated when someone continues substance use despite having interpersonal problems because of the substance use. This may include arguments with family members about the substance use or losing important friendships because of continued use. Important and meaningful social and recreational activities may be given up or reduced because of substance use. A person may spend less time with their family, or they may stop playing sports with their friends (Horvath et al., n.d.).

Risky Use. Addiction may be indicated when someone repeatedly uses substances in physically dangerous situations. For instance, using alcohol or other drugs while operating machinery or driving a car. Although driving while under the influence of alcohol is the most common way for adolescents to meet this criterion, hazardous use is much more common in adults than teenagers, most likely because they have less access to automobiles and alcohol than adults. Some people continue to use addictive substances even though they are aware it is causing or worsening physical and psychological problems. An example is the person who continues to smoke cigarettes despite having a respiratory disorder, such as asthma.

Pharmacological Indicators: Tolerance and Withdrawal. According to Horvath et al. (n.d.):

> For many people, tolerance and withdrawal are the classic indicators of advanced addiction. As such, these are particularly important concepts. This criterion refers to the

> adjustment the body makes as it attempts to adapt to the continued and frequent use of a substance. This adjustment is called maintaining homeostatic balance. (p. 1)

Diagnosing the Severity of Addictive Disorders. The number of criteria met determines the severity of addiction. “Substance use disorders occur in a broad range of severity, from mild to severe, with severity based on the number of symptom criteria endorsed” (American Psychiatric Association, 2013, p. 484). A mild substance use disorder is suggested by the presence of two to three symptoms, moderate by four to five symptoms, and severe by six or more symptoms. Both adults and adolescents require a SUD diagnosis in order to be qualified to receive treatment for a substance use problem within the US health-care system.

CHAPTER III: REVIEW OF THE LITERATURE

In this section, each treatment modality will be discussed in pursuit of obtaining a clear picture concerning the relative effectiveness of the different treatment modalities available to clinicians. Given that CBT is one of the most widely studied evidenced-based practices for treatment of substance abuse, the most pertinent starting point concerns answering the question, "What is Cognitive Behavioral Therapy?"

Cognitive Behavioral Therapy

Cognitive behavior therapy (CBT) is a generic term, which can refer to numerous therapeutic approaches, all of which borrow from behavioral and cognitive techniques to modify human behavior (Beck, 1970; Meichenbaum, 1977). The earliest forms of CBT were Albert Ellis's Rational Emotive Behavior Therapy in the 1950s and Aaron Beck's Cognitive Therapy (now known as CBT) in the 1960s. CBT refers to the link between behavioral methodology and an understanding that cognition is a critical component that contributes to psychological dysfunction, and that both behavior and cognition must be addressed together. CBT assists clients in learning how to identify and correct problematic behaviors by applying a variety of different skills with the goal of arresting drug abuse and addressing a range of other problems that often occur simultaneously. CBT was originally designed to prevent relapse when treating problem drinking. It was then modified for cocaine addicted patients, and currently it has been proven to be effective in treating clients that are addicted to numerous drugs of abuse such as marijuana, cocaine, methamphetamine, opiates, and alcohol (Marlatt & Gordon, 1985).

George et al. (2012) claimed that the cognitive-behavioral frame approaches therapy from a perspective that includes several components. According to this perspective, interacting factors such as automatic thoughts, beliefs, schemas, emotions, and behaviors operate in a

self-perpetuating cycle that maintains psychological dysfunction. Alcoholics frequently report that they feel powerless to do anything about their drinking problem. It is a goal of CBT to empower clients to increase their self-efficacy and exert control over their addictive behavior. As mentioned previously, CBT is one of the most widely accepted evidence-based interventions used with substance abusers. In therapy, clients are introduced to healthy coping skills. CBT assists clients to become self-aware and triggering situations are identified. Before exploring CBT in more detail, it is appropriate to briefly review its roots.

George et al. (2012) ascertained that, "Behavioral self-control training (BSCT) was one of the first CBT approaches and was developed by Miller and colleagues" (Hester & Miller, 1989; Miller, 1983; Miller & Taylor, 1980, p. 191). Behavioral self-control training includes setting goals, self-monitoring, learning skills, and receiving rewards for the accomplishment of goals. The purpose of BSCT is to assist clients in their pursuit toward either maintaining abstinence or participating in non-problematic drinking. This approach is not suggested for use with severely dependent alcoholics.

Walters (2000) conducted a meta-analysis of BCST, which indicated that it is more effective than no treatment or other moderation-based treatments, and was equal to or more effective than abstinence-oriented treatments at reducing problematic drinking. BCST and CBT are within the same category of treatment, and share many of the same components; therefore, both of them help to provide data points for this survey of the literature. It is worth noting here that CBT's focus is primarily on maintaining abstinence whereas BCST may be used to help alcoholics to participate in non-problematic and moderation based drinking. The next portion of this dissertation addresses how addiction is related to CBT.

Addiction

Bartlett (2013) reported that, "While addiction has been viewed historically as a moral failing or lack of individual self-control, it is now recognized and treated as a chronic brain disease often associated with relapses" (p. 349). In addition, Bartlett (2013) noted that "with proper care, many addicted persons can be treated successfully (National Institute on Drug Abuse [NIDA], 2008), but some persons may struggle with their addiction throughout life" (p. 350). Many drugs of abuse are both physically and psychologically addicting. Addicts enter into treatment for a variety of reasons; substance abusers may be ordered by the court, forced by their families, or enter willfully. Frequently, addiction causes a distortion of reality within the substance abuser. CBT effectively encourages the addict to challenge their negative preconceived ideas about themselves, their beliefs, and the world in which they operate. Once these preconceived ideas have been identified, CBT encourages addicts to replace them with positive ideas that are based more closely on reality. They often have a mental framework that is riddled with rationalizations and justifications that serve to facilitate ongoing drug use (Bartlett, 2013).

In this dissertation, the effectiveness of evidence-based strategies are examined as stand-alone treatments and those combined with CBT. Many of the treatments considered have a very specific context from which the results are substantiated. These contexts include differences in sample size, theoretical perspectives, populations, and drugs of abuse. It is a goal of this literature review to compare the effectiveness of CBT with other forms of treatment for substance abuse.

Addiction Influences

Courtwright (2010) stated that addiction is influenced by environmental, genetic, and behavioral components. At the root of these factors are neurochemical changes in the brain that reinforce the desire to continue using despite significant life problems. This desire to continue using often manifests itself in obsessive and compulsive ways. Substance abuse affects the way individuals perceive the world around them. Addicts often describe that willpower is not enough to arrest their compulsion to use. As mentioned previously, it is a well-known fact that addiction creates cognitive distortions within the individual that makes treatment difficult (SAMHSA, 2020). These distortions create a misinterpretation of reality. Even though it may be clear to others, addicts frequently do not associate their serious life consequences with their substance use. It is therefore noteworthy to understand that treatment must be focused on helping addicts to identify the root causes of their problems.

Denial, selfishness, and self-centeredness lie within the center of many addicts. These very character defects are addressed with the application of CBT. This treatment intervention helps individuals to become more self-aware. In addition, it helps them to change their self-destructive behaviors. The most pertinent example of these self-destructive behaviors is with regard to relapse. It is common for addicts to relapse, whether they are in treatment or not, and when they are interviewed afterwards, they are often unable to determine the cause (CDCP, 2019). The following section of this literature review pursues further the question, “What is CBT?”

CBT Components

Kiluk and Carroll (2014) reported that CBT is made up of two particular critical characteristics. The first component of CBT investigates how substance use plays a role in the

individual's life, whereas the second component involves skills training. What follows is a brief description of the first critical characteristic of CBT. Markel (2011) illustrated that clients often feel that they are experiencing consequences because they are "victims of a cruel world" (p. x). Clients may associate their troubles with the fact that they "went down the wrong street" (p. x). The reality is that individuals who are addicted create their own problems by acting in self-destructive ways. The second component of CBT has to do with skills training and is explored after the following investigation of Rational Emotive Behavioral Therapy.

CBT effectively assists clients to become empowered by helping them to discover that they have an internal locus of control. In other words, clients have the ability to change their reactions to situations. To accomplish this goal, they must first understand that many of their beliefs are irrational. Butler et al. (2006) demonstrated that one of these beliefs is, "I have to use drugs in order to survive." As mentioned earlier, Albert Ellis is the founder of Rational Emotive Behavioral Therapy (REBT) and his work consists of 12 different irrational beliefs. Over the course of treatment, patients explore and then challenge these irrational beliefs. This form of cognitive behavioral therapy is prevalent within the literature about CBT and helps provide a conceptualization of what this form of treatment involves.

Rational Emotive Behavioral Therapy

McHugh et al. (2010) asserted that the goal of REBT treatment is to help patients recognize that the source of their negative feelings comes from their beliefs and not from the presenting problem. According to the Activating Events, Beliefs, Consequences (ABC) model of REBT, oftentimes the presenting problem or "action" (A) cannot be changed. However, the "belief" (B) can be changed over time. The end result is that the patient can have a more desirable consequence (C) or "feeling" once the belief that corresponds to the action has been

changed. This form of therapy is considered to be one of the roots in the evolution of CBT and a brief introduction to its concepts appeared necessary. The following section on CBT provides insight into answering the question, “What is CBT?”

Skills Training

Consistent with previous arguments, the second component of CBT involves skills training. Therefore, it is the therapist’s second objective to develop a training program that focuses on changing habits that affect the client’s drug use. In this phase of CBT patients are introduced to appropriate coping and social skills. It is acknowledged that Aaron Beck has made considerable contributions to CBT, however, this literature review does not provide an analysis of his work. The reason for this decision is that one of the goals of this paper is to evaluate the comparative effectiveness of Cognitive Behavioral Therapy (CBT) with alternative forms of treatment for drug addiction and to determine the conditions under which recovery is likely to occur. Kiluk and Carroll (2014) authored a seminal article entitled, “Illegal drug use,” which provided an illustration of the foundation upon which CBT has been built. CBT has its roots within classical behavioral theory and this article expands upon the contributions of Pavlov, Watson, Skinner, and Bandura (Kiluk & Carroll, 2014). The following illustration only briefly explores the relevance of classical and operant conditioning for substance abuse, and this subject is investigated more thoroughly under the Contingency Management heading of this literature review.

Kiluk and Carroll (2014) indicated that Skinner’s work concerning operant conditioning provides insight into the reasons why CBT is an effective intervention to use with substance abusers. The reason for this is that classical conditioning concepts and CBT are applicable to reducing drug cravings. This is accomplished by helping substance abusers to understand and

change their patterns of behavior (Kiluk & Carroll, 2014). During drug treatment using CBT, clients attempt to discover how they may avoid potentially triggering situations. They also develop coping skills such as mindfulness meditation, seeking support, and exercise. CBT is useful in assisting clients to develop physical fitness goals. This treatment strategy helps clients to identify and overcome barriers to exercise. This modality emphasizes the importance of homework assignments such as journaling in order to promote accountability and self-reflection.

Over time, clients begin to enhance their ability to maintain abstinence and oftentimes, they eventually become healthy contributing members of society. The next portion of this literature review moves away from focusing on the components which make up CBT. It moves toward an investigation of its efficacy, explores prominent findings, and provides a discussion of prominent results from Hofmann et al.'s (2012) and Magill and Ray's (2009) meta-analytic reviews that are useful in answering the research question.

CBT Efficacy

The meta-analytic reviews by Hofmann et al. (2012) and Magill and Ray (2009) provide methodologically sound examples of how to accurately report on the efficacy of substance abuse treatments. These two reviews are used as models in the construction of the remainder of this dissertation. They provide templates for analyzing the studies included in this review of the literature, offer significant contributions concerning the efficacy of CBT, and illustrate how to overcome the challenges associated with comparing apples to oranges.

CBT Efficacy for Psychiatric Disorders

The following paragraphs investigate the efficacy of CBT for psychological difficulty generally; then the focus will shift to discussing its efficacy in treating substance abuse. The reason for including this section about CBT in relation to psychological difficulty is that many

clients who have a substance use disorder also develop other mental illnesses, just as many people who are diagnosed with mental illness are often diagnosed with a substance use disorder. Approximately half of people who experience a mental illness will also experience a substance use disorder at some point in their lives and vice versa (NIDA, 2018).

The next illustration was briefly discussed in the introduction portion of this dissertation. However, this section elaborates in great detail what was only previously summarized. In 2012, Hofmann et al. conducted a comprehensive review of meta-analyses, reporting on the efficacy of CBT. They utilized 269 meta-analytic studies involving treatments of particular disorders, including but not limited to substance use disorders, schizophrenia and other psychotic disorders, depression, anxiety, bipolar disorder, personality disorders, and general stress.

Consistent with some of the challenges faced by the current dissertation, Hoffman et al. (2012) indicated that the 269 meta-analyses that were reviewed employed different methodologies and resulted in different effect size estimates.

How Hofmann et al. (2012) Address These Challenges

The 269 meta-analyses were distilled down to 106 based on their inclusion criteria. Specifically, the meta-analyses needed to be quantitative, non-duplicates, randomized controlled trials, and report on response rates (Hofmann et al., 2012, p. 429). The studies were then categorized into groups to provide the most meaningful and extensive examination of the efficacy of CBT across a range of problem areas and study populations. The major groupings were as follows: substance use disorder, schizophrenia and other psychotic disorders, depression and dysthymia, bipolar disorder, anxiety disorders, somatoform disorders, eating disorders, insomnia, personality disorders, anger and aggression, criminal behaviors, general stress, distress

due to general medical conditions, chronic pain and fatigue, pregnancy complications and female hormonal conditions (Hofmann et al., 2012, p. 428).

As mentioned previously, the 269 meta-analyses included a wide variety of studies that employed different methodologies and effect size estimates. In order to address this challenge, the authors used the designation small, medium, and large for the magnitude of effect sizes in their review of the 106 representative meta-analyses (Cohen, 1988). They also utilized response rates to describe their results, which is a well-known unit of measurement within the field of psychology. Response rates are calculated by dividing the number of people who answered a survey by the number of people in the sample (expressed in a percentage). Essentially, the higher the response rates of a survey, the lower the risk of non-response bias. Low response rates can negatively affect reliability and validity. They also draw into question a researcher's ability to draw inferences concerning larger populations.

Results of Hofmann et al. (2012) Study

The results section of the Hofmann et al. (2012) study includes detailed reporting on the efficacy of each of the aforementioned major groupings. The current dissertation, with regard to the Hofmann et al. study, has chosen to provide a summary of the most prominent findings of the studies that were reviewed as opposed to going through each individual problem area and reporting them separately and in great detail. The reason for this is that the primary focus of this dissertation concerns the efficacy of various treatment modalities for treating *substance abu*se as opposed to evaluating them in relation to *other forms of psychological dysfunction*. For a more detailed investigation of the latter see (Hofmann et al., 2012, p. 435).

Most Prominent Findings of Hofmann et al. (2012) Study

CBT is arguably the most widely studied form of psychotherapy. Out of the 11 studies reviewed that included response rates, seven of them found that CBT was the most efficacious treatment for treating a wide range of psychological problems. The strongest support exists for CBT with regard to anxiety disorders, somatoform disorders, bulimia, anger control problems, and general stress, which had effect sizes in the medium to large range. Eleven studies compared response rates between CBT and other treatments or control conditions. CBT showed higher response rates than the comparison conditions in seven of these reviews and only one review reported that CBT had lower response rates than comparison treatments (Hofmann et al., 2012).

CBT Efficacy for Substance Use Disorder

Hofmann et al. (2012) reviewed 18 studies on the efficaciousness of CBT in treating substance abuse. They found that CBT is particularly efficacious for treating cannabis dependence but less effective for treating opioid and alcohol dependence. This study found that when multi-sessions are utilized, they are more successful as opposed to when single CBT sessions or other briefer interventions are employed. The authors asserted that, “The effect size of CBT was small as compared to other psychosocial interventions (e.g., contingency management, relapse prevention, and motivational approaches) for substance dependence” (p. 428). One meta-analysis that was reviewed (Leung & Cottler, 2009) found that CBT is more efficacious when grouped with other brief interventions as compared to pharmacological treatments, but CBT was not more efficacious than these other briefer less expensive approaches (Hofmann et al., 2012).

CBT Efficacy Across Disorders

Given the effect size estimates reported by the authors, it appears that CBT is more efficacious than comparison conditions with borderline personality disorder, panic disorder, anger/aggression, depression, childhood anxiety, generalized anxiety disorder, chronic fatigue, and bulimia nervosa. Therefore, CBT is more efficacious for these disorders than for substance use disorders with the exception of strong support for the treatment of cannabis addiction. The authors indicated that there is a need for more meta-analyses specific to substance using populations. Magill and Ray (2009) offered one of the most well-known contributions to this aim.

Magill and Ray's (2009) Study Reporting on the Efficacy of CBT

The following brief investigation of Magill and Ray's (2009) study reports on findings that are relevant to answering the question: "How does CBT compare in effectiveness to other available treatment modalities?" The study provides an example of how the current dissertation approached methodological challenges in the pursuit to report on the comparative effectiveness of CBT for treatment of substance abuse. Specifically, this dissertation uses effect sizes and response rates to provide accurate reporting within meta-analysis, and includes in depth analysis of individual studies using both qualitative and quantitative research methods.

Magill and Ray (2009) conducted a study entitled, "Cognitive-behavioral treatment with adult alcohol and illicit drug users: a meta-analysis of randomized controlled trials." In their report, they explained:

> The present meta-analysis provides a broad view of CBT efficacy for adults diagnosed with alcohol or illicit drug abuse or dependence. There are a number of promising CBT approaches available (McCrady, 2000) and their combination with pharmacological

(Carroll and Onken, 2005) or additional psychosocial (Longabaugh and Morgenstern, 1999) treatments may hold greater promise than either type of treatment alone. (p. 517)

The authors go on to explain that their objectives were to (a) provide a broad picture of CBT efficacy, (b) clarify potential design characteristics that may inflate or diminish effect size, and (c) to explore client or treatment factors as moderators of outcome which can inform future dissemination efforts.

According to Magill and Ray (2009), "CBT interventions for substance-use disorders have generally received empirical support, yet their effectiveness as a whole has not been subjected to recent systematic review" (p. 516). Meta-analyses are critical points of reference when examining the implications associated with evaluating the comparative effectiveness of CBT for the treatment of substance abuse. One of the difficulties in assessing the efficacy of the various treatments available is that the current research is often specific in focus, thus drawing broad assertions can be problematic in terms of validity. Meta-analysis is a promising method of research synthesis useful for large bodies of research that may show disparate results (Lipsey & Wilson, 2001).

Comparing Apples to Oranges

To date, qualitative reviews have concluded that CBT is more effective than no treatment, but have shown mixed results regarding questions of the durability of effects or possible delayed effects, and efficacy over other treatments (Magill & Ray, 2009, p. 514). In order to account for the often-disparate results within the field of addiction research, the authors' meta-analysis provides a broad view of CBT efficacy for adults diagnosed with alcohol or illicit drug abuse or dependence. It is an objective of the current dissertation to provide a scientifically

sound method for comparing apples to oranges (comparing a variety of substances of abuse with varying treatments).

The analogy of comparing apples to oranges is known in the scientific community as the quality or state of consisting of dissimilar or diverse elements (heterogeneity). This is explored further in the Data Analysis heading. Magill and Ray's (2009) study mirrors the methodological approach taken by the current dissertation's efforts to substantiate the legitimacy of its findings. The research included in this dissertation was both well respected within the field of psychology and proven to be methodologically sound using psychometrically established outcome measurements. Magill and Ray's (2009) meta-analytic sample was comprised of 59 research reports, described 52 studies, and contributed 53 effect sizes, to result in an *N* of 9,308 individuals (p. 517).

Effect Size Calculation

Cohen (1988) suggested that $d = 0.2$ be considered a "small" effect size, $d = 0.5$ represent a "medium" effect size, and $d = 0.8$ designate a "large" effect size. This means that if two groups means do not differ by 0.2 standard deviations or more, the difference is trivial, even if it is statistically significant. This strategy has been used in the current dissertation to evaluate the effectiveness of the various treatments that have been reviewed. The standardized mean difference (Hedges' *g*) was used to measure the relative effectiveness of CBT over comparison conditions for treating adult substance-use disorders. Conceptually, it is an estimate of treatment effect significance and magnitude expressed in standard deviation units (Magill & Ray, 2009, p. 517).

Data Analysis

Model of Inference and Heterogeneity

As mentioned previously, one of the difficulties in assessing the efficacy of the various treatments available is that the current research is often specific in focus, thus drawing broad assertions can be problematic in terms of validity. In the Magill and Ray (2009) study, in calculating combined effect sizes, alcohol- and illicit-drug-use outcomes were considered *fixed effects*. Specifically, it was assumed that CBT effect sizes represented a single population or a distribution of populations with between-study heterogeneity that could be explained by known moderators. The significance of the Cochrane *Q* test for heterogeneity determined whether this model of inference was tenable, that is, was it valid to combine these studies?

Moderator Analysis

The following illustration outlines one element of the methods used in Magill and Ray's (2009) study and identifies how variables were accounted for in the pursuit of measuring the efficacy of the individual or combined treatment approaches that were examined. A moderator is a third variable that affects the correlation of two variables. In Magill and Ray's study, examples of the moderators used include both client variables (e.g., demographic and diagnostic: age, percentage female participants, etc.) and treatment variables, i.e., delivery (as standalone or as aftercare), format (individual or group), and length (number of sessions). For moderator analyses, three variables were examined in pooled subgroups: (a) primary outcome (alcohol, marijuana, cocaine/stimulant/opiate, or polydrug), (b) treatment type (cognitive-behavioral, cognitive-behavioral combined with pharmacotherapy, or cognitive-behavioral combined with another psychosocial treatment), and (c) comparison type (no-treatment or wait- list control, passive or usual service comparison, theoretically active comparison, and no

cognitive-behavioral adjunct comparison). This latter subgroup included studies of cognitive-behavioral intervention added to another psychosocial treatment where the comparison was that treatment alone (Magill & Ray, 2009, p. 519).

Discussion of CBT Efficacy

Consistent with the assumption that CBT is an effective treatment approach, Magill and Ray (2009) reported that, "Across a large, diverse, and rigorous sample of randomized trials, CBT for adult substance-use disorders demonstrated a small, but statistically significant, effect over comparison conditions" (p. 521). Meta-analyses of other alcohol or illicit drug treatments show effect sizes typically in the small to moderate range (e.g., Burke et al., 2003; Prendergast et al., 2002, 2006). Magill and Ray (2009) went on to explain that 58% of patients receiving CBT fared better than patients in the comparison condition. Studies of CBT combined with an additional psychosocial treatment had a larger effect than either CBT combined with pharmacological treatment or CBT alone.

Treatment effects for CBT diminished over time, with somewhat lower effects at 6- to 9-month follow-ups, and markedly diminished effects at 12 months. The authors posited that future research will need to clarify the mechanisms of ongoing reduction in substance use (e.g., continued coping-skill use) in CBT to inform treatment adaptations that promote longer-term treatment gains. Magill and Ray's (2009) meta-analysis found that CBT may be particularly effective with marijuana-use disorders, with women, when combined with an additional psychosocial treatment, and when delivered in a brief format (p. 524).

The next portion of this literature review will provide an in-depth look at numerous substance abuse intervention strategies, which help to shed light on their efficacy. Cognitive

Behavioral Therapy interventions such as relapse prevention and contingency management are explored first.

Relapse Prevention (CBT Treatment)

Treatment Description

The birth of relapse prevention started with the work of Marlatt and Gordon in 1985, which established the addiction behavior model. According to them, "Relapse Prevention is a self-management program designed to enhance the maintenance stage of the habit- change process" and its goal is to "teach individuals who are trying to change their behavior how to anticipate and cope with the problem of relapse" (Marlatt & Gordon, 1985, p.3)

Most behavioral based RP models posit that when clients are able to face high-risk situations and refrain from using substances, his or her sense of self-efficacy is enhanced. Alternatively, when an individual's coping skills are insufficient, they are more likely to relapse. A client with a substance abuse problem is viewed as being vulnerable to triggering situations as a result of failure to change basic beliefs about the advantages and disadvantages of addiction. This illustration represents the importance of cognitive restructuring and outlines the basic tenets of the RP model. Brennan (1998) noted that, "The first step in the restructuring process is to help the client examine his/her beliefs regarding the positive/negative aspects of drug/alcohol use" (p. 76).

This approach helps clients to see inconstancies in their thinking. At this point, clients are encouraged to contemplate the advantages and disadvantages of using substances. Clients also develop an understanding that the consequences of using substances outweigh the perceived benefits, which allows them to become more capable of facing high risk scenarios without resorting to using or drinking. As a result, self-efficacy is enhanced and an internal locus of

control may be promoted. Once this is ascertained, it reinforces the reality that substance abuse is problematic (Brennan, 1998, p. 76).

Similarities/Differences between RP and CBT

Relapse prevention is a CBT treatment, which has been modified in order to address problems associated with addiction including the following populations; alcoholics, smokers, heroin addicts, overeaters and compulsive gamblers. Relapse Prevention (RP) is based on experimental studies, clinical observations, and intervention trials. It assists clients in their pursuit to change their behavior.

Marlatt and Gordon (1985) were able to isolate certain recurring relapse precipitators, including negative emotional states (35%), social pressure to use (20%) and interpersonal conflict (16%), which lead to an understanding about the need for an intervention designed to target high-risk situations if addictive behaviors are to be arrested (Brennan, 1998, p.13). Therefore, RP represents an evolution in CBT designed to address addiction.

Treatment Implementation

In order to provide contextual information regarding Relapse Prevention's execution, it is important to start with an understanding of relapse that highlights its difficulties. White et al. (2002) viewed relapse as inevitable; their contributions to the understanding of alcoholism and drug dependence centered on a pessimistic view about the "treatability" and long-term prognosis of addictive behaviors. This view is representative of the challenges faced by the early mental asylums that Carl Jung witnessed. During its infancy, alcoholics were admitted to these asylums and were viewed to be untreatable. In the 1920s, Carl Jung made the pronouncement that their prognosis was based on observations that only patients with profound spiritual experiences were viewed as being motivated enough to change their drinking behavior. This insight is explored

further in the 12-Step portion of this dissertation. There are, however, exceptions to this rule. Alan Marlatt, in the early 1970s, challenged this conceptualization of relapse. Donovan and Witkiewitz (2012) ascertained that:

> The pioneering work of Alan Marlatt and his colleagues, initiated in the early 1970s, challenged the then prevailing disease conceptualization of addictions, provided a vastly different perspective, shifted the paradigm in our understanding of factors contributing to and maintaining substance abuse, and presented a more hopeful possibility that loss of control and relapse need not be inevitable. (p. 204)

In addition, Donovan and Witkiewitz (2012) reported that the current literature on substance abuse includes many references to RP. The reason for this is that many addicts encounter relapse on their road to recovery. Therefore, in order to increase the efficacy of treatment modalities designed to reduce SUD, it is important to help clients understand the process of relapse. One way this is accomplished is by helping substance abusers to change their habits, which are closely associated with relapse. In addition, this approach helps clients to become self-advocates. Irvin et al. (1999) conducted a well-respected study that investigated the issues pertinent to implementing relapse prevention. His study provides evidence that RP is a successful intervention to use with substance abusers and it is explored further under the effectiveness heading of this dissertation.

As McHugh et al. (2010) advised, dissemination efforts are often challenging because the use of RP is often scarce or nonexistent in service provision settings. One reason that has been cited involves the commonly held belief that addiction is a moral failing rather than a brain disease, thus preventing the adoption of a medical model. Additionally, dissemination of RP is

also difficult because there is a scarcity of resources available to implement new treatments. Therefore, there is a significant resistance to change with organizations and individual clinicians.

Strengths of Relapse Prevention

Irvin (1999) reviewed a meta-analysis of RP across 26 studies examining alcohol and drug use disorder, as well as smoking, and found a small effect ($r = 0.14$) for reducing substance use, but an increased effect ($r = 0.48$) for improvement in overall psycho-social adjustment. This modality works well at targeting and preventing high-risk situations, increasing problem-solving, and enhancing coping skills.

It is often difficult to identify the lines that differentiate one form of treatment from another. In other words, elements of RP are enmeshed with CBT. This same concept holds true with many of the other treatment modalities that are included in this literature review. This homogeneity is best accounted for with the application of meta-analytic studies. They address some of the difficulties outlined in this review by investigating heterogeneous components of the various therapies available. Although the literature poses some problems when evaluating the effectiveness of various treatment modalities, it is clear that evidence-based strategies are the most widely accepted forms of drug treatment interventions.

Limitations of Relapse Prevention

The literature indicates frequently that it is difficult to evaluate the effectiveness of RP because it has become a general term used to describe interventions that prevent relapse. An example of this is the notion that RP is often viewed within the context of CBT (Donovan & Witkiewitz, 2012). Relapse Prevention targets ambivalence to change, however, there are many barriers to this approach. Substance abusers are frequently unable to discern whether or not substance use is posing enough of a difficulty in their lives to warrant change. Therefore, this

approach has a limitation in targeting clients before they have significant consequences of their actions. Although some high-risk situations appear nearly universal across addictive behaviors (e.g., negative affect), high-risk situations are likely to vary across behaviors, across individuals, and within the same individual over time (Hendershot et al., 2011, p. 6). According to clinicians and experts in the field, deficiencies in areas of employment, family, legal, and social environments are indicators of abuse.

Effectiveness of Relapse Prevention

This section supports the argument that Relapse Prevention (RP) is an effective strategy to use with substance abusers, particularly in the short term (six months). It also highlights that CBT and RP share similar characteristics such as the development of coping skills and the enhancement of self-efficacy. Allsop et al. (1997) concluded that, "Over the last two decades, relapse prevention has emerged as a major focus of the treatment of drug problems" (p. 61). This statement captures the significance of RP within the field of addiction treatment, and it has been mirrored by many other seminal figures who are well known within the profession of psychology. In order to report on the effectiveness of RP, it is worth noting its historical relevance.

Since RP's inception there has been major outcome studies, meta-analyses, and empirical findings that are relevant to the aforementioned tenets of the RP model. At a well-known Alcohol Treatment Unit (ATU) in Scotland, Allsop et al. (1997) conducted a controlled trial of a relapse prevention program with male problem drinkers (n = 60). The ATU is a rehabilitation center that has been empirically studied by numerous researchers who are influential authors within the field of Relapse Prevention. The participants were evenly divided (n = 20) into three

specific groups: relapse prevention, discussion (control group), and no-additional treatment (control group).

The RP group was designed to accomplish goals that are consistent with the RP model. In the RP group, the treatment package aimed to develop, enhance, and maintain a commitment to change drinking behavior, identify relapse precipitants, develop skills to cope with relapse triggers, increase self-efficacy, and encourage recognitions that a "lapse" does not lead to inevitable relapse and that strategies are available to prevent a "full blown" relapse. These goals are consistent with the CBT model and this instance is another representation of how many of the therapeutic interventions discussed share similar characteristics.

As Allsop et al. (1997) advised, "The format of the group was essentially problem-focused, behaviorally orientated and activity-based" (p. 65). Subjects were required to have participated in treatment on no more than one occasion in the previous six months and to have been detoxified for at least 10 days. Allsop et al.'s study included follow up measures at six and 12 months. In the discussion group, participants were encouraged to verbalize and develop their commitment to change their drinking behavior.

Supporting Allsop et al.'s (1997) hypothesis, the RP program produced more positive outcomes with regard to self-efficacy compared to the discussion control group, and with a significantly greater probability of total abstinence than all controls over the first six-month follow up. In this study, 81% of problem drinkers resumed within one year (Gottheil et al., 1981). Also, the RP program was associated with longer survival time to an initial lapse and relapse than the control groups. However, at the 12-month follow up, treatment effects declined substantially. This provides one perspective about the durability of evidenced-based treatments for substance abuse. Affiliation with 12-step programs have been shown to positively impact

abstinence in the long-term following the administration of evidenced-based interventions such as RP.

Allsop et al. (1997) ascertained that, “The relapse prevention program was an effective treatment in the short term and that longer-term impact may require greater focus on maintenance factors, such as the individual’s environment” (p. 61). The authors reported that the current relapse literature places inappropriate emphasis on an individual’s capacity to resist temptation and negates attention to reducing the temptations themselves.

Discussion of Relapse Prevention

The literature emphasizes the importance of skills training for alcoholics. This is problematic because the newly acquired skills may not be deployed. Self-efficacy has been shown to assist clients in mobilizing their relapse prevention skills and has strong support for improving treatment outcomes (Allsop et al., 1997, p. 62). One weakness of Allsop et al.’s (1997) study is that it lacks a discussion about self-help groups and their relationship to enhancing or detracting from the self-efficacy construct explored in their report. This may provide a way to address the study’s findings concerning difficulties in RP being effective over the long term.

As mentioned earlier, Irvin et al. (1999) provided evidence that RP is a successful intervention to use with substance abusers. Their meta-analysis included 26 studies with 9,504 participants. The studies focused on the effectiveness of RP with alcohol use, smoking, poly-substance use, and cocaine use. The findings indicate that RP was a successful intervention for reducing substance use and improving psychosocial adjustment. Effect sizes indicated that RP was generally successful in reducing substance use (r = .14) and improving psychosocial functioning (r = .48), consistent with its purpose as both a specific and global intervention

approach. Moderation analyses suggested that RP was consistently efficacious across treatment modalities (individual vs. group) and settings (inpatient vs. outpatient). RP was most effective for reducing alcohol and poly-substance use and less effective for tobacco and cocaine use. Irvin et al. (1999) concluded that RP was broadly efficacious across substances of abuse.

Magill and Ray's (2009) findings were congruent with the previous analysis conducted by Irvin et al. (1999). Their meta-analysis utilized 53 controlled trials of CBT for substance use disorders. The authors indicated that the studies they used were based on the RP model. It is therefore difficult to evaluate the comparative effectiveness of RP because it has become increasingly embedded within the CBT framework. The meta-analysis by Irvin et al. (1999) found that "58% of individuals who received CBT had better outcomes than those in comparison conditions" (p. 522). These studies illustrate a problem associated with evaluating the comparative effectiveness of CBT with other forms of treatment. In other words, the lines are often blurred between various CBT interventions such as RP and Contingency Management as each treatment strategy evolves in order to meet the needs of those who suffer from substance abuse.

Relapse Prevention Integrated with Other Approaches

MBSR

As mentioned previously, RP is closely linked with alternative forms of treatment like CBT and CM. Vallejo and Amaro (2009) developed a Mindfulness-Based Stress Reduction program (MBSR) administered with the purpose to both offer skills training and provide Relapse Prevention in a community-based addiction treatment setting. One of the advantages of this approach is that the techniques illustrated may be practiced at home, which allow it to be cost effective. The sample included 318 highly marginalized and poor African American and Latina

women with histories of trauma. The authors proposed that substance abuse can be viewed as a maladaptive response to stress, discomfort, and emotional pain. Thus, the article focused on the correlation between stress and addiction. Vallejo and Amaro (2009) noted that the association between stress, triggers to use, and relapse is very strong. This is representative of a pattern that has emerged in the literature and involves the interconnection between various components of the treatment modalities.

The authors explored the effectiveness of implementing MBSR with the goal of developing positive coping skills and improving treatment outcomes. The connection between the positive coping skills acquired in MBSR can be related to the coping skills attained in CBT. This study illustrated that addiction is related to many other factors such as impulsivity, depression, anxiety, and co-occurring disorders.

According to Vallejo and Amaro (2009), the participants of this study were evaluated by structural interviews that contained 13 items. The first question was, "How much did you enjoy participating in the group?" The second question asked, "How much did you learn to change your attitude toward stress?" In order to be succinct, the remaining 11 questions are not included in this review, however the findings of this study are important to note. All but two items showed statistically significant improvements from 2003 (1st year implementation) to 2006 (2nd year implementation). The differences in these items are not as relevant to the current survey of the literature as are the results of the study, therefore an investigation of them is not included here. Participant satisfaction was high ($M = 3.4$, $SD = .3$), but completion was modest (36%). Linear regressions examining change in addiction severity and psychological functioning by dosage (dosage = time) showed that higher dosage was associated with reduced alcohol ($\beta = -.07$, $p < .05$), drug severity ($\beta = -.04$, $p < .05$), and perceived stress ($\beta = -2.29$, $p < .05$) at 12 months.

The outcomes were assessed using the addiction severity index (ASI; Vallejo & Amaro, 2009). Within the population observed, the findings suggested that MBSR reduces addiction severity and stress symptoms that are highly associated with relapse.

Although many of the results were promising, there were several problems associated with this study such as high dropout rates, varied trauma histories, and low literacy. Despite these difficulties, this study's positive outcomes contribute to the understanding of alternative forms of substance abuse treatment.

Contingency Management (CBT Treatment)

Treatment Description

Since the basic components of CBT have previously been outlined, before conducting an analysis of the articles in the following paragraphs (under the Counter Argument heading) that investigate the efficacy of CBT and Contingency Management (CM) when combined, it is important to describe a few basic elements of CM. CM is considered to be a CBT treatment, however, it has a different focus. Contingency management principles are grounded in operant learning theory and involve giving clients tangible rewards to reinforce positive behaviors such as abstinence. An example is that drug treatment programs offer rewards such as Starbucks cards to their clients for continually testing clean, attending therapy, and showing up for court. This is called Voucher-Based Reinforcement and is one of the central components of CM. There is substantial research associated with Contingency Management that supports its efficacy. CM is considered to be an evidenced based treatment.

Similarities/Differences between CM and CBT

As McHugh et al. (2010) advised, "CBT for substance use disorders varies according to the particular protocol used and—given the variability in the nature and effects of different

psychoactive substances—substance targeted" (p. 516). Relevant here is a brief investigation of Pavlov's dog experiment. This classical conditioning experiment has given way to a deeper understanding of addiction and how it relates to the similarities and differences CM has with CBT. Essentially, the experiment refers to a learning procedure in which a biologically potent stimulus (e.g., food) is paired with a previously neutral stimulus (e.g., a bell).

In the experiment, a dog was given food, which was then paired with a bell. What occurred was that the dog began to salivate once the bell was rung long after the food was removed. This experiment relates to the craving associated with addiction. When addicts ingest a biologically potent stimulus (drugs) they often associate social situations, environments, and certain people with the drug and the effect it has on them. Once the drugs are removed, craving is still produced in addicts when they go near bars or see past using friends. These are considered high-risk scenarios, which are addressed with CBT. Across CBT protocols there are many core elements that emerge. Consistent across CBT interventions is the use of learning-based approaches to target maladaptive behavioral patterns, motivational and cognitive barriers to change, and skill deficits.

According to McHugh et al. (2010):

> The core elements of CBT are intended to mitigate the strongly reinforcing effects of substances of abuse by increasing the contingency associated with nonuse (e.g., vouchers for abstinence) or by building skills to facilitate reduction of use and maintenance of abstinence, and facilitating opportunities for rewarding nondrug activities. (p. 516)

CM addresses this contingency by providing at home methadone doses, or rewards from fishbowl prizes. Fishbowl prizes are rewards such as gift cards that may be given to clients for

clean drug tests or exemplary attendance. It is important here to note the differences between classical conditioning and operant learning.

In classical conditioning, behaviors are modified through the association of the stimuli as described in the aforementioned experiment, whereas in operant conditioning, behaviors are modified by the effect they produce (i.e., reward or punishment). CM addresses the reward or punishment (operant learning) process, and this is one of its signature attributes. CBT and RP focus more on the classical conditioning aspect by increasing skills to deal with triggering situations and assisting clients to avoid locations that remind addicts of their substance use.

Additionally, CBT focuses on the cognitive distortions associated with substance abuse and helps addicts to make connections between their thoughts, feelings, and emotions surrounding drug use. Regarding CM, as McHugh et al. (2010) indicated, "in treatment, the question is how contingencies can be arranged to encourage initial experiences of abstinence and entry into nondrug activities" (p. 517). From a CM perspective, once this has been accomplished more long term and sustainable rewards should be established such as enhanced job, relationship, and social success.

CM Integration with Other Approaches

Counter Argument

There has been much research that explores which particular treatment modalities work best together for substance abuse treatment. The following article is very specific in its contextual framework, however, it is exemplary in that it describes just one of many different instances where combining treatment modalities actually detracts from their individual effectiveness.

The article by Carroll et al. (2012) explored the effectiveness of both CBT and Contingency management (CM) in treating cannabis addiction. The authors' hypothesis in this case was that combining CM and CBT would offset their weakness and improve cannabis dependence outcomes. The study indicated that using CBT alone was associated with the greatest rate of change concerning cannabis dependence. Carroll et al. (2012) demonstrated that one of the conclusions was that combining CBT and CM did not improve success rates of treatment for cannabis dependence in clients involved with the criminal justice system. This article offers a compelling argument that shows combining CBT and CM for some individuals addicted to cannabis does not enhance their effects.

A limitation of this study is its small sample size (127 young adults) and that it contained high dropout rates, which contributed to missing data. The data evaluated here provides a small snapshot into the effectiveness of CBT, CM, and substance use with a very specific sample of individuals (young adult cannabis dependent males in the criminal justice system).

CBT and CM

The following article critique investigates a randomized clinical trial by Rawson et al. (2006) entitled, "A comparison of contingency management and cognitive-behavioral approaches for stimulant dependent individuals" (p. 267). It provides yet another example where combining CBT with another strategy does not enhance its effects.

Rawson et al. (2006) illustrated that, "Previous research reported that CM and CBT are efficacious interventions for the treatment of stimulus abusers" (p. 267). The authors' study directly compared the effectiveness of CM and CBT alone and in combination in reducing stimulant use. The study utilized stimulant dependent adults (18 years or older, male and female; $n = 171$) during a three-year study period. Initially, 420 individuals attended one screening

session, and of this group, 177 individuals completed the two-week data collection process and were assigned randomly into the study. Of the 177 study participants, 160 were admitted with a diagnosis of cocaine dependence and 17 with a diagnosis of methamphetamine (MA) dependence.

The 177 study participants were assigned randomly into one of the three study conditions: contingency management (CM; $n = 60$), cognitive-behavioral therapy (CBT; $n = 58$) or combined CM and CBT (CM+CBT; $n = 59$). The interventions were conducted as follows, CM, CBT, or combined CM and CBT, 16-week treatment conditions. CM condition participants received vouchers for stimulant-free urine samples. CBT condition participants attended three 90-minute group sessions each week. CM+CBT participants received vouchers for stimulant-free urine samples and attended three 90-minute group sessions each week. The participants were interviewed at baseline and weeks 17, 26, and 52. Measures included psychiatric disorders and alcohol and drug use and associated social problems.

This article provides an informative date point that contributes to answering the research question in this dissertation, "What is the relative effectiveness of the different treatment modalities within the scope of this review that are available to therapists for treatment of substance abuse?" The authors found that when CM and CBT are combined together, there is no additive effect. This finding is not consistent with the authors' hypothesis that combining CBT with other forms of treatment produces the most favorable outcomes. The findings indicate that CM showed efficacy during treatment application more so than did CBT however, CBT produced comparable longer-term outcomes. Rawson et al. (2006) reported that, "CM is useful in engaging substance abusers, retaining them in treatment and helping them achieve abstinence from stimulant use" (p. 267).

Mirroring some of the aforementioned challenges in determining the most efficacious treatment, or combined treatments for substance abuse, is an article by Linehan et al. (1999). This article evaluated outcomes associated with Dialectical Behavior Therapy (DBT) for patients with Borderline Personality Disorder (BPD) and Drug-Dependence.

The reason Linehan et al.'s (1999) article is referred to here is because DBT contains elements of CM, including rewarding behaviors, which mitigate symptoms associated with substance abuse. Another reason this article is referenced here is because the research conducted by Linehan et al. (1999) provided a finding contrary to Rawson et al.'s (2006) assertion that combining treatments for substance abuse had no additive effect. Linehan et al. (1999) found that substance abuse, and co-morbid BPD requires a combination of evidence-based strategies to be optimally effective. The authors also illustrated some major difficulties associated with determining the most successful strategies to use within drug treatment facilities.

DBT and BPD

DBT utilizes many of the strategies contained within the CBT framework such as its emphasis on changing destructive behaviors. DBT also shares many of its features with Mindfulness-Based (MB) teaching, such as its focus on creating a therapeutic alliance and its emphasis on validating a client's thoughts and feelings.

One of the patterns, which emerged within the context of this study that relates to the rest of this literature review, is with regard to the enmeshment of components. Elements of DBT are made up of contingency management (CM) techniques, such as the prevalence of rewarding positive behaviors. It is also acknowledged that relapse prevention (RP) strategies aimed at reducing the duration and severity of drug use are prevalent within DBT. All four commonalities illustrated above serve to reinforce the point that one of the difficulties associated with

evaluating the comparative effectiveness of CBT to other forms of treatment is that these drug treatment strategies are intrinsically linked.

Another theme that emerged within the research and is investigated in this review, concerns the prevalence of pharmacotherapy (see Appendix B). As mentioned previously, achieving the most effective outcomes with substance abusers that also have co-occurring disorders frequently requires a combination of evidence-based strategies and medication (Linehan et al., 1999). As a result, evaluating the effectiveness of various treatment modalities can be difficult. Researchers must account for a number of different variables when considering which particular strategy is most likely to produce the desired result.

Linehan et al. (1999) advocated for replacing medication with behavioral skills. The authors attempted to account for the many variables associated with this type of research by including a "transitional maintenance" stage. Individuals with opiate or stimulant addiction were given four months of drug maintenance, four months of drug tapering, and four months of no drug replacement. A limitation of this study is that it uses a population sample of only women. The treatment explored in this article compares its findings against treatment-as-usual (TAU). It is common practice to compare the treatment of interest to an assessment-only control condition. This approach was not possible in this study because of the high risk of suicide. The control condition therefore was designed to reflect the type of care patients would be receiving in the community. This deviation from the standard model, which normally applies to clinical trials, may have affected the research outcomes.

Linehan et al. (1999) found that in order to assist in evaluating the data collected, patients were given structured interviews and urinalyses. Individuals with BPD are more likely to have substance abuse issues than most any other psychiatric disorder. The statistics show that 67% of

clients with BPD are also addicted to substances. According to the data, 64% of patients given DBT stayed in therapy compared to only 27% of the TAU group. It seems as though the evidence found in this study indicates that individuals with BPD and substance abuse who are given DBT will have lower instances of drug abuse (Linehan et al., 1999).

The 12-Step Approach

Treatment Description

The 12-Step Program of AA and NA. There are two different 12-Step approaches to the treatment of substance abuse. The first of these approaches will be referred to as the program of AA and NA. The second of these approaches is called 12-Step Facilitation and will be outlined later once the program of AA and NA has been examined. The 12-step program of AA and NA involves acceptance of the disease of addiction, which is both chronic and progressive. This program promotes the idea that an addict has no control over his or her disease, that their lives have become unmanageable, and that willpower alone will not arrest the problem. The 12-Step program is an abstinence-based model that encourages surrender to a higher power and acceptance of the fellowship that contains other recovering members. Following recovery activities such as going to meetings, working with a sponsor, obtaining commitments, praying, meditating, and participating in service work are key elements of the program. What follows is list of the 12 steps of Narcotics Anonymous (Narcotics Anonymous, 2008).

1. We admitted that we were powerless over our addiction, that our lives had become unmanageable.
2. We came to believe that a Power greater than ourselves could restore us to sanity.
3. We made a decision to turn our will and our lives over to the care of God as we understood Him.

4. We made a searching and fearless moral inventory of ourselves.
5. We admitted to God, to ourselves, and to another human being the exact nature of our wrongs.
6. We were entirely ready to have God remove all these defects of character.
7. We humbly asked Him to remove our shortcomings.
8. We made a list of all persons we had harmed, and became willing to make amends to them all.
9. We made direct amends to such people wherever possible, except when to do so would injure them or others.
10. We continued to take personal inventory and when we were wrong promptly admitted it.
11. We sought through prayer and meditation to improve our conscious contact with God as we understood Him, praying only for knowledge of His will for us and the power to carry that out.
12. Having had a spiritual awakening as a result of these steps, we tried to carry this message to addicts, and to practice these principles in all our affairs.

In order to facilitate an investigation of substance abuse treatments, the above 12 steps of AA/NA are explored in the following paragraphs in a comparative format. Explaining each step of AA/NA in detail is not necessary in order to answer the question, "How do the treatments explored in this paper compare to one another with regard to effectiveness?" However, the most relevant components of 12 steps of AA/NA are investigated within the 12-Step Approach section.

The Relationship Between Third Wave CBT and the 12 Step Approach

According to Hayes and Hofmann (2017), "CBT has been through several distinct eras, generations, or waves" (p. 1). The first of these waves involved behavior therapy: the application of learning principles to well-evaluated methods designed to change overt behavior. This generation focused on classical conditioning and operant learning. By the late 1970s, behavior therapy had moved into the era of classic CBT. This second era involved information processing and focused on the role of maladaptive thinking patterns in emotion and behavior. The third wave emphasized contextual and experiential change strategies. It also contained elements of Buddhist teachings, including Mindfulness-Based Cognitive Therapy (MBCT) and Mindfulness-Based Stress Reduction (MBSR; Hayes & Hofmann, 2017, p. 1). The third wave CBT most closely relates to the 12-step approach and thus, for the purpose of this review, the first and second waves of CBT are not explored within the Twelve-Step Approach section.

Dermatis and Egelko (2014) explored the relationship between the AA model and the "third wave" of CBT. According to the authors, there are several similarities which link the 12-step approach with the Buddhist model. First, both approaches focus on promoting positive change and spiritual growth. Second, each treatment modality contains components of CBT and is designed with the purpose of enhancing self-efficacy and awareness. Finally, both techniques encourage self-reflection and meditation. These two models differ however with regard to their conception of a "higher power." In order to allow participants to create their own interpretation of God, the 12-step model uses the term "higher power" interchangeably with God in order to be all-inclusive.

Dermatis and Egelko (2014) claimed that the Buddhist model focuses on spiritual principles and utilizes them as an instrument for change. The 12-step model also utilizes spiritual

principles such as honesty, open mindedness, and willingness. In addition, it also refers to God as a central guiding force. Each of these approaches incorporate fundamental concepts embraced by CBT. The idea that individuals can become aware of the psychological processes that relate to their thoughts, feelings, and behaviors is a premise of CBT. The claims of Dermatis and Egelko (2014) relate to the ideas expressed by Linehan et al. (1999) in that they both advocate for a change in destructive behaviors. The purpose of mentioning these authors is to illustrate the connection between third wave CBT and the 12-step approach. This helps to categorize and provide clarification concerning their similarities. Also, each of them discussed Mindfulness-Based (MB) teaching such as its focus on creating a therapeutic alliance and emphasis on validating clients' thoughts and feelings.

Dermatis and Egelko (2014) argued that the Buddhist CBT and AA models both propose that the key to alleviating suffering lies within the context of a spiritual awakening. Although these two approaches differ in how this task is to be accomplished, the end goal is the same. *The Eleventh Step* of AA calls for prayer and meditation with the purpose in mind of enhancing conscious contact with God. Within the AA doctrine, the path of meditation is not specific. However, the mindfulness meditation within Buddhist teaching provides some guidelines that serve to assist individuals in their pursuit towards enlightenment. Some of these guidelines include a focus on the awareness of the mind, body, and emotions. The mindfulness teaching focus also includes assisting clients to increase their awareness and acceptance of the present moment without judgment. Dermatis and Egelko (2014) presupposed that the 12-Step process is oriented toward non-attachment and an awareness of cognitive distortions. With regard to the application of this model to substance abusers, the effect is that their thoughts become less condemning and judgmental. In AA, members also learn to become more self-accepting through

The Fourth Step. This step requires that members create a personal inventory whereby they investigate their assets and liabilities.

The Ninth Step affords substance abusers an opportunity to make amends for their wrongs, which further assists them in becoming comfortable with "who" they are. This process relates to the article by Kiluk et al. (2010) because it illustrates how an increase in self-awareness and the introduction of coping skills can help substance abusers to change their behaviors. In the 12-step model, addicts are encouraged to face their problems as opposed to avoiding them. Modeling of appropriate behavior is encouraged through sponsorship and group participation. This process may facilitate many of the psychological well-being characteristics outlined by DeLucia et al. (2016), such as self-acceptance, personal growth, purpose in life, and positive relations with others.

Twelve-Step Facilitation

This approach to therapy is a manualized treatment program that was developed by The National Institute on Alcohol Abuse and Alcoholism (NIAA) in 1997 with later contributions by the National Institute on Drug Abuse (NIDA; NIDA, 2018). This approach to substance abuse occurs over 12 sessions and patients are encouraged to attend AA meetings and to maintain journals of their AA attendance and involvement. Therapy sessions are highly structured and follow a similar format each week. During these sessions, clients explore their symptoms, such as dysfunction in their work, love, or play lives. The therapist assists the client with discovering the value in attending AA meetings, reviews the themes explored during their meetings, and sets goals for their participation the following week.

The treatment manual, entitled the *Twelve Step Facilitation Therapy Manual,* is utilized by the therapist as an intervention strategy which provides a step-by-step process designed

primarily to maintain abstinence from alcohol, however, it is also used to treat stimulant and opiate abusers. Twelve-Step Facilitation (TSF) focuses on steps 1 through 5 of AA and it is grounded by the assertion that alcoholism is a spiritual and medical disease. The manual was initially designed for outpatient treatment in an individual format, but has been used in group formats and with aftercare clients (those who have attended inpatient treatment before). It involves cognitive, behavioral, and spiritual principles that are at the core of 12-step fellowships such as AA and NA (PMRG, 1997, preface x).

Treatment Implementation

In order to evaluate the comparative effectiveness of the various modalities available for clinicians, issues concerning implementation should be addressed. With regard to TSF, there is a substantial amount of literature which supports its efficacy. However, implementing this approach poses significant challenges. According to Nowinski et al. (1995), who developed the Twelve Step Facilitation (TSF) manual, facilitation of the manual requires training on the part of the therapist even though it is manual guided. Facilitation of this manual requires considerable clinical skill to implement properly. There are currently a number of supervision opportunities from a large community of clinicians that are available to educate future administrators of the manual. There are numerous didactic online workshops and computer assisted trainings available to clinicians that may assist them in implementing the TSF manual with clients. According to Sholomskas and Carroll (2006), “Computer-based training may be a feasible and effective means of training larger numbers of clinicians in empirically supported, manual-guided therapies” (p. 939). Some of the issues pertinent in implementing TSF and many other evidenced-based approaches include a therapist’s ability to stay focused, maintain structure within each session, and engage in constructive confrontation. Accordingly, it is recommended that prospective

facilitators have a minimum of a master's degree (or equivalent) in a counseling field and a minimum of 1,000 hours of supervised counseling experience as prerequisites for competence in TSF.

In addition, it is recommended that facilitators treat a minimum of two complete cases (minimum of eight sessions each) under supervision prior to attempting to conduct TSF unsupervised. A TSF facilitator should have read all AA/NA literature that clients will be asked to read and should be familiar with at least AA and Al-Anon meetings from personal experience (minimum of six meetings each). One of the reasons that facilitators are required to attend AA/NA meetings is because these programs have their own unique language and slogans associated with them. Some examples of common terms include, "Progress not perfection," "One day at a time," and "Meeting makers make it." Facilitators must become fluent with the discourse within meetings because clients will frequently refer to them in session. Finally, it is not recommended that a facilitator whose own views are unsympathetic to the primary goals of TSF (e.g., abstinence, active involvement in 12-step fellowships) seek to implement this model (Nowinski, 2013).

Strengths of the 12-Step Approach

Brennan (1998) noted that, "Some clients do poorly when their treatment is too structured while others may show signs of decompensation unless the therapist goes to great lengths to ensure that the therapeutic environment is safe and secure" (p. 75). Clients who do poorly when their treatment is too structured are a better fit for the CBT approach to treatment. The reason for this is that there is more freedom for "self-determination" or "self-expression" in some ways with the CBT approach. CBT allows clients to explore the idea that a person has an ability to control their own life and can therefore assert control over their substance using behavior with

the application of therapeutic intervention strategies. AA/NA are in direct opposition to this premise. *The First Step* of AA/NA is, "We admitted that we were powerless over our disease and that our life had become unmanageable." *The Third Step* of AA/NA states that, "We made a decision to turn our will and our lives over to the care of God as we understood him." The connotations in these steps are that individuals must surrender to a higher power and that their lives are unmanageable without the care of God. CBT allows clients to explore the idea that recovery from alcohol or substances does not require the belief in a higher power.

The supportive nurturing environment of the 12-step model promotes safety because it allows clients to obtain support and validation from peers that have a similar experience. One reason that the 12-step approach does not allow for self- determination is because it has a critical spiritual element, whereas CBT treatment does not. Although, according to AA/NA, the only requirement for membership is the desire to stop using or drinking. AA/NA attempts to account for this "self-determination" element by also outlining that a "higher-power" can be anything as long it is loving and kind and greater than oneself. Nonetheless, it is worthwhile to note that clients who are averse to therapy that is more "narrow" or "focused" in nature may respond better to CBT treatment.

Limitations of the 12-Step Program

In order to address the limitations of the 12-Step approach to treating substance abuse, an exploration of the four available treatment models is necessary. The reason for this is that most evidence-based treatment approaches that are designed to address problems of addiction do not require a belief in a higher power.

Brickman et al. (1982) investigated four treatment models regarding what part addicts play in the development of the condition and what part that person plays in the arrest of the

condition. According to AA and NA, the disease of addiction may never “arrest” or cure their condition. Addicts only receive a daily reprieve based on the maintenance of their spiritual condition with the help of the steps, a higher power, and the fellowship.

According to Brickman et al. (1982), the first model is called the Moral model, and it views addicts as morally weak and lacking the willpower to prevent the development of the addiction or to arrest it. The second model, the Medical Disease model, is the opposite of the moral model. In this model, the addict is not the cause of the problem (biological/genetic factors drive the addiction), nor does the addictive person have the training (control) to change the problem in that it requires a medical intervention to address it. The third model, the Enlightenment model, differs only slightly from the Medical Disease model. It removes the addicted person from blame for developing the condition in the same way as advocates of the Medical Disease model. It differs only in the reasons for recovery. The Enlightenmentites would argue that the addicted individual is incapable of changing his/her addictive behavior on his/her own because willpower alone is insufficient. Rather, change comes about through the intervention of a Higher Power. The fourth model, the Compensatory model, views the addicted person as not being wholly responsible for the development of the problem (as various biopsychosocial factors causally intervene), but holds that he/she is responsible for arresting it (Brennan, 1998, p.79).

Self-help groups such as AA and NA are founded on a combination of the Medical Disease Model and the Enlightenment model. CBT on the other hand, endorses the Compensatory model. Therein lies a weakness of the 12-step model. It is not well suited to helping those who suffer from substance abuse who believe they are solely responsible for curing

their problem, and who do not believe that help from a higher power is a necessary part of treatment.

Limitations of Twelve-Step Facilitation

As mentioned previously, TSF is a manualized treatment approach and computer-based trainings are available by the authors of the manual. Additionally, TSF handbooks and training seminars are available. However, according to SAMHSA's National Registry of Evidenced-based Programs and Practices (2008), no materials are available to assist program implementers in recruiting clients or addressing organizational implementation. As of 2020, this review found no indication that such materials currently exist. Further, there are few ongoing coaching and consultation resources available to support implementers beyond initial training. Another limitation of TSF is that there is no protocol to support implementation fidelity (how closely a set of procedures were implemented as they were supposed to have been; p. 9).

The 12-Step Program of AA/NA vs. Twelve Step Facilitation

The 12-Step program differs from twelve-step facilitation because it is a community-based program that has no membership fees or dues. In 12-step meetings, no "cross talk" is allowed, which means that when members share (their experience, strength, and hope), they are not allowed to give feedback to other members. This is in direct contradiction to the tenants involved in one-on-one therapy and in many other substance abuse treatment process groups. Twelve-Step Facilitation is designed for use in therapy and is thus fundamentally different. However, in the sponsorship portion of the 12-step program, feedback is considered a crucial component in working each one of the 12 steps. The 12-step program is described in further detail later in this review.

Effectiveness of the 12-Step Program of AA/NA

Twelve-step groups such as Narcotics Anonymous (NA) and Alcoholics Anonymous (AA) are fellowships that seek to provide an environment that is based on mutual understanding and spiritual principles. Self-help groups such as AA and NA are designed to provide support and are made up of individuals who suffer from the same illness. As previously mentioned, some of the components that are common within these groups are behavioral, spiritual, and cognitive mechanisms. Although there is no doubt that 12-Step groups may be effective with many addicts, there in not enough evidence to conclusively show that it is effective as a stand-alone treatment (Jhanjee, 2014). Consistent with Jhanjee's (2014) assertion, according to the NIDA Principles of Drug Addiction Treatment: A Research-Based Guide (NIDA, 2018), "Although 12-step groups and programs are prevalent, scientific studies have not yet determined conclusively their efficacy" (p. 46). While the efficacy of 12-step programs (and twelve-step facilitation) in treating alcohol dependence has been established, the research on its usefulness for other forms of substance abuse is more preliminary, but the treatment appears promising for helping substance abusers sustain recovery.

This review found mixed results concerning the efficacy of these approaches, which may have been influenced by methodological challenges such as self-selection bias, high dropout rates, and spiritual focus that is difficult to measure. Humphreys et al. (2014) indicated that observational studies of 12-step groups' effectiveness are vulnerable to self-selection bias because individuals choose whether or not to attend. It has been argued that those who attend 12-step groups are more motivated to change. Studying the 12-step model is also particularly difficult because many scientifically inclined researchers are opposed to integrating psychotherapy and the 12-step model due to its adherence to the "enlightenment model" (higher

power focused; Brennan, 1998, p. 76). The position taken by the current dissertation may be highlighted in the following quote by Jerome Frank (1976) when he stated, “little glory derives from showing that the particular method one has mastered with so much effort may be indistinguishable from other methods in its effects” (p. 74).

In the past decade, a large body of literature has supported the perspective that Alcoholics Anonymous involvement is associated with better outcomes on alcohol-related psychological and social measures. Walitzer et al. (2009) illustrated that numerous scientific teams have conducted randomized clinical trials in which professionally provided AA-involvement facilitation interventions were shown to improve patient outcomes. These randomized trials report on the efficaciousness of AA facilitation, and not AA per se.

Jhanjee (2014) illustrated that 12-step groups are comparatively effective in reducing alcohol dependence compared to other approaches such as CBT and motivational interventions, which contradicts the findings of the MATCH trial. Jhanjee ascertained that a Cochrane database review in 2009 evaluated the findings of eight trials involving 3,417 people. None of the studies analyzed in the Cochrane database review definitively proved that 12-step groups are effective in reducing alcohol dependence (Jhanjee, 2014). In order to provide a general overview of the modalities examined in this review, the aforementioned comparative analysis represents a small snapshot of how available research is examined in this dissertation in order to systematically survey the relative effectiveness of substance abuse treatments. There are few studies which evaluate the comparative effectiveness of various treatment strategies for the treatment of substance abuse. This makes the current investigation all the more relevant.

Worley et al. (2012) article outlined in the following paragraphs is congruent with the research conducted by Linehan et al. (1999) because it also examines substance abuse within the

context of co-occurring disorders, pharmacotherapies, and CBT. It is acknowledged that the findings explored below have already been examined, albeit in relatively limited detail up until this point. Many of the claims within this literature review support the idea that a combination of treatment modalities is most effective when combating the symptoms associated with substance abuse. In addition, it is common for substance abusers to have co-occurring disorders.

Worley et al. (2012) conducted a clinical trial at a Veteran's Affairs Health Care Center. The trial was designed to evaluate the effectiveness of a 12-step outpatient group with substance abusing patients who also had Major Depressive Disorder (MDD). The study used 209 veterans diagnosed with alcohol, stimulant or marijuana dependence, and substance-independent MDD. The trial utilized twelve-step facilitation (TSF) and integrated cognitive-behavioral therapy (ICBT).

The research was conducted over a six-month period and included a combination of pharmacotherapies. The findings show that within the population surveyed, TSF and CBT significantly lowered depression. In addition, it has been shown that a reduction in depressive symptoms contributes to higher attendance rates at 12-Step meetings. Worley et al. (2012) illustrated support for the assertion that reduced depression can be the vehicle through which 12-Step attendance may reduce future drinking.

As stated previously, the 12-step model is often successful at reducing substance abuse when used in combination with other forms of treatment. This finding is significant because the 12-step approach to addiction is cost effective. Many addicts suffer from unemployment, homelessness, and financial problems, both before and after treatment. Therefore, substance abuse recovery groups that have no membership fees or dues are important to consider. It is recognized, however, that the 12-step approach to addiction does not have a significant amount

of research associated with it, and there is room for future clinical trials in this area.

Frequently, when adults seek out recovery from substance abuse, they are faced with the reality that they have very few life skills. In community-based recovery programs, these substance-abusing clients are introduced to coping skills and healthy support networks such as Alcoholics Anonymous (AA) and or Narcotics Anonymous (NA). Rynes et al. (2013) illustrated that, "Twelve-step programs are the most popular community-based resource for recovery from alcohol and substance use problems in the United States" (p. 167). AA and NA provide individuals with an opportunity to utilize other addicts to assist in the regulation of thoughts, behaviors, and emotions. These community-based programs provide a secure base upon which the relational aspect of treatment may be developed.

Both NA and AA focus on acting in accordance with spiritual principles, service work, self-reflective techniques (12-steps), honesty, open mindedness, and willingness. The 12-step approach to recovery suggests that substance abusers attend weekly meetings. Through this mechanism, personal accountability is emphasized. Rynes et al. (2013) indicated that, "Research has shown that increases in the size of abstinence-based social networks helps explain the association between 12-Step attendance and increased abstinence" (p. 167).

Members of these groups are encouraged to become honest about the nature of their disease. They view their problems as stemming from selfishness and self-centeredness. Individuals attempt to change their thinking by changing their actions, which is accomplished by helping other addicts to recover, developing a relationship with a higher power, and becoming more self-aware. Addiction is also characterized by self-deception. Substance abusers frequently report that they continue to do the same things over and over and expect different results (Rynes et al., 2013).

The first step of recovery is to recognize that substance abusers are powerless over their disease and that their lives have become unmanageable. Addicts are encouraged to recognize that they need the help of their peers to remain abstinent from substances. This component of therapy is particularly effective when introduced to individuals with avoidant attachment tendencies (Rynes et al., 2013).

Motivational Interviewing

Miller and Rollnick (1991) defined motivational interviewing as "a way of being with a client, not just a set of techniques for doing counseling" (p. 39). This quote epitomizes the essence of Motivational Interviewing (MI). It is a treatment approach that allows substance abusers to resolve the ambivalence that prevents them from achieving their personal goals. For addicts, this indecisiveness about change is normal and may be overcome with the application of MI strategies.

Many substance-abusing clients start therapy with diminished motivations to change. One of the reasons for this is that they have rigid thinking patterns which keep them from realizing that there are other ways of behaving, feeling, and perceiving themselves. This inflexible thinking frequently keeps them stuck in the problem (addiction) as opposed to the solution (recovery). At some point in their addiction clients are aware that they have a desire to change. Mobilizing this desire into action is a much more difficult challenge. Frequently, clients with SUD who have intentions of stopping using fail to act on this desire once they have reached a therapist's office.

According to the Harvard Mental Health Letter published in January 2009, "The research shows clearly that moderation is unlikely to be successful for patients who already meet criteria for dependence, whether defined by the *DSM-IV* or by a variety of assessment tools" (p. 1).

Additionally, Laudet (2008) illustrated that substance abusers often try switching from one drug to another, changing geographic locations, or moderating their use with little success. Eventually, many resign to the fact that there is little hope of finding a new way to live. Motivational interviewing helps clients look at their problems differently than they previously thought possible. This approach to therapy builds on Carl Roger's optimistic and humanistic theories about people's capacity to exercise free choice and changing through a process of self-actualization (Miller & Rollnick, 1991).

Treatment Description

Carl Rogers is the seminal figure of this modality and focuses on accepting the client regardless of what the person says or does. As mentioned previously, many clients with substance abuse problems have guilt and shame associated with their disease and the use of validation techniques helps clients to deal with these issues. This client-centered approach has been proven to be effective with substance abusers. This counseling tool deals with the ways in which individuals perceive themselves and involves unconditional positive regard (Noonan & Moyers, 1997).

According to Noonan and Moyers (1997), this modality helps to facilitate the client's ability to explore the emotionally charged experiences of his or her upbringing. In therapy, the client is allowed to revisit the scene of their traumas and abusive relationships, which often precipitate SUD. Clients are encouraged to observe these adversities from many different lenses. This allows clients to access affective-cognitive information that was not fully processed in awareness at the time of their traumatic events.

Utilizing this counseling style, the therapist interacts with their clients in a non-solving, sorting, or analyzing therapeutic space. This approach to therapy provides a nonjudgmental and

empathic approach that meets clients where they are. One of an MI therapist's goals is to develop the client's capacity to experience fears about not being able to cope with difficulties in their work, love, and play life in new ways that do not have to be frightening or rejecting. The therapist can recognize and reflect the emotional experiences of their clients through the use of self-disclosure. Further, consistent with MI principles, it is important to employ active listening techniques and roll with the client's resistances (Noonan & Moyers, 1997). During the initial phases of treatment, motivation to participate in treatment is a decisive factor, which affects treatment outcomes. In order to address this issue, motivational enhancement techniques have been developed and tested.

Treatment Implementation

Clients with SUD often speak of their inability to make choices for themselves. They describe a life plagued by suffering and defined by their substance of abuse. Once substance abusers have been overwhelmed by addiction, their ability to attend family functions, maintain healthy relationships, and sustain employment is significantly diminished. In other words, drugs control their lives. Motivational interviewing takes a stance where the therapist and the client interact in a democratic relationship. This defining characteristic helps the client to feel supported, understood, and accountable. According to Miller and Rollnick (1991), "Your role in MI is directive, with a goal of eliciting self-motivational statements and behavioral change from the client in addition to creating client discrepancy to enhance motivation for positive change" (p. 54).

From an MI perspective, when working with SUD clients, the use of discrepancy is a useful tool to facilitate change. This may be accomplished by bringing up incompatibilities with the client's long and short-term goals in relation to the negative consequences associated with

substance abuse. Clients will be optimally motivated to change when *they* come up with solutions to their problems. It is the therapist's role to help them find the answers, which are already inside of them, but have been hidden behind the mirage of their disease. One of the most important components of Motivational Interviewing is enhancing the therapeutic alliance. Many of the central principles explored in this section facilitate this objective.

Many clients have been taken advantage of as a result of participating in anti-social behavior associated with substance use. Using the therapist client relationship as a model helps clients to begin to feel safe enough to trust other people again. Clients have varying levels of motivation by the time they seek help. There are also variations in success ratios based on a client's levels of dependence. According to Miller et al. (1992), "as severity of alcohol dependence increases, the likelihood of being able to continue drinking moderately for an extended period decreases" (p. 33). Contingent upon a client's levels of dependence, some of them can change on their own while others require more formal treatment and support over the long journey of recovery.

Strengths of Motivational Interviewing

This low-cost approach to therapy is normally administered in two to four outpatient sessions. This strategy is effective, can facilitate change in high-risk lifestyle behaviors, and has held up across a wide variety of real-life clinical settings. Mobilizing the client's own resources for change makes this tool especially useful. It is compatible with health care delivery because it does not assume a long-term client therapist relationship. Motivational interviewing is a good starting point for treatment before the implementation of other interventions such as the 12-step model because it has been shown to increase adherence (Noonan & Moyers, 1997).

Limitations of Motivational Interviewing

Motivational interviewing does not have an official methodology for dealing with clients who are not ready for feedback. This approach to therapy is based on the idea that a client must be willing and able to work with a professional and change negative behavior. A client in denial will be unaffected by motivational interviewing questions and advice. Another limitation of MI is that a person may not understand the urgency of changing now. The client may understand that he or she is addicted to substances, but feel that change should happen later. This procrastination mindset is common with addiction (Edelman, 2017).

Effectiveness of Motivational Interviewing

Noonan and Moyers (1997) reported that, “a recent review of eleven clinical trials of motivational interviewing concluded that this is a useful clinical intervention . . . [and] appears to be an effective, efficient, and adaptive therapeutic style worthy of further development, application, and research" (p. 8). Of the 11 studies reviewed, nine found MI more effective than no treatment, standard care, extended treatment, or being on a waiting list before receiving the intervention. Two of the 11 studies did not support the effectiveness of motivational interviewing, although the reviewers suggested that the *spirit* of this approach may not have been followed because the providers delivered advice in an authoritarian manner and may not have been adequately trained. Burke et al. (2003) conducted a meta-analysis of controlled clinical trials on the efficacy of motivational interviewing that found “Effect sizes across studies in the small to moderate range for alcohol and the moderate range for drug use when compared to a placebo or no-treatment control group, and similar efficacy to active treatment comparisons” (p. 71). Evidence-Based psychosocial interventions such as Cognitive Behavioral Therapy (CBT),

Motivational Interviewing (MI), and Relapse Prevention (RP) are effective across many drugs of abuse (Jhanjee, 2014).

Integration of MI with the 12-Step Model

Integration of the 12-step model of recovery with MI may enhance their effects. The 12-step model is complementary because it is a long-term adjunct to MI's short-term duration. This section provides a synthesis of MI and 12-Step strategies and explores their efficacy for treating substance abuse. Many substance abuse treatment counselors have found that it is very common for clinicians in training to encounter clients who would benefit from their therapists having at least a basic understanding of the effectiveness and central tenants of the NA/AA program and its relationship to MI. Knowledge in this area helps to foster understanding and contributes positively to the therapeutic alliance, one of the central principles of MI. The six crucial components and mechanisms of change of 12-step groups are the utilization of a higher power, working the steps, attending meetings, reading the literature, involvement in service, and participation in the fellowship (Cloud et al., 2006).

Cloud et al. (2006) reported that:

> There is a substantial and growing body of literature suggesting that regular post treatment attendance in twelve-step programs significantly improves alcohol and other drug use outcomes; however, this same literature notes that the majority of subjects drop out or sporadically attend 12-step programs in the period following treatment. (p. 32)

These shortcomings associated with the research are often problematic when attempting to establish their efficacy. What has been substantiated is that positive attitudes (of the clinician) toward 12-step utility are associated with greater participation among substance abusing clients (Cloud et al., 2006).

Cloud et al. (2006) concluded that, “brief interventions consisting of one to four individual sessions are particularly well suited at facilitating transition of clients from one level of treatment to another and for improving treatment compliance” (p. 37). According to the authors, this evidence would seem to support the use of a brief MI intervention to improve post treatment weekly 12-step attendance. It is recommended that MI techniques be used prior to the application of the 12-steps.

Cloud et al. (2006) noted that in order to make progress toward the ultimate goal of increasing 12-step participation, the client must be accepting and motivated to engage in change related to the core problem (substance abuse). This component was highlighted in the previous MI limitations section. The authors explained that once this task has been satisfied, the counselor could engage the client in a motivational intervention directed at the targeted treatment compliance behavior (regular attendance at 12-step meetings). MI’s strengths in resolving ambivalence correlates positively with increased 12-step participation. Depending upon the client’s circumstances both internal and external locus of control may be investigated as they relate to positive outcomes for substance abusers.

Cloud et al. (2006) reported, “increased post treatment involvement in 12-step programs as an outcome associated with use of a brief MI intervention focused on initiating abstinence among patients in alcohol detoxification” (p. 40). The authors found that average 12-step meeting attendance in the sixty-day period following detoxification was twice as high among the MI experimental group compared with a detoxification-as-usual control group. These results support the argument that MI may be effective in facilitating post treatment 12-step attendance.

The religious and even spiritual references of the 12-step program are uncomfortable to various degrees for many individuals, including both participants and non-participants. Cloud et

al. (2006) indicated that twelve-step facilitation was more likely than other therapies to promote shifts in God beliefs. Clients terming themselves as religious/spiritual were more likely to attend AA after treatment than agnostic or atheistic clients (PMRG, 1997). Therefore, a positive outcome for substance abusers using this model does in some degree depend on their willingness to consider a relationship to a higher power.

Complementarity

Combining MI and 12-step groups appears to have positive outcomes when substance abusers have a desire to change. The difference between formal treatment (MI) and (NA/AA) treatment involves limited schedule of treatment vs. around-the-clock availability, fee based vs. no-fee based, role as client/patient vs. mutually supportive relations with peers, professional knowledge vs. experiential knowledge (Humphreys, 2012). It may be argued that these differences are complementary, and when combined, provide addicts with an optimal environment where they can recover.

It has been substantiated that MI can also increase 12-step participation and that there is a growing body of literature suggesting that regular post treatment attendance in 12-step programs significantly improves alcohol and other drug use outcomes. However, more research is needed in order to establish their efficacy. It is the combination of professionally administered, evidence-based MI techniques, with mutually supportive 12-step program participation that provides a multifaceted and effective approach to obtaining long term abstinence among substance abusers.

Harm Reduction

The following treatment approach for addressing the problem of addiction does not have a primary goal of abstinence. Rather, the goal of Harm Reduction is to minimize the negative

consequences associated with addiction through moderation and other mechanisms of change. This treatment strategy is not the focus of this dissertation; however, it is briefly referenced to illustrate that there are programs available which are not abstinence-based. The following examination includes a description of a study by Lee and Petersen (2009) that explores Harm Reduction and its utility in helping hard to reach populations, such as the addicted homeless.

The majority of substance abuse treatment programs in the United States rest on an abstinence-only service delivery model (Denning 1997, 2000; Marlatt, 1996). According to Lee and Petersen (2009), SAMHSA has compiled data regarding the national flow of admissions to specialty providers of substance abuse treatment. This Treatment Episode Data Set (TEDS) first originated in 1992 and it has conducted research annually up until the present. TEDS includes data on almost two million admissions reported by over 10,000 facilities in 50 states. The TEDS discharge data indicate that in 2001, 39% completed treatment (SAMHSA, 2002) and abstinence rates are also low. Project MATCH (1997) is a study which examined the fit between client and 12-step facilitation therapy (TSF), Cognitive Behavioral Therapy (CBT), and Motivational Enhancement Therapy (MET). According to NIDA (2020a), "Motivational Enhancement Therapy (MET) is a counseling approach that helps individuals resolve their ambivalence about engaging in treatment and stopping their drug use" (p. 1).

Lee and Peterson (2009) reported the following rates of abstinence during the first year after treatment; TSF 24%, CBT 14%, and MET 15%. According to the authors, these findings suggest that there are significant unmet treatment needs in the United States, making research on harm reduction-based treatment (non-abstinence based) important.

The Harm Reduction model accepts that for better and or worse, licit and illicit substance use is part of our world. Harm Reduction chooses to work to minimize its harmful effects rather

than simply ignoring or condemning them (Mate & Levine, 2010). This approach to substance abuse comes from a position that understands drug use as a complex, multi-faceted phenomenon that encompasses a continuum of behaviors from severe abuse to total abstinence, and acknowledges that some ways of using drugs are clearly safer than others.

Harm Reduction focuses on demarginalization of substance abusers. It also advocates for the quality of individual and community life and well-being. Cessation of all drug use is not a guiding principle of this intervention strategy. It does however, call for a delivery of non-judgmental, non-coercive provision of services and resources to people who use drugs and the communities in which they live in order to assist them in reducing harm. Harm Reduction posits that when drug users and those with a history of drug use provide input regarding the creation of programs and policies designed to serve them, the programs are more successful (Mate & Levine, 2010).

Study Analysis

A study by Lee and Petersen (2009) provides insights that illuminate conditions under which Harm Reduction for "hard-to-reach" populations are likely to occur. The study reported on stories of demarginalization in treatment as told by participants of a non abstinence-based treatment program based on a Harm Reduction model targeting homeless active users. The purpose of the article was to describe the sense of demarginalization that participants experienced and to posit that demarginalization is a critical component of engaging ''hard-to-reach'' populations in substance abuse treatment programs.

Demarginalization is a basic component of Harm Reduction therapy. The study used qualitative interview data from participants and staff members of a drop-in center, offering case management services to participants who were homeless and actively using substances. The

study showed positive outcomes in the areas of demarginalization, engagement in the program, quality of life, social functioning, changes in substance use, and articulation of future goals and plans (Lee, 2006). Although Harm Reduction is currently not considered to be an evidence-based practice, with help of future research, it may become more widely accepted in the scientific community for its ability to reduce substance abuse related symptomology in hard-to-reach populations such as the homeless. Issues of demarginalization permeate the literature on substance abuse treatment. The following section investigates this issue in more detail.

Stigma

Bartlett (2013) presented information about harm reduction with regard to how mental health workers may provide care more effectively to those who are drug addicted. Bartlett (2013) argued that therapists must become educated about addiction and the unique struggles faced by individuals suffering from substance abuse. Labaš (2016) noted that one of these struggles that negatively effects all areas of life for people who suffer from addiction is social stigma.

Some consequences of these stigmas include social isolation, social and residential problems, poor mental and physical health, uncompleted treatments, a longer recovery process, slow reintegration, and hazardous behavior. According to NIDA (2020b):

> People with addiction continue to be blamed for their disease. Even though medicine long ago reached a consensus that addiction is a complex brain disorder with behavioral components, the public and even many in healthcare and the justice system continue to view it as a result of moral weakness and flawed character. (p. 1)

Bartlett (2013) indicated that health care providers frequently adhere to the negative stigmas associated with addiction. As a result, individuals seeking drug treatment often

encounter disdain coming from health care providers such as nurses, therapists, and addiction treatment counselors. The author advocates for replacing these negative attitudes with evidence-based strategies to help them reach the highest level of care possible. People who have a substance abuse problem are often viewed as being responsible for their predicament. If they are not, they are often met with reactions such as anger, avoidance, coercion, and punishment. As a result, substance abusers often suffer from guilt and shame about their disease.

E. M. Jellinek's disease model of addiction (supported by National Council on Alcoholism and Drug Dependence) describes it as a chronic brain disease. Moving forward towards this understanding may enhance public support for addiction research. The more this disease concept is embraced, the less shame will be associated with it. As indicated by Bartlett (2013), unfortunately, many uninformed members of society believe that addiction is a moral failing. Additionally, substance abuse is highly correlated with incarceration. A brief examination of this issue is explored in the following paragraphs, and the link between stigma and incarceration is examined.

Moore et al. (2016) found that:

> Research across non-correctional stigmatized groups (e.g., people with mental illness, people living with HIV, people who use illegal drugs) shows that the more individuals perceive that their group is devalued by the public, the more they experience negative psychological and social outcomes such as depression, poor social interactions, and poor perceived community integration. (p. 197)

Livingston et al. (2012) reported that, "Criminalization of substance-using behaviors exacerbates stigma and produces exclusionary processes that deepen the marginalization of people who use illegal substances" (p. 40). Members of law enforcement often facilitate the stigmatization of

addicts, and the phrase “once an addict, always an addict” is often used in reference to this population (Livingston et al., 2012).

In addition, the population of individuals in jails and prisons has grown four-fold over the past two decades (1986–2006) in the United States, reaching 2.2 million inmates by midyear 2006 (Sabol et al., 2007). As of 2016 (the most recent date for which data are available), the United States had more than 2.3 million people incarcerated. Much of the increase between 1986 and 2006 has been attributed to drug-related crimes and drug-related disorders among the incarcerated (Belenko & Peugh, 1998, 2005; Blumstein & Beck, 1999). Zanis et al. (2009) found that:

> In 2004, the annual Survey of Inmates in State and Federal Correctional Facilities began using measures of substance abuse for the first time and reported that 53% of state and 45% of federal prisoners met the DSM-IV criteria for drug dependence or abuse. (p. 173).

Criminal offenders and substance abusers are highly stigmatized groups, marginalized via temporary and sometimes permanent restrictions on voting rights, housing, financial aid, employment, and other aspects of community involvement (Moore et al., 2016, p. 196). Moore et al. (2016) conducted research concerning the effect of stigma on criminal offenders’ functioning which indicated that:

> Researchers have just recently begun to investigate psychological responses to stigma among criminal offenders. In one study, male prisoners’ (N = 450) perceived stigma was correlated with anticipated withdrawal from society. Also, former prisoners’ (N = 229) perceived stigma was positively correlated with number of lifetime probation violations and a violent felony conviction, suggesting that perceived stigma is linked to maladaptive

behaviors in offenders as well as other stigmatized groups such as people who use illegal drugs. (p. 197)

This social problem is on the rise and it is suggested that policies aimed at combating it become more comprehensive. This may be accomplished by further studies being conducted concerning the identification of offenders that are most likely to succeed in community substance abuse programs such as the 12-step program of AA/NA. Identification of these offenders may have social and economic benefits. The reason for this is that the allocation of funds to combat this problem may become more impactful. The 12-step program has a strong emphasis on community involvement through service commitments, sponsorship, and interaction with other recovering addicts. The 12-step program also adheres to the disease model of addiction which may serve to mitigate negative symptoms associated with stigma in marginalized populations such as the homeless, felons, and addicts. Group therapy is a widely used treatment approach within the prison system; however, an examination of these groups is beyond the scope of this review.

Future Directions

New interventions are frequently developed by comparing various treatments and distilling out more effective and less complicated approaches for the treatment of substance abuse. For example, the efficacy of CBT is questionable for certain problems, which suggests that further improvements in CBT strategies are still needed (Hofmann et al., 2012). Mirroring this assertion, despite the emerging empirical support for the use of cognitive behavior therapy in drug-dependent populations, additional research is needed to address its limitations (Carroll & Onken, 2005). Part of evaluating the comparative effectiveness of the treatment modalities explored in this dissertation involves addressing both their limitations and strengths in greater

detail. This dissertation has outlined many of these attributes; however, further research is required to refine the modalities and improve their effectiveness. One of the reasons that CBT is the leading evidence-based treatment is because it is the easiest of all models to collect data. It is much more challenging to compile data with 12-step programs.

Limitations

As explored in the effectiveness of the 12-step program of AA/NA heading of this dissertation, currently, the 12-step program is not considered an evidenced based treatment (Jhanjee, 2014; NIDA, 2018). Cloud et al. (2006) reported that:

> There is a substantial and growing body of literature suggesting that regular post treatment attendance in twelve-step programs significantly improves alcohol and other drug use outcomes; however, this same literature notes that the majority of subjects drop out or sporadically attend 12-step programs in the period following treatment. (p. 32)

Mirroring this assertion, Humphreys et al. (2014) also indicated that observational studies of 12-step groups' effectiveness are vulnerable to self-selection bias because individuals choose whether or not to attend. It has been argued that those who attend 12-step groups are more motivated to change. These shortcomings associated with the research are often problematic when attempting to establish their efficacy. Measuring the efficacy of 12-step programs is also problematic because of its spiritual focus, anonymous, and voluntary participation. It is suggested that future research address these difficulties.

Dialectical Behavior Therapy is an evidenced-based CBT treatment that has spiritual elements, and researchers have successfully measured treatment outcomes among patients using empirical studies, randomized controlled trials, psychometric tests, and surveys. Moving towards acceptance of the spiritual based 12-step program as a stand-alone evidenced-based strategy

requires similar research practices to further its legitimacy within the scientific community. AA and NA conduct periodic correlational research surveys of its members. Correlational research is a type of nonexperimental research that measures two variables and the relationship between them. The problem with these surveys is that they do not account for extraneous or confounding variables such as "good prognosis" participants, level of motivation, the severity of the individual's alcohol or drug problem, environmental, mood, anxiety, intelligence, and other characteristics that are unique to each person. The surveys indicate that these programs are effective in reducing substance abuse. However, researchers have noted that the results from these surveys are not scientifically rigorous and are based on self-selected convenience samples.

Conceptual Problems

According to Donovan et al. (2013), "Although the positive relationship between 12-step involvement and clinical outcomes is compelling, it is not possible to infer a causal relationship from correlational findings" (p. 4). Three particular studies have contributed to the growing body of literature that supports the efficacy of the 12-step program (Connors et al., 2001; McKellar et al., 2003; Weiss et al., 2005). They used a variety of scientifically informed measures to support a causal relationship between 12-step attendance and abstinence. One of the clinical impressions of this dissertation is that in order to move toward acceptance of 12-step programs as an effective stand-alone treatment modality, a causal relationship between 12-step attendance and abstinence must be substantiated by further studies and empirical evidence. Moving toward the 12-step model becoming an evidenced-based treatment modality may enhance clinicians' attitudes towards referring their clients to this program. Cloud et al. (2006) concluded that "positive attitudes (of the clinician) toward 12-step utility are associated with greater participation among

substance abusing clients" (p. 32). Therefore, it is suggested that future empirical studies be conducted with a focus on educating clinicians about the efficacy of the 12-step program.

Expanding the Conceptual Framework

Aftercare

Aftercare refers to treatment for clients who have previously attended inpatient treatment. This may include sober living, involvement in a 12-step fellowship, outpatient treatment, and ongoing counseling or therapy. A clinical impression from the research examined in this dissertation concerns an optimal environment where recovering substance abusers may maintain abstinence. It appears that inpatient treatment involving a variety of treatment strategies explored in this review provides a first line of defense against the disease of addiction. This portion of treatment includes varying levels of accountability such as random drug screening, participation in 12-step fellowships, individual and or group therapy. It is beyond the scope of this review to include an investigation of other forms of group therapy (i.e., cognitive behavioral group therapy), however, the research does support its efficacy. Once clients have successfully completed inpatient therapy, it is suggested that clients continue to participate in their recovery by becoming involved in aftercare.

A future direction for therapists working with substance abusing clients is to utilize empirically supported 12-step facilitative approaches within their practice. These therapists may serve as valuable referral sources to 12-step fellowships. This dissertation has provided a review of the available treatment options based on the unique needs of substance abusing populations. This literature review may enhance therapists' attitudes about the utility of the 12-step fellowship, leading to greater participation among substance abusing client, and consequently, improved treatment outcomes. Regarding twelve-step facilitation, this review found that

currently, there are no materials available to assist program implementers in recruiting clients or addressing organizational implementation. It is suggested that future addiction research be conducted to meet these needs, which may improve access to treatment. As mentioned previously, 12-step programs may assist members to overcome the consequences of stigma such as social isolation, social and residential problems, poor mental and physical health, uncompleted treatments, a longer recovery process, slow reintegration, and hazardous behavior.

Emerging Empirical Research

Kelly et al. (2020) conducted a review that included 27 studies containing 10,565 participants (21 RCTs/quasi-RCTs, 5 non-randomized, and 1 purely economic study). The authors found that, "There is high quality evidence that manualized AA/TSF interventions are more effective than other established treatments, such as CBT, for increasing abstinence" (p. 2). This finding is significant because it provides evidence that TSF works better than other established evidenced-based strategies for treatment of alcohol use disorder (AUD). The research explored in this dissertation indicates that TSF works as well as other evidenced-based strategies, however, this new emerging research indicates that TSF is superior to other evidenced based strategies such as cognitive behavioral therapy, motivational enhancement therapy, and relapse prevention.

Kelly et al.'s (2020) research is very specific in context and focuses on alcohol use outcomes. The outcomes noted by the authors may not be inferred to SUD. It is worth noting that the goal of TSF is to facilitate participation during and following treatment, but TSF itself is not the 12-step program of AA (Kelly et al., 2020). This new study is to be interpreted with caution because the results are based largely on low certainty evidence. Kelly et al. (2020) advised, "Some research has examined the utility of AA for people suffering from other common

substance use disorders (e.g., disorders relating to cocaine, cannabis, opioids use, etc.) either alone or in combination with AUD" (p. 35). This dissertation has explored the effectiveness of various treatment strategies and provides broader implications concerning substance use disorder (SUD).

CHAPTER IV: CONCLUSION

The conditions under which recovery from substance abuse or a reduction in related symptomology is most likely to occur involves the creation of an environment where clients feel supported, understood, and accountable. Multiple perspectives have been evaluated in order to substantiate the most logical conclusions that may be drawn from the studies that have been reviewed. Impulsivity, poor self-esteem, ambivalence to change, and feelings of powerlessness plague the lives of many addicts.

Relapse prevention is the most common goal of the strategies reviewed. High stress levels are prevalent amongst addicts, and its relationship to relapse is strong. By observing the patterns which emerge in the various studies, several inferences may be made. The research shows that CBT and the other evidenced-based interventions outlined in this review are effective in treating substance abuse. However, no single strategy emerged as the most effective. In addition, there are contradictions in the literature with regard to the efficacy of combining treatments.

Hoffmann et al.'s (2012) meta-analytic review, which included 18 studies on the efficaciousness of CBT in treating substance abuse, asserted that, "the effect size of CBT was small as compared to other psychosocial interventions (e.g., contingency management, relapse prevention, and motivational approaches) for substance dependence" (p. 428). Another meta-analysis (Leung & Cottler, 2009) found that CBT is more efficacious when grouped with other brief interventions as compared to pharmacological treatments, but CBT was not more efficacious than these other briefer, less expensive approaches (Hofmann et al., 2012, p. 429).

Magill and Ray (2009) reported that, "across a large, diverse, and rigorous sample of randomized trials, CBT for adult substance-use disorders demonstrated a small, but statistically

significant effect over comparison conditions" (p. 521). Magill and Ray (2009) found that cognitive-behavioral treatments work with adult substance use disorders; they work much better than no treatment, but only minimally better than other treatments.

Meta-analyses of CBT with other alcohol or illicit drug treatments show effect sizes typically in the small to moderate range (Burke et al., 2003; Prendergast et al., 2002, 2006). Magill and Ray (2009) went on to explain that 58% of patients receiving CBT fared better than patients in the comparison condition (active treatment, passive treatment, no treatment, no adjunct treatment). Studies of CBT combined with an additional psychosocial treatment had a larger effect than either CBT combined with pharmacological treatment or CBT alone. Although there are contradictions to Magill and Ray's (2009) study, it appears to be the most comprehensive meta-analysis that investigates the efficacy of CBT.

Some of the paradigms that have emerged in the literature include an emphasis on changing clients' ideas about themselves, their beliefs, and the world in which they operate. AA and NA are particularly useful in accomplishing these goals. Some of their success is attributed to their low cost, ease of accessibility, and frequency of meetings. These programs provide a secure base upon which the relational aspect of treatment may be developed. Substance abusers often have problems in their work, love, and play lives. To combat these problems, decrease symptoms, and increase functioning, the strategies reviewed in this dissertation employ a variety of methods. The spiritual element of the 12-step approach to treatment has been examined and its efficacy in relation to the other evidenced strategies has been reviewed.

Mindfulness meditation and its focus on the awareness of the mind, body, and emotions is a prominent skill, which emerged in the literature. The advocacy of empowerment and refocusing of strengths and acceptance helps clients to recognize that they have the ability to

change their reactions to situations. While searching the literature for efficacious treatment modalities, it was determined that CBT shares many similar components with the other evidence-based strategies. Some of these similarities include learning to set goals, self-monitor, emotionally regulate, and identify triggers/warning signs. A client's guilt and shame about their disease is often addressed with validation techniques. Many of the evidenced-based strategies that were reviewed advocate for the development of interpersonal, coping, and self-reflection skills. Seeking support from therapists and peers are important predictors of recovery. In addition, enhancing the therapeutic alliance between patients and clinicians has been shown to positively influence treatment outcomes.

This review found a gap in the literature with regard to investigating the 12-step model as an effective stand-alone treatment. It is suggested that future studies be conducted in this area. The treatment study outcomes evaluated in this review provide valuable information, which may contribute to the effectiveness of treatment providers in their pursuit to combat the problem of substance abuse.

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APPENDIX A: COMPUTER SEARCH TERMS

Individual Computer Search Terms

Evidenced-Based Strategies

Substance abuse

Substance Use Disorder (SUD)

Addiction

Illegal Drug Use

Cognitive Behavioral Therapy (CBT)

Co-occurring Disorders (COD).

Behavioral Self-Control training (BSCT)

Attention Deficit Hyperactivity Disorder (ADHD)

Rational Emotive Behavioral Therapy (REBT)

Alcoholics Anonymous

Relapse Prevention

Dialectical Behavior Therapy (DBT)

Motivational Interviewing

Buddhist Mindfulness

Self Control Training

Methadone Maintenance Treatment

Mental Health

The Adolescent Brain

Mindfulness

Behavior Therapy

Anxiety

Trauma

Depression

Combined Computer Search Terms

Relapse Prevention (RP) and CBT

Mindfulness-Based Stress Reduction (MBS and CBT

CBT and Contingency management (CM) and Cannabis Addiction

CBT and Depression

Dialectical Behavior Therapy (DBT) and Borderline Personality Disorder (BPD)

Twelve Step Facilitation (TSF) and Integrated Cognitive-Behavioral Therapy (ICBT)

12-step outpatient group and SUD and Major Depressive Disorder (MDD)

CBT and NA and AA

CBT, SUD and ADHD

Naltrexone and Alcoholism

Childhood and Adolescence and Addiction

Harm Reduction and Addiction

Developmental Antecedents and Addiction

After Drug Treatment and 12-step and maintaining abstinence

Addiction Research and Theory

Young Adulthood and Alcohol

Developmental impacts of child abuse and neglect and substance use

Family Influences and children and adolescent predictors

NA and AA and Aftercare Treatment

12-Steps and prediction of a reduction in alcohol use

Naltrexone and Alcohol Dependence

12-steps and Depression and Substance Abuse

Group Therapy and AA

Narrative Approach and Substance Abuse Treatment

Psychotherapy and Pharmacotherapy and Substance Dependence

Psychiatric Disorders and Self-Medication and Substances

Appendix B: Pharmacological Treatments for Drug Abuse

In pursuit of surveying the relevant substance abuse treatments available to clinicians, combinations of psychotherapeutic treatments have been investigated. The literature is ambiguous concerning the effectiveness of psychotherapy and psychopharmacology. It is difficult to determine where one intervention starts and another one finishes.

Naltrexone is an opiate antagonist that blocks opioid receptors and studies have shown that it is most effective when paired with alcohol (Volpicelli et al., 1992). Volpicelli et al. (1992) ascertained that, among patients who continued to drink during outpatient treatment, naltrexone had significant positive effects. When combined with CBT and continued moderate drinking, results suggest that naltrexone helps reduce cravings, the number of drinking days, and drinks per day (Alho et al., 1999).

Volpicelli et al. (1992) provided evidence that, when combined with cognitive behavioral therapy, naltrexone is an effective pharmacotherapy to use with patients. Nonetheless, it does not provide sufficient evidence to determine if a combination of pharmacological treatments and psychotherapy is the most efficacious approach for the treatment of addiction.