Summer 8-2020

Group Treatment Effectiveness for Substance Use Disorders: Abstinence vs. Harm Reduction

Jill D. Parramore
Old Dominion University, jillparramore@gmail.com

GROUP TREATMENT EFFECTIVENESS FOR SUBSTANCE USE DISORDERS: ABSTINENCE VS. HARM REDUCTION

by

Jill D. Parramore
A.S. May 2011, Tidewater Community College
B.S. May 2013, Christopher Newport University
M.S.Ed. May 2015, Old Dominion University

A Dissertation Submitted to the Faculty of
Old Dominion University in Partial Fulfillment of the
Requirements for the Degree of

DOCTOR OF PHILOSOPHY

EDUCATION, COUNSELING

OLD DOMINION UNIVERSITY
August 2020

Approved by:

Nina G. Brown (Director)

Corrin Richels (Member)

Narketta Sparkman-Key (Member)

ABSTRACT

GROUP TREATMENT EFFECTIVENESS FOR SUBSTANCE USE DISORDERS: ABSTINENCE VS. HARM REDUCTION

Jill D. Parramore
Old Dominion University, 2020
Director: Dr. Nina G. Brown

The purpose of this systematic review and meta-analysis was to compare group treatment effectiveness for substance use disorders within the U.S. across treatment philosophies as it relates to the primary research question, Is there a significant difference of group treatment effectiveness between Abstinence and Harm Reduction treatment philosophies? It was hypothesized that group treatment will remain an effective intervention to treat substance use disorders between treatment philosophies and that no significant differences exist between-group comparisons. The aim of this study is to provide evidence of treatment effectiveness that will ultimately improve treatment outcomes for substance use disorders, provide guidance for broader implementation of evidence-based treatment approaches within the U.S., and to provide current information for evidence-based decision-making.

Targeted studies included randomized and non-randomized controlled trials published in scholarly, peer-reviewed journals within the past 15 years, i.e. 2004-2020. Targeted participants were individuals diagnosed with one or more substance use disorders and/or co-occurring disorders. Treatment outcomes must be measured in quantitative methods with group treatment as the independent variable and substance use disorder outcomes as the dependent variables. The selected studies must indicate treatment philosophy used and provide a direct comparison of Abstinence and Harm Reduction. Random-effects model meta-analysis was used to compute effect sizes for treatment outcomes to compare treatment philosophies.

Five studies met eligibility criteria (Miotto et al., 2012; Nyamathi et al., 2011; Rosenblum et al., 2005; Weiss et al., 2007; Weiss et al., 2009). In four of the five included studies, the Harm Reduction condition outperformed the Abstinence condition. However, the meta-analysis indicated that there was not a statistically significant difference between outcomes of substance use by treatment philosophy ($Z = 1.29$) and ($P = 0.20$). However, there may be a clinically significant difference due to the aggregate standardized mean difference (-0.15, CI [-0.38, 0.08]) which favors Harm Reduction over Abstinence in the reduction of substance use. Future research focused on clearly identified group treatment philosophy is imperative to provide up-to-date and a more accurate reflection on the effectiveness for treating substance use disorders.

Keywords: Group treatment, substance use disorders, Abstinence, Harm Reduction, comparative effectiveness research, systematic review, meta-analysis

This dissertation is dedicated to my sons, Jaden and Ryan. You can do anything and achieve your heart's desire, dare to follow your dreams. You are the ones that made me strong enough to follow and achieve mine and I would like to always return that favor to you both. I would also like to thank my parents, Mary and Mark, as without their support none of this would have been possible. This dissertation is also dedicated to those who lost their lives to substance use disorders, those who survived, and to our families and friends that have been affected.

ACKNOWLEDGMENTS

My deepest gratitude to Dr. Nina Brown My admiration, care, and respect began when I first entered her group treatment course. She provided me with the tools, confidence, and competence to consider myself a group counselor. It is a specialty that I am honored to have learned from one of the most talented group leaders in the world. I appreciate your wisdom, Dr. Brown, and I thank you for your mentorship. I would also like to thank members of the Committee Drs. Narketa Sparkman-Key and Corrine Richels, without whom this opportunity would not have been possible.

I must also thank those in the past who helped to guide me along the way. William (Bill) Conner gave me leadership opportunities, setting the stage for me to believe that I could become a leader in the field of counseling. Dr. Sandford (Sandy) Lopater for helping me to intellectualize and to understand drug action. To my mentor, Dr. Melissa Hill, words cannot describe how thankful I am that you helped me to develop into the counselor that I am today.

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER I

INTRODUCTION

The significant and devastating impact of substance use disorders on American lives and families has tasked counselors to ask a critical question, how effective is treatment within the U.S.? By providing a comparison of group treatment effectiveness by treatment philosophy, this study aims to guide clinical practice to employ evidence-based interventions and to provide current information for evidence-based decision-making. This systematic review follows protocols established in the Meta-Analysis Reporting Standards (MARS) (Cooper, 2018). This chapter provides background, statement of the problem and research questions, purpose of the study, rationale, significance, delimitations, limitations, assumptions, and an overview of the study, key definitions, and remaining chapters.

Background

In 2018, an estimated 164.8 million, 60.2%, Americans ages 12 years old and older reported substance use within the past month and 20.3 million, 7.4%, had a specific substance use disorder according to the National Survey on Drug Use and Health (Substance Abuse and Mental Health Services Administration (SAMHSA, 2019). *The Diagnostic and Statistical Manual of Mental Disorders*, (5th ed.; *DSM-5*; American Psychiatric Association, 2013) defines substance use disorder (SUD) as a pattern of behavior that creates significant distress and/or impairment in functioning due to use and misuse of mood-altering substances such as caffeine, nicotine, alcohol, opioids, and other drugs. To receive a diagnosis of a substance use disorder, an individual must meet at least two criteria related to substance use. Examples of criteria include larger quantities of substance(s) use than intended, substance indulgence lasting longer than anticipated, inability to decrease or stop using a substance, and experiences of cravings and

urges to use substances. The severity of the substance use disorder diagnosis is dependent upon the number of criteria present. Severity is indicated as a specifier such as mild, moderate, or severe. The American Society of Addiction Medicine (ASAM) assessment is used to determine appropriate level of treatment for individuals with substance use disorders (SAMHSA, 2005).

Treatment for Substance Use Disorders

In 2018, 3.7 million, 1.4%, Americans aged 12 years old and older received treatment for substance use disorder(s) (SAMHSA, 2019). Treatment for substance use disorders is conceptually viewed as different than treatment for other mental health disorders (DuPont et al., 2015) where services and funding are provided by separate agencies and organizations than the rest of healthcare. In the U.S., most services for SUDs are provided within treatment programs. Funding for SUD treatment is primarily provided by federal and state governments, such as block grants, and limited funding is provided by health care insurance (DuPont et al., 2015). Adequate funding is critical to treatment program effectiveness, to have the capacity to meet the community's needs, and to ensure evidence-based treatment is implemented. Currently, less than half of the treatment programs in the U.S. provide evidence-based treatment for substance use disorder (Padwa & Kaplan, 2017). Some barriers to implementing evidence-based treatment are the segregation of SUD treatment from the rest of healthcare (DuPont et al., 2015), the time gap from dissemination research to clinical practice, and lasting effects of prior conceptions of the etiology of SUDs.

In 2017, there were 13,585 treatment facilities in the U.S. where 82% offered outpatient (ASAM Level 1) treatment, 27% offered residential (ASAM Levels 2 and 3) treatment, and 5% offered hospital inpatient (ASAM Level 4) treatment (SAMHSA, 2018b). More than half of the treatment facilities were operated by private non-profit organizations, 36% by private for-profit

organizations, and roughly 10% by local, state, federal, and tribal governments. The operating structure of treatment facilities is an important consideration when evaluating program effectiveness. Key stakeholders, legislature, and funding provide context to decisions in treatment program planning. Key stakeholders differ depending on the structure of the organization, wherein consumers, i.e. individuals with SUDs, may or may not be considered as key stakeholders impacting who is able to contribute to programming decisions. Recent efforts by the National Institute of Drug Abuse Clinical Trials Network (NIDA, 2015) have contributed to the adoption of evidence-based pharmacotherapies and behavioral therapies, such as cognitive-behavioral, contingency management, and motivation enhancement, within cooperating community-based treatment programs.

Group Therapy

Treatment programs for SUDs typically offer a standard set of short-term services such as individual, family, and group treatment (DuPont et al., 2015) and require attendance at outside self-help groups such as Alcoholics Anonymous or Narcotics Anonymous (SAMHSA, 2015a). Most programs offer group therapy as the primary modality of treatment, often with individual counseling sessions offered as an ancillary service or recommended as part of the aftercare plan (SAMHSA, 2015a). Previous survey research indicates that more than 90% of treatment programs provide group therapy (Crits-Christoph et al., 2013; SAMHSA, 2010; SAMHSA, 2018b; Weiss et al., 2004). Group treatment is operationally defined as two or more unrelated individuals who meet to purposefully improve wellbeing. Treatment programs generally offer group treatment by integrating cognitive-behavioral therapy, psychoeducation and skills development, interpersonal process groups, and specialized topics (SAMHSA, 2015a). Group therapy as treatment as usual may be due to cost effectiveness; however, research indicates group

therapy is effective in treating substance use disorders in that the group experience offers curative forces that are not available in one-on-one counseling (Weiss et al., 2004).

The decision to engage in treatment for a substance use disorder is also known as entering recovery. The Substance Abuse and Mental Health Services Administration (SAMHSA, 2011) defines recovery as a process of change and provides guiding principles for counselors to promote these changes. The principles of the recovery process are that it is person-driven, holistic, culturally sensitive, and based upon respect. As recovery is defined as a process of change, group therapy promotes personal growth, and is a catalyst for change. Group therapy provides an opportunity to connect with others and to be understood. The group leader utilizes group dynamics to promote interpersonal learning, healthy conflict resolution, emotional expression, empathy, and communication skills (Brown, 2009).

To be an effective group leader for substance use disorders, counseling competencies and a specialized skill set in group process are required (SAMHSA, 2017) as the leader must simultaneously consider the needs of both the individual group members and of the group itself (Brown, 2009). Group leaders provide a safe and trusting environment where individuals may self-disclose to other group members who have similar lived experiences (SAMHSA, 2015a). For example, those in the early stages of recovery may greatly benefit from those in the maintenance stage, and vice versa, as well as from the group leader. By observing and learning from others the pitfalls and pinnacles of the recovery process, hope and encouragement is instilled in group members. The group leader may structure expectations for change in that only the client has the power to change and can change, change does not pose a threat of danger to the client, and change is the only path toward obtaining one's goals (Yalom, 2005). Most treatment programs in the U.S. are focused on abstinence as the primary goal.

Treatment Philosophies

Currently, there is no unified theoretical model comprehensively explains substance use disorders, nor is there a one-size-fits all treatment modality in working with those who experience substance use disorders (Skinner & Aubin, 2009; Straussner, 2012) and there is controversy in the field of counseling as two conflicting yet overlapping treatment philosophies, Abstinence and Harm Reduction, are guiding clinical practices for treating substance use disorders (Scott, 2015). Therapeutic aims within the Abstinence treatment philosophy are for individuals to detoxify from all mood-altering chemicals and to maintain a drug and alcohol-free lifestyle without relapse. In Harm Reduction, treatment outcomes are broadened from the ability to maintain abstinence to include any positive changes and reduction in harm. The Harm Reduction treatment philosophy is aimed at maximizing the welfare of individuals with substance use disorders, whether they are committed to abstinence or not (Nutt, 2013). A brief history of treatment philosophies is provided to explain the current dichotomy within the counseling profession.

Historically, individuals with substance use disorders were perceived to lack morals. The Moral Model of alcoholism was the first treatment philosophy of substance use disorders (Straussner, 2012). Because of Prohibition, those with alcohol use disorder were stigmatized as 'sinners' and 'drunkards.' It was thought that individuals were weak-willed, capable of making better decisions. Many current laws reflect the Moral Model in that crimes committed while intoxicated are considered willful acts and should be punished. Legislature, public policy, and criminal justice mandates influence standards of care. These influences and fundamental segregation have resulted in punitive attitudes toward individuals with SUDs (Padwa & Kaplan, 2017). This model was replaced by the Disease Model, however, the stigma caused by the Moral

Model persists for people who struggle with substance use disorders and continues to influence treatment.

The Disease Model is still used today and is the basis of the *DSM-5* diagnosis of alcohol use disorder and other substance use disorders. Substance use disorders are considered a disease as it is similar to other diseases in that it is preventable, treatable, and if left untreated, can last a lifetime. The National Institute of Drug Abuse (2016) defines substance use disorder as "… a chronic, relapsing brain disease that is characterized by compulsive drug seeking and use, despite harmful consequences" (p. 5). In 1952, Jellinek described alcoholism as a disease. The disease progresses through stages of increased tolerance, loss of control, to chronic use (Jellinek, 1952). The rate of progression is dependent upon factors such as drug administration route, frequency, potency, and dosage. Progression through the stages was thought to be irreversible until neural plasticity was discovered in the 1970's (Sweatt, 2016).

In the early stages of substance use, outcomes are pleasurable as neural networks, such as the dopaminergic and serotonergic pathways, are activated (Julien et al., 2011). Hence, the stimulus of drug experimentation is reinforced by a positive response. The positive response within the brain leads to associated learning and outcome expectancies develop. Over time, neural networks adapt and the positive response to the drug will eventually decrease and the drug stimulus will become less effective. Behavioral- and neuro-economics describe the process in which individuals begin to make decisions based on outcome expectancies that are no longer valid. Because of learned associations of positive rewards received in early stages of substance use, individuals will choose short-term gains from mood-altering substances over long-term gains from abstinence due to the initial strength of response (Bickel et al., 2014; Hernnstein,

1997; Monterosso et al., 2012). Substance use disorders are not the result of a single choice, they develop over countless choices.

Substance use disorders are associated with cognitive impairments and deficits (Hagen et al., 2016). Alcohol and opiates impair executive functioning, specifically in the ability to regulate emotions and to make decisions. Cognitive dysfunction may lead to harmful behaviors (NIDA, 2016). The inability to resist impulses to engage in harmful behaviors can be characterized as an impulse control disorder (Muresanu et al., 2012). A common conception is that substance use disorder as an impulse control disorder where rewarding behaviors become habitual over time due to stimulus-response and action-outcome systems.

Difficulties with impulse control contribute to problems associated with habit-forming behaviors. Many would argue that substance use disorder is not a matter of choice, as without a normally functioning brain individuals are, at times, unable to make an informed decision to stop substance use (Julien et al., 2011). Herrnstein (1997) would maintain that individuals are not able to make decisions that best maximize return in utility, as humans are meliorators and are unable to calculate all possible scenarios thus limiting their choice options to what has been experienced. The choice to use a substance is efficient in some situations and not so in others. The long-term gains of not using substances is heavily discounted because the instant reward of alleviating negative reinforcers is highly efficient in most situations, especially during withdrawal (Bickel et al., 2014).

Often individuals with substance use disorders will seek help because of negative consequences (Laudet, 2011). However, even when faced with negative consequences, in the laboratory, most animals will continue to self-administer drugs (Wise & Koob, 2014). The memory of the drug experience and its rewards are stored in the brain. These stored memories

allow for such self-injurious temporal discounting to occur. Temporal discounting is defined as the rate to which a reinforcer decreases in value as a function of delay (Bickel et al., 2013). Motivation toward drug-seeking increases because the memory of the drug experience elicits positive expectations of reward (Duka et al., 2011). The value of immediate expected rewards reinforces the learned drug use behaviors. Drug-seeking behavior is only extinguished when reinforcements, positive or negative, are no longer present (McNally, 2014). This reasoning gave rise to Abstinence treatment, eliminating the possibility to experience further reinforcement.

Abstinence

Due to the lasting effects of stigma for having a substance use disorder, prior to 1970 most treatment was received in self-help groups with peers and peer leaders, and not by professionals. Currently, Abstinence treatment programs are offered on a continuum of levels of care for individuals with substance use disorders beginning with assessment and diagnosis, detoxification, inpatient and/or outpatient treatment, and aftercare including concurrent attendance at 12-Step self-help meetings such as Alcoholics Anonymous or Narcotics Anonymous. Individuals who are unable to maintain abstinence during treatment often receive punitive consequences. For example, if a relapse were to occur while receiving services, violation of program guidelines may lead to dismissal from the treatment program. Relapse prevention is the primary therapeutic goal in this treatment philosophy.

The Abstinence treatment philosophy, also commonly referred to as the Minnesota Model, is considered the traditional model for treating substance use disorders and is based on the Moral Model, the Disease Model, and 12-Step concepts. Sussman (2010) summarizes 12-Step concepts as a commitment to change in effort to maintain an abstinent lifestyle from all

mood-altering chemicals. Theoretical underpinnings of Abstinence treatment suggest that the individual is powerless over their SUD, must surrender their 'stinking' thinking and adhere to group think mantra such as "Let go and let God," and if one is unable to maintain abstinence that they have yet to 'reach bottom' and must endure more harm using in order to recover. 12-Step concepts are not grounded in empirical science, yet the ideology continues to be reflected in clinical practices and often inhibits the delivery of evidence-based treatment in many programs (Padwa & Kaplan, 2017).

Many treatment providers believe in this treatment philosophy as it has been the status quo for many years. Counselors assume that motivated individuals will immediately abstain and maintain abstinence from all mood-altering substance. To assess a person's willingness and readiness to change, counselors use the Transtheoretical Model to gauge motivation in relation to five stages of change: precontemplation, contemplation, preparation, action, and maintenance (Prochaska & DiClemente, 1984). The stages are a framework to evaluate an individual's current capability to acknowledge and to address substance use behaviors. Group treatment provides an opportunity for interpersonal learning to progress through the stages of change. Those in the early stages of recovery may greatly benefit from those in later stages to breakthrough denial and those in the later stages accrue motivation to maintain abstinence from exposure to the ailments of those entering recovery (Stinchfield et al., 1994). Motivation to maintain abstinence, measured over time, may be a predictor of future substance use (Korcha et al., 2011). Treatment is often confrontational (Fisher & Harrison, 2013).

Cook (1988) describes programs that use the Minnesota Model as "… intensive, offering group therapy, lectures, and counselling" (p. 625). During the development of this treatment philosophy the *DSM II* categorized substance use disorder as a personality disorder and the

clinical zeitgeist of the times described individuals with SUDs as in need of psychodynamic changes to their inflated egos and defense mechanisms (White & Miller, 2007). The clinical climate was influenced by Al-Anon, therapeutic communities such as Synanon, and prominent treatment providers and programs that used hostile and aggressive confrontation to break down defense mechanisms. Although using a confrontational style has been shown to be ineffective and to cause harm (Kashner et al., 1992; Miller et al., 1993), it continues in group treatment practice today. In a recent survey, 566 members of the Association for Addiction Professionals responded on a Likert-like scale where (1 = none/ almost none; 2 = some; 3 = half; 4 = most; 5 = almost all/ all) that between some and half (M = 2.35; SD = 1.20) of group sessions within a month's time were spent using a confrontation style for the majority of the session (Wendt & Gone, 2017).

Harm Reduction

There is controversy and dichotomy within the field of counseling because the evolution of science and technology, such as findings from fMRI studies, has improved neurobiological understandings of substance use disorders since the development of Abstinence treatment philosophy. New knowledge, reduced stigma, and paradigm shift in counselor attitudes toward individuals with SUDs have influenced a Harm Reduction treatment philosophy to emerge. The Harm Reduction treatment philosophy is an acknowledgment that substance use disorders exist, are complex, and work must be done to minimize the harmful effects of drug use (Marlatt, 1996). Harm Reduction first emerged in the U.S. around 1990 as public health strategies for reducing risky behaviors related to substance use and HIV and the impact on people and communities (Heather et al., 1993). Harm Reduction strategies include using a designated driver, syringe exchange programs, condom distribution, supervised safe injection sites, naloxone medication

distribution for opioid overdose, and medication-assisted treatment. A comparison of Abstinence and Harm Reduction outcomes will be provided in Chapter 4, as there is no current literature comparing the two treatment philosophies.

Harm Reduction, also commonly known as the Third Wave, is a social justice movement that promotes public health using humane, practical interventions that work toward minimizing the harmful effects of drug use for the individual and the community (Marlatt, 1996; Marlatt, 1998; Vakharia & Little, 2016). Treatment providers who adhere to this treatment philosophy "Recognize that the realities of poverty, class, racism, social isolation, past trauma, sex-based discrimination and other social inequalities affect both people's vulnerability to and capacity for effectively dealing with drug-related harm" (Harm Reduction Coalition, 2018, p. 1). Harm Reduction treatment providers are non-judgmental and non-coercive, convey a neutral stance toward substance use, and view the individual with substance use disorder as empowered with the volition of free will to create programs and policies to reduce the harm of their use (Vakharia & Little, 2016). The individual with a substance use disorder is involved in treatment planning, program development and evaluation, and as a key stakeholder in decision making. Treatment interventions are client-centered and trauma-informed, aimed at welcoming people as they are. Treatment providers develop a therapeutic alliance, collaborate on treatment goals that range from safer use to abstinence, and allow access to services to those who may not be abstinent. Treatment outcomes are often measured by quality of life for an individual and the community rather than solely based on days abstinent.

Although the popularity of the Harm Reduction treatment philosophy is growing due to increasing evidence of its efficacy (Logan & Marlatt, 2014), Harm Reduction has not yet been adopted as a Federal policy for treating substance use disorders, with the exception of

medication-assisted treatment. However, Harm Reduction treatments are usually accepted at State and local levels (Oyemade, 2015). Research indicates medication-assisted treatment increases both the safety for the individual and for society (NIDA, 2012). Medication-assisted treatment (MAT) includes therapeutic interventions and medication when treatment is medically necessary and appropriate (SAMHSA, 2014). Neuro- and psychopharmacological approaches to treatment offer promising interventions for substance using individuals who are unwilling or unable to attain or maintain abstinence. Medication-assisted treatment alters brain chemistry to reduce the impact of drug craving, and ultimately drug use (Haas-Koffler et al., 2014; Hone-Blanchet et al., 2015; Peck & Ranaldi, 2014).

Medication-assisted treatment is the most effective treatment for substance use disorders such as opioid use disorder (World Health Organization, 2009). Medication-assisted treatment has been added to traditional services for treating substance use disorders. MAT is used in treating tobacco, alcohol, and opioid use disorders. The National Institute on Drug Abuse (2016) provide the following reasons to prescribe medication for substance abuse treatment: treating withdrawal, staying in treatment, and preventing relapse. More than 90% of individuals with opioid use disorder (OUD) will relapse the first year following treatment (SAMHSA, 2014). Relapse is especially dangerous for individuals with opioid use disorder, as there is a high risk for overdose and fatal overdose. When taken as prescribed, medication-assisted treatment allows for individuals to better function within society and to engage in counseling (Lingford-Hughes, 2016).

Statement of the Problem and Research Questions

A review of group treatment effectiveness for treating substance use disorders within the U.S. is needed at this time. The most recent systematic review and meta-analysis on

effectiveness of group treatment for adults with SUDs was conducted last year by Lo Coco et al. (2019). Where Lo Coco and colleagues focused on overall effectiveness of group treatment by synthesizing global data from random controlled trials (RCTs), this review focuses on U.S. group treatment effectiveness by reviewing published outcomes of RCTs and other quality studies. As an extension, group treatment effectiveness will be compared by treatment philosophy. As the recent Opioid Epidemic has increased awareness of how critical treatment is, it is the role of counselors, who are ethically bound, to provide treatment interventions that are evidence-based (ACA, 2014). The aim of this systematic review and meta-analysis is to provide an answer to the following primary research question: Is there a significant statistical and clinical difference in group treatment effectiveness when comparing group treatment by Harm Reduction or Abstinence treatment philosophies?

RQ1: Is there a significant difference of group treatment effectiveness between Abstinence and Harm Reduction treatment philosophies?

H1: It is hypothesized that group treatment will remain an effective intervention to treat substance use disorder between philosophies.

Ho: There are no significant difference between group comparisons.

Purpose of the Study

The purpose of this study is to investigate whether group treatment is an effective treatment intervention for substance use disorders in the U.S. by comparing group treatment effectiveness for substance use disorders by treatment philosophies of Abstinence and Harm Reduction by reviewing and appraising the current literature. The findings of this systematic review will help counselors to adhere to ethical guidelines of providing evidence-based interventions and to improve treatment outcomes for substance use disorders. The findings of

this review will aid key stakeholders to make evidence-based decisions on treatment policies. Translating the findings of this study into practice will allow counselors to design and to implement treatment protocols that demonstrate effectiveness in the treatment of substance use disorder(s). The aim of this systematic review is to provide further evidence for group treatment effectiveness by treatment philosophy. The results of this study may ultimately provide further guidance for broader implementation of evidence-based treatment approaches in U.S. treatment programs and services for individuals with substance use disorders.

Rationale

This study will add to the current knowledge of the effectiveness of group treatment for substance use disorders and to extend the understanding of the impact of treatment philosophy on treatment outcomes, as no evidence of comparative effectiveness research on group treatment interventions by treatment philosophy was identified in the literature. Group treatment is the dominant service provided in treating substance use disorders (SAMHSA, 2015a). Examining the impact of group treatment on substance use will provide treatment providers with applicable knowledge to improve treatment programs and protocols. Results of the comparative analysis may guide counselors to employ effective, evidence-based interventions. This study will help to determine best practices and policies for treating substance use disorders.

Significance

It has become urgent to elucidate effective treatment modalities for substance use disorders. Considering the severe consequence of fatal overdose within the population that uses substances such as opioids, it is imperative that counselors provide evidence-based, effective treatment. The field of counseling is in a current state of dichotomy where some providers require immediate abstinence and others may include medication-assisted treatment and strive

toward abstinence as a possible long-term goal. This study will compare the competing treatment philosophies of Abstinence and Harm Reduction. The contribution of this study is to provide up-to-date information on the effectiveness of treatment philosophies that will ultimately provide a basis to determine a more unified model of treating substance use disorder, as currently there is no unified theoretical model that comprehensively explains all aspects of substance use (Skinner & Aubin, 2010).

Delimitations

Systematic reviews typically include only the most rigorous studies on a given topic, such as randomized controlled trials and controlled clinical trials. The target of this study is applied research, where treatment for substance use disorder is provided by community-based programs and not in laboratories. Random design and/or control groups for comparison are often not imposed in applied research where consumers of the treatment programs require immediate help and are ethically bound to receive services. Due to this departure from standard practice of excluding less than rigorous studies, bias will be a risk factor to the conclusions of this study. Risk bias assessment tools will be used to reduce the bias.

Direct comparisons of treatment approach and group treatment interventions will be difficult to obtain, as currently there are no standardized measurements of treatment effect for substance use disorder limiting the ability to investigate treatment efficacies across studies (Tiffany et al., 2011). This study will include outcome measures presented in the included studies, but those measures may have to be expanded or collapsed to meet requirements for statistical power (Balkin & Sheperis, 2011). Heterogeneity of effect sizes and quality of individual studies will be investigated prior to conducting meta-analyses and statistical adjustments will be implemented, as needed.

Limitations

There is a possibility that a low number of studies will meet the criteria of this study impacting the generalizability of the results. Group treatment effectiveness may not be investigated often due to the difficulty of rigorous design in the delivery of services and measuring treatment outcomes. This is partially due to practical limitations of clinical settings and ethical concerns when considering control or comparison groups. Attrition and open enrollment groups wherein attendance varies from session to session and structured delivery of treatment which builds over time is not possible further compound the ability to establish strong research support (Wendt & Gone, 2017). Many moderating, mediating, and confounding variables exist in this type of applied research. Some examples are treatment fidelity, such as therapist adherence to treatment philosophy and counselor competence as a group leader (Collyer et al., 2019), therapeutic alliance, and group cohesion (Orchowski & Johnson, 2012).

Assumptions

This study is based on the conceptual framework of prior theory and research, utilizing the paradigm of post-positivism, in that the purpose of this study is to arrive at a conclusion of effectiveness by comparison that will guide clinical practice and policies for SUD treatment. The primary assumption is that this study will employ rigorous measures to minimize erroneous conclusions, as the quality of the systematic review is dependent on its methodology. The secondary assumption is that systematic reviews provide better evidence than individual studies in comparative effectiveness research (Berlin & Cepeda, 2012). By identifying and critically appraising all existing literature based on eligibility criteria, the researcher can synthesize the findings of multiple studies to answer a specific research question. The third, and ultimately, the

purpose of this study, is that systematic reviews inform clinical practice and policies (Henly, 2016; Higgins & Green, 2008).

Overview of Study and Key Definitions

This review will be conducted systematically. The full protocol for this systematic review was not previously published; however, it is detailed within this manuscript. Scholarly, peer-reviewed journal articles focused on group treatment interventions used in treating substance use disorders will be targeted in a search strategy of online databases. Randomized and non-randomized controlled trials studying the effects of group treatment interventions in Abstinence and Harm Reduction treatment philosophies of substance use disorders are the targeted type of studies for this review; however, less rigorous designs will be assessed for inclusion due to the nature of this type of intervention. Restrictions will be made on publication status, publication dates, or published language of each study. Targeted studies will be published in scholarly, peer-reviewed journals within the past 15 years, i.e. 2004-2019, performed in the U.S., and written in the English language.

Titles and abstracts will be reviewed to determine initial inclusion to the systematic review. The manuscripts of the initial studies will be further reviewed to decide whether inclusion criteria are sufficiently met. Those selected for inclusion will be assessed for quality, methodological heterogeneity, and risk of bias. The GRADE approach will assess for quality and a level of strength will be provided for each study (Higgins & Green, 2008). Methodological heterogeneity will be assessed, and a statistical value will be assigned as $I^{2.}$ Risk of bias of included studies will be assessed using the Cochrane Collaboration tool 2 (Higgins et al., 2011). Methods of data collection and data synthesis will be described in Chapter III and results will be provided in Chapter IV. Results of individual studies and synthesis of results as an aggregate

standardized mean difference will be provided as a comparison of group treatment effectiveness for substance use disorders by treatment. Definitions of key terms are provided.

Definition of Key Terms

Abstinence – Treatment philosophy which focuses on abstinence as the primary goal for individuals with substance use disorders.

Comparative effectiveness research (CER) – A systematic review of two or more treatment modalities that directly compares the harms and benefits to improve the quality of services.

Co-occurring disorder – Concurrent diagnoses of one or more substance use disorders and one or more mental health disorder.

Group treatment – Two or more unrelated individuals who meet to purposefully improve wellbeing.

Harm Reduction – Treatment philosophy which focuses on reducing harm of substance use disorders and may include abstinence as a goal, other goals include any progress toward positive changes.

Meta-analysis – Statistical procedure which measures effect size across multiple studies.

Medication-assisted treatment – Pharmacological interventions for substance use disorders.

Random-effects model meta-analyses assumes heterogeneity within and between studies.

Substance use disorder – Consumption of mood-altering substances that interferes with daily functioning, must meet at least two criteria as defined in the DSM 5.

Systematic review – A literature review that follows specific protocols to appraise individual studies and synthesize outcomes.

Treatment for Substance Use Disorders – Therapeutic services offered by a trained professional, usually delivered in treatment programs.

Overview of Remaining Chapters

Chapter I presented an introduction to the proposed research comparing the effectiveness of group treatment for substance use disorders by treatment philosophies Abstinence and Harm Reduction. Background for the study was provided including treatment for substance use disorders, group therapy, and Abstinence and Harm Reduction treatment philosophies. The statement of the problem and research questions were described. The purpose, rationale, and significance of the study were presented. The delimitations, limitations, and assumptions of the study are summarized. A definition of key terms and an overview of remaining chapters was provided.

Chapter II presented a literature review that establishes the need for an up-to-date review of group treatment effectiveness for substance use disorders within the U.S. Literature reviewed included previous systematic reviews with meta-analyses, narrative, or qualitative summaries. To date, no systematic review and meta-analysis was found comparing the effectiveness of group treatment by treatment philosophies Abstinence and Harm Reduction. A summary was provided.

In Chapter III, the methodological design of the proposed study was described. Study selection protocol such as inclusion and exclusion criteria, search strategy, and information sources was provided. Data collection, methods for assessing risk to internal validity, and summary measures were defined. Data collected from selected studies included study characteristics such as patient population demographics, design, objective, setting, and primary outcome(s). Intervention effects and comparison information were also collected. Four main threats to internal validity were discussed. Summary measures included methods of synthesis, publication bias, and selective reporting.

Chapter IV includes study selection, study characteristics, results of individual studies, synthesis of results, and a summary of findings. Measures of quality, heterogeneity, and risk of bias were provided. Assessment of internal validity of individual studies including publication and reporting biases were described. Adverse and harmful effects concluded the results section of this study.

Chapter V provided a review of the previous chapters, summary of the evidence, generalizability, conclusions, and implications. The aim of this systematic review and meta-analysis was to provide an answer to the following primary research question: Is there a significant statistical and clinical difference in group treatment effectiveness when comparing group treatment by Harm Reduction or Abstinence treatment philosophies? Main findings of the synthesis, alternative explanations for observed results, and similarities and differences from previous syntheses were provided. Generalizability of conclusions including implications for related populations, intervention variations, and treatment outcomes was discussed. Implications for further research, theory, policy, and/or practice was provided.

CHAPTER II

BACKGROUND OF THE STUDY

The primary purpose of this literature review is to establish the need for a review of group treatment effectiveness for substance use disorders (SUDs) by treatment philosophy within the U.S. Although group treatment is deemed treatment as usual for most programs, existent literature focused on group treatment for substance use disorders is scarce (Wendt & Gone, 2017). Considering the wide acceptance of group treatment as an effective and evidence-based intervention, the gap in the literature is concerning. To date, no systematic review and meta-analysis was found comparing the effectiveness of group treatment by treatment philosophies Abstinence and Harm Reduction. Comparing the effectiveness of treatment philosophies will add to current knowledge of treatment for SUDs. Literature reviewed, appraised, and synthesized includes previous systematic reviews with meta-analyses, narrative, or qualitative summaries.

Previous Syntheses

Prendergast et al. (2002) investigated the effectiveness of substance use treatment and conducted a meta-analysis on 78 studies published from 1965 to 1996. While there was no special attention given to group treatment in the review, significant effects were found. Outcomes for individuals who received treatment for SUDs had an adjusted average effect size of 0.34 for substance use and 0.16 for crime-related measures. Effect sizes of 0.20 are considered small, 0.50 medium, or 0.80 and greater as large (Cohen, 1988). Prendergast and colleagues concluded:

> Considering the positive results from this meta-analysis, as well as the findings from other meta-analyses and narrative reviews of drug treatment, it would seem appropriate to

> cease asking whether treatment for drug abuse is effective and begin asking instead how treatment can be improved and how it can be tailored to the needs of different types of clients (p. 66).

Toward that purpose, six previous syntheses were identified in the literature that provide further evidence regarding group treatment effectiveness for substance use disorders (Engle & MacGowan, 2009; Lo Coco et al., 2019; Orchowski & Johnson, 2012; Sobell & Sobell, 2011; Sokol et al., 2018, Weiss et al., 2004). There were several reviews of related interest but were not included due to lack of reporting, results, or focus on group treatment as the independent variable and/or treatment outcomes for substance use disorder (Amato et al., 2011; Burlingame et al., 2013; Cleary et al., 2008; Drake et al., 2008; Dugosh et al., 2016; Hess, 2009; Hunt et al., 2014; Jiang et al., 2017; Klimas et al., 2014; Magill & Ray, 2009; Pennay et al., 2011; Roberts et al., 2015; Tanner-Smith et al., 2011; Waldron & Turner, 2008).

In a narrative review, Weiss and colleagues (2004) found only 24 studies comparing outcomes of group treatment for SUDs. The studies were categorized into six research designs by the primary treatment employed which included four studies on group therapy vs. no group therapy (Luthar & Suchman, 2000; Razavi, 1999; Stephens et al., 2000; Weiss et al., 2000), three studies on group therapy vs. individual therapy (Graham et al., 1996; Marques & Formigoni, 2001; Schmitz et al., 1997), one study on group therapy plus individual therapy vs. individual therapy alone (Linehan et al., 1999), two studies on group therapy plus individual therapy vs. group therapy alone (Crits-Christoph et al., 1999; McKay et al., 1997), 13 studies on group therapy vs. specialized group therapy (Annis, 1979; Eriksen et al., 1986; Ito et al., 1988; Joanning et al., 1992; Kadden et al., 1989; Kadden et al., 2001; Kaminer et al., 2002; Martin et

al., 1996; Olson et al., 1981; Omer et al., 1998; Pomerleau et al., 1978; Smith et al., 2001; Telch et al., 1984), and one study on more group therapy vs. less group therapy (Coviello et al., 2001).

In comparisons for group therapy vs. no group therapy, results from studies three of the four studies indicated effectiveness of group therapy when added to treatment as usual (TAU) or when compared to a controlled condition. Luthar and Suchman (2000) compared group treatment vs. TAU of methadone maintenance for 261 participants with heroin use disorder and found significant improvements in reduced opioid use and improved child maltreatment, parent-child interaction, and overall adjustment when randomly assigned to a specialized relational group therapy in addition to treatment as usual, methadone maintenance counseling. Stephens et al. (2000) randomly assigned 291 adults to three conditions, including 14-week cognitive behavioral treatment in a closed group designed for relapse prevention, three individual treatment sessions consisting of initial assessment and two brief follow-ups, and a delayed condition that received no treatment for four months. Results indicated that all conditions significantly improved over time, but the two treatment conditions demonstrated better results at the four-month measure (d = 1.01 and .85). Weiss et al. (2000) randomly assigned 45 individuals with co-occurring disorders of bipolar and substance use disorder to attend 12 to 20 weeks of integrated group treatment or to attend only monthly assessments without group treatment, with attempts to hold other treatment factors stable such as treatment as usual. Those who participated in group treatment had significantly better outcomes than those in the control condition with both scores on the Addiction Severity Index and in length of abstinence. The fourth study by Razavi et al. (1991) demonstrated no significant differences for outcomes when comparing treatment conditions of self-help group, professionally-led group, and no group for 993 participants for tobacco use disorder.

For comparisons of group therapy vs. individual therapy, substance use improved significantly overall; however, the reviewers were unable to distinguish differences between group and individual treatment outcomes and suggested that the two psychosocial interventions are equivalent. Graham et al. (1996) assigned 192 patients with a substance use disorder to 12 weeks of relapse prevention treatment, either group or individual therapy. There were no significant differences between conditions for treatment outcomes, measured by formal assessments for alcohol use (d = .14). Marques and Formigoni (2001) assigned 155 patients with a substance use disorder to group or individual cognitive-behavioral therapy for 17 sessions upon completing inpatient treatment. There were no significant differences between conditions for treatment outcomes, measured by formal assessment for substance use (d = .25). Similarly, there were no significant differences found between group and individual treatment modalities for the majority of outcome measures in a study conducted by Schmitz et al. (1997) where 32 patients with cocaine use disorder were assigned to 12 sessions of either individual or group treatment. However, patients in the group condition reported less days using cocaine during treatment than did the individual condition.

To extend the study conducted by Weiss et al. (2004), Sobell and Sobell (2011) included a fourth study by Duckert et al. (1992) that focused on comparing group and individual treatment for substance use disorder where 135 males with alcohol use disorder were randomly assigned to 12 sessions of either individual or group cognitive-behavioral therapy. Similarly, no significant differences were found between conditions for treatment outcomes, including alcohol use. Sobell and Sobell concluded that the gap in the literature of research on the efficacy of group therapy may be due to the difficulty of delivering the same type of treatment in a group versus an

individual session thus limiting comparative effectiveness research, and because of differential attrition whereby individuals are more likely to drop out when assigned to group therapy.

When Weiss and colleagues (2004) compared group therapy plus individual therapy vs. group therapy alone or individual therapy alone, results were mixed. Crits-Christoph et al. (1999) randomly assigned 487 participants with cocaine use disorder to one of four treatment conditions, group alone, group plus cognitive behavioral therapy, group plus supportive-expressive therapy, and group plus individual therapy. There were no significant differences amongst treatment comparisons except for group plus individual therapy which results in better treatment outcomes as indicated by scores on the Addiction Severity Index. In contrast, Linehan et al. (1999) randomly assigned 28 participants with one or more SUDs and borderline personality disorder to one-year of either TAU which consisted of individual therapy and case management or to dialectical behavioral therapy (DBT) plus group. Results indicated outcomes for substance use were significantly better for the DBT plus group treatment condition at both the four-month and 16-month assessments (d = 1.03). McKay et al. (1997) randomly assigned 98 participants to either group alone or group plus individual relapse prevention therapy. Results indicated each treatment condition was superior when compared at different times. At the 3-month follow-up, participants assigned to group plus individual had better results for substance use measured by self-report and urinalysis (d = .59); however, participants assigned to group alone demonstrated better results at the 6-month follow-up.

When Weiss and colleagues (2004) compared group treatments by content and theoretical orientation, there was one comparison that relates to the inquiry of this study. Pomerleau and colleagues (1978) compared behavioral group therapy with the treatment goal of reduced alcohol use to “traditional” treatment with abstinence as the treatment goal. Group treatment included

12-weeks of 90-minute sessions followed by five maintenance sessions over a nine-month period. Of the 32 randomly assigned individuals with substance use disorders, 24 were present for the one-year follow up where self-report and liver functioning was measured. Individuals in the behavioral group therapy demonstrated greater reduction in alcohol use and greater retention in treatment than did individuals in the "traditional" treatment group.

Engle & MacGowan (2009) conducted a narrative review on the efficacy of group treatment for adolescents. Of the 12 studies, only two met criteria of Chambless and Hollon's (1998) criteria of efficaciousness (Waldron et al., 2000; Liddle et al., 2001). It was reported in these two studies that the experimental conditions outperformed control conditions at the 7- and 12-month follow-up on treatment outcomes for substance use disorders. It was also reported that the experimental conditions, a Psychoeducational Therapy group and an Adolescent Group Therapy group, significantly reduced illicit substance use from the baseline measures.

Orchowski & Johnson (2015) provided a narrative review of the efficacy of group treatment for alcohol use disorder and compared 15 articles by approach to treatment (Allsop et al., 1997; Burtscheidt et al., 1999; Burtscheidt et al., 2001; Conners & Walitzer, 2001; Cooney et al., 1991; Kadden et al., 1998; Kadden et al., 2001; Litt et al., 2003; Monti et al., 2001; O'Malley et al., 2001; Sandahl et al., 1998; Sandahl et al., 2004; Walitzer & Conners, 2007; Wetzel et al., 2004; Wolwer et al., 2001). Three comparisons of approaches to treatment were reviewed, i.e. group cognitive-behavioral, group brief dynamic/ interactional psychotherapies, and combined pharmacological/ group treatments. The results were mixed as only one or two studies per comparison were found to support group treatment efficacy by each specific approach to treatment. A limitation of the review was that only two of the reviewed articles reported effect sizes. Orchowski & Johnson concluded that group treatment literature is in its infancy compared

to the amount of studies that are published on the impact of approach to treatment for individual treatment.

Sokol et al. (2018) conducted a systematic review of group-based opioid treatment (GBOT) which operationally defined GBOT as treatment programs for individuals with opioid use disorder receiving buprenorphine and group treatment concurrently. There were no previous reviews on GBOTs. The results indicated that the existent literature was scarce, as only ten articles were identified. Of the 10 studies, four focused on shared medical appointments (Berger et al., 2014; Doorley et al., 2017; Roll et al., 2015; Suzuki et al., 2015) and six described utilizing group treatment (Imani, Atef Vahid, Garraee, Noroozi, et al., 2015; Lander et al., 2016; Mitchell et al., 2013; Miotto et al., 2012; Pugatch et al., 2014; Raisch et al., 2012). The researchers stated that none of the studies were adequately designed to compare treatment efficacy of group treatment versus medication-alone or individual treatment. Limited conclusions could be made due to the small number of studies, however, there was no strong evidence to suggest that concurrent group treatment improved substance use outcomes. Further research is needed to provide a better understanding of the impact of group treatment for opioid and other substance use disorders.

Lo Coco et al. (2019) performed a systematic review and meta-analysis of randomized-controlled trials that included 33 studies of 34 treatment conditions. Of the 3951 patients, 2103 were randomly assigned to intervention groups and 1848 to control groups. The average age of patients was 38.2 years and 36.2% identified as female. The included studies compared group treatment to a control group in a total of 34 comparisons, group treatment to no treatment control groups in nine studies, and group treatment to individual treatment in seven studies, and group treatment to other treatments in 18 studies. Treatment outcomes were categorized as abstinence,

frequency of substance use, substance use disorder and co-occurring mental health symptoms, and attrition.

Results for abstinence were significant and group therapy demonstrated small effects for each comparison, group vs. no treatment, g = 0.28 and 95% CI [0.04, 0.52]; group vs. individual treatment, g = 0.34 and 95% CI [0.06, 0.62]; and group vs. other treatments g = 0.29 and 95% CI [0.07, 0.50]. Results for frequency of substance use and symptoms of substance use disorders were not significant. Results for co-occurring mental health symptoms were significant medium effects when comparing the effect of group treatment to no treatment, g = 0.64 and 95% CI [0.38, 0.90]; however, there were no significant results when comparing the effect of group treatment to individual treatment or other treatments. Attrition rate was 34% overall and there were no significant differences in rate of attrition for group vs. no treatment, RR = 0.96, 95% CI [0.83, 1.12], k = 5; group vs. individual treatment, RR = 1.01, 95% CI [0.82, 1.23], k = 5; and group vs. other treatments, RR = 1.03, 95% CI [0.94, 1.13], k = 15. Few studies included follow up treatment outcome measures within 12 months of the group intervention; however, significant medium effects for abstinence were found when comparing group vs. no treatment, g = 0.67 and 95% CI [0.40, 0.93], k = 5, I^2 = 0%. These results provide some evidence of group treatment effectiveness on abstinence.

Summary

In a 25-year retrospection of small group process and outcome research, Burlingame and Jensen (2017) concluded that group treatment for adults and adolescents with substance use disorders produce moderate positive effects. However, based on the available literature, it appears that research on group treatment is scarce (Orchowski & Johnson, 2012; Sokol et al., 2018; Weiss, 2004). The shortage of evidence supporting the effectiveness of group treatment is

concerning as group treatment is the most common intervention when treating substance use disorders. The most recent review by Lo Coco and colleagues (2019) provided some evidence that group treatment was effective for abstinence outcomes on a global scale; however, results for frequency of substance use and symptoms of substance use disorders were not significant. It is also a concern that to date there has not been a review focused on treatment philosophies Abstinence and Harm Reduction as that is the current and ongoing controversy within the field of treatment for substance use disorders. Only one previous synthesis provided a comparison that was related to the inquiry of this study. In Weiss and colleagues' (2004) systematic review, Pomerleau and colleagues (1978) compared behavioral group therapy with the treatment goal of reduced alcohol use to "traditional" treatment with abstinence as the treatment goal and found that individuals in the behavioral group therapy demonstrated greater reduction in alcohol use and greater retention in treatment than did individuals in the "traditional" treatment group. In summary, a current review focused on group treatment by treatment philosophy within the U.S. is needed.

CHAPTER III

METHODOLOGY

Methodology is defined in this chapter. All methods were determined *a priori*. The purpose of this study was to conduct a systematic review of published literature on group treatment for substance use disorders and using meta-analysis to provide information related to the primary research question, Is there a significant clinical and statistical difference in group treatment effectiveness when comparing group treatment by Harm Reduction or Abstinence treatment philosophies? This study follows protocols established in the Meta-Analysis Reporting Standards (MARS) for quantitative research synthesis (Cooper, 2018). In accordance to the MARS protocol, the following will be discussed: inclusion and exclusion criteria, information sources, study selection, data collection, methods for assessing risk to internal validity, methods of synthesis, and publication bias and selective reporting.

Inclusion and Exclusion Criteria

Studies were reviewed for eligibility determined by inclusion and exclusion criteria. Targeted studies included published scholarly, peer-reviewed journal articles within the past 15 years, i.e. 2004-2020. The setting of the study must be in the U.S. and written in the English language. Eligible participant populations included individuals receiving group treatment for substance use disorders. Targeted participants were individuals diagnosed with one or more substance use disorders as defined by *The Diagnostic and Statistical Manual of Mental Disorders*, (5^{th} ed.; *DSM-5*; American Psychiatric Association, 2013). Individuals diagnosed with one or more co-occurring disorders were also be included. There were no restrictions for participant demographics such as age, gender, socioeconomic status, or specialty populations such as mandated or incarcerated individuals.

Targeted research designs were randomized and non-randomized controlled trials studying the effects of group treatment as a psychosocial intervention for treating substance use disorder. Less rigorous designs were assessed for inclusion due to the real-world limitations of this type of treatment. Random design and/or control groups for comparison are often not imposed in applied research where consumers of the treatment programs require immediate help and are ethically bound to receive services. Due to this departure from standard practice of excluding less than rigorous studies, bias will be a risk factor to the conclusions of this study. The Cochrane Collaboration tool will be used to reduce the bias. Post-test only single group designs and systematic reviews will be excluded.

The selected studies must involve group treatment as the primary intervention for substance use disorder(s). The operational definition of group treatment for substance use disorders is two or more unrelated individuals diagnosed with one or more substance use disorders who meet to purposefully to improve wellbeing. Treatment outcomes must be measured in quantitative methods with group treatment as the independent variable and substance use disorder outcomes as the dependent variables. Because there is not yet a standardized measure of treatment outcomes for substance use disorders, selected studies will be investigated for common definitions of outcome measures such as reduction of substance use. Studies with insufficient data reported will be excluded. The selected studies must also indicate treatment philosophy used and provide a direct comparison of Abstinence and Harm Reduction.

Information Sources

Scholarly, peer-reviewed journal articles focused on group treatment as the psychosocial intervention used in treating substance use disorders were the target for this search strategy. The following databases were searched:

1. Cochrane Central Register of Controlled Trials on Ovid
2. Science Direct
3. PsycINFO
4. CINAHL Plus
5. PubMed

To ensure a comprehensive search strategy and replicability of this study, key terms were developed with the help of the dissertation committee and the librarians at Old Dominion University. The following searched terms were used: ("group therapy" or "group psychotherapy" or "group treatment" or group) AND ("substance use disorder" or substance* or addiction or drug or dependent or co-occurring), where "*" is a wildcard term.

Study Selection

The process of deciding which studies to include in the meta-analysis began with a review of journal article titles and abstracts. Initial results from searched databases included 25 articles from the Cochrane Central Register of Controlled Trials on Ovid, over 5 million from Science Direct, 762 from PsycINFO, 5,200 from CINAHL, and 8,449 from PubMed. The journal titles and abstracts were reviewed for the first 200 articles of each database or further if subject relevance was not exhausted by the 200th article. Relevant articles were downloaded in .pdf format for further review. Articles unavailable for download were search on Google Scholar or requested via Interlibrary Loan.

Data Collection

A comprehensive search was conducted from March 2019 to May 2020. Data collected from selected studies included study characteristics such as patient population demographics, design, objective, setting, and primary outcome(s). Intervention effects and comparison information were also collected. Data abstracted and extracted was conducted by the doctoral candidate on a single occasion which is considered a less robust strategy and may weaken the results of the analyses.

Methods for Assessing Risk to Internal Validity

Four main threats to internal validity have been identified for meta-analyses and comparative effectiveness research. Publication bias, dissimilar studies, poor quality studies, and limitation of indirect comparisons (Berlin & Sepeda, 2012, Prendergast et al., 2002). Publication bias denotes that scholarly, peer-reviewed studies represent a bias pool of data because only studies with significant outcomes are selected for publication (Bown & Sutton, 2010). Rosenthal (1979) suggests including a certain number of unpublished studies to mitigate the effect of publication bias. Inclusion of dissimilar studies is known as the 'apples and oranges' dilemma where important differences among treatments are lost due to failure to define the subject adequately resulting in too broad of a subject (Eysenck, 1978). Inclusion of studies with poor methodological design is known as the 'garbage in, garbage out' dilemma (Bangert-Drowns, 1986; Slavin, 1986). Indirect comparisons of outcomes from different studies often produces biased results and requires statistical adjustments to improve internal validity (Berlin & Cepeda, 2012).

For the proposed study, several of the threats to internal validity are addressed to mitigate the impact of these threats. The subject was narrowly defined as the impact of group treatment for substance use disorder on quantitative treatment outcomes. Study selection was aided by the GRADE approach (Higgins & Green, 2008) and the Cochrane Collaboration Risk of Bias 2 tool (Higgins et al., 2011) for quality and risk of bias to improve validity for dissimilar and poor-quality studies. Direct comparisons of group treatment interventions by treatment philosophies of Abstinence and Harm Reduction will be difficult to obtain, as currently there are no standardized measurements of treatment effect for substance use disorder limiting the ability to investigate treatment efficacies across studies (Tiffany et al., 2011). This study will include

outcome measures presented in the included studies, but those measures may have to be expanded or collapsed to meet requirements for statistical power (Balkin & Sheperis, 2011). Heterogeneity of effect sizes will be investigated prior to conducting meta-analyses.

Summary Measures

Methods of Synthesis

Data was converted to standardized mean differences (*Cohen's d*), as needed, then transformed to bias-corrected standardized mean differences (*Hedges'* g) to create a common index (Borenstein et al., 2009). The formula for calculating Hedge's (g) is $(M_1 - M_2)/(SD^*_{pooled})$. Random-effects model meta-analyses was used due to assumed heterogeneity within and between studies (Bown & Sutton, 2010; Conn et al., 2012). Meta-analysis was used to compute effect sizes for targeted treatment outcomes to compare treatment philosophies. Conversion of effect size metrics to their original form was conducted to enhance meaningfulness when necessary for clearer clinical interpretation. All calculations were conducted using RevMan 5.4.

Publication Bias and Selective Reporting

Publication bias and selective reporting is due to a higher proportion of studies with positive and significant results represented in published in scholarly, peer-reviewed journals than studies with negative and/or insignificant results which are often unlikely to be published (Higgins & Green, 2008). This inflation of representation within published literature influences validity and generalizability of meta-analyses (Lin & Chu, 2018). Methods used to mitigate the impact of publication bias were to identify unpublished studies and unreported data. Publication bias and selecting reporting for individual studies will be discussed in Chapter IV.

CHAPTER IV

RESULTS

Results of the systematic review and meta-analysis are reviewed in this chapter. The purpose of this study was to compare group treatment effectiveness for substance use disorders (SUDs) by treatment philosophies of Abstinence and Harm Reduction within the U.S. This chapter describes study selection, study characteristics, results of individual studies, synthesis of results, summary of findings, assessment of internal validity of individual studies, publication and reporting bias, and adverse and harmful effects.

Study Selection

Over 100 articles were identified in the initial review of journal article titles and abstracts. Upon further review of the entire articles, 10 were excluded because group treatment was not the independent variable of inquiry, 17 were excluded due to no reported outcome measures of substance use disorders as the dependent variable(s), one was excluded because of insufficient outcome measures of SUDs, and one was excluded due to the participant population where there was no diagnosis of substance use disorder, as it was a prevention intervention. Therefore, 76 articles met the inclusion criteria of group treatment as the targeted independent variable and outcome measures of substance use disorders as the dependent variable(s).

The remaining 76 articles were reviewed with special attention given to treatment of participants and explicit language used by study authors to determine if Harm Reduction or Abstinence treatment philosophies were indicated within the manuscripts. Once treatment philosophies were identified, a further review to determine if head-to-head comparisons by treatment philosophies Abstinence and Harm Reduction were the focus of the comparative studies. Thirteen articles indicated direct comparisons of treatment philosophies Abstinence and

Harm Reduction and were reviewed for adequate quantitative data for abstraction. Eight articles were excluded due to outcome measurements for SUDs reported as change scores. Because standard deviations of change scores were not reported and are considered missing data (Higgins & Green, 2008), the articles were excluded for insufficient data. Five articles reported sufficient data and were included for meta-analysis. The study selection process of inclusion criteria application is detailed in Table 1. A full list of excluded articles and rationale for exclusion is provided in Table 4 in Appendix A.

Table 1
Meta-Analysis Inclusion Criteria

Criteria	*n*
Published between 2004-2020, conducted in U.S. and written in English, utilized quantitative methodology, not a meta-analysis	105
Group treatment as IV and outcome measures of SUDs as DV	76
Comparison of Harm Reduction and Abstinence treatment philosophy	13
Sufficient data reported (*M*, *SD*)	5

Study Characteristics

Data collected from selected studies included study characteristics such as patient population demographics, design, objective, setting, primary outcome(s). Study characteristics, quality, and risk of bias are presented in Table 2. A brief overview of each included study is also provided below.

Miotto and colleagues (2012) recruited potential participants for their study from September 1999 to December 2000 by marketing methods with special emphasis on female recruitment from local treatment programs. Participants were screened for eligibility. Eligibility requirements were a diagnosis of opioid use disorder without any other concurrent substance use disorders except for tobacco use disorder, no known concurrent medical or psychiatric conditions that would interfere with treatment, and no methadone use for the past 30-days or concurrent enrollment in a methadone program. Females were required to use birth control measures if they

were of reproductive age and were excluded from the study if pregnant or breast-feeding. The overall sample demographics were 58% male and 42% female, predominantly 58% White and Hispanic 28%, with an average age of 35 years old. A total of 94 participants met eligibility, began induction onto buprenorphine, and were randomly assigned to one of three treatment settings. Each treatment setting provided distinct psychosocial interventions and buprenorphine for medication-assisted treatment of opioid use disorder.

Treatment settings included (1) a behaviorally oriented psychosocial treatment referred to as the manualized Matrix Model (MMM) that included weekly group treatment provided by a master's level clinician; however, attendance was not mandatory and therefore this condition is considered as the Harm Reduction condition for this study, (2) an Opioid Treatment Program (OTP) that included a schedule of treatment sessions weekly for the first six weeks and then monthly for up to one year provided by a certified drug and alcohol counselor, and (3) a primary care setting where a physician provided support and education about substance use and recovery. Treatment in the OTP condition is considered as the primary Abstinence condition for this study due to the emphasis on mandatory treatment attendance and participation on traditional topics such as relapse prevention, managing cravings, and recovery. The participants randomly assigned included 33 to MMM with 42% who identified as female, 28 to OTP with 23% female, and 33 to Primary Care with 48% female, respectively. There were no significant differences at baseline measure of drug use characteristics.

A study by Nyamathi and colleagues (2011) also evaluated the effectiveness of three programs that offered distinct psychosocial interventions while providing medication-assisted treatment for opioid use disorder, i.e. motivational interviewing group treatment (MI-G), motivational interviewing individual treatment (MI-S), and nurse-led hepatitis health promotion

group treatment (HHP). Motivational interviewing (MI) is non-confrontational and conveys a neutral stance towards substance abuse as the primary goal of MI is to improve an individual's motivation to consider change(s). Because of this, the motivational interviewing group treatment (MI-G) is considered the primary Harm Reduction condition and the nurse-led hepatitis health promotion group treatment (HHP) is considered the Abstinence condition due to its focus on information dissemination as the goal of the treatment intervention.

Individuals were made aware of the study by flyers posted in five Methadone Maintenance clinics in the Los Angeles and Santa Monica areas. Eligibility for individuals to be recruited included receiving methadone as a medication-assisted treatment for opioid use disorder for the past three months, ages 18 to 55 years old, and self-reports of moderate to heavy alcohol use. A total of 256 participants met eligibility. Baseline measures were collected from February 2007 and May 2008 including socio-demographic information, a screen for alcohol use and severity, and a health history related to hepatitis. The overall sample demographics were 59% male and 41% female, predominantly 45% Black and 27% Latino, with an average age of 52 years old. There were no significant differences in participant characteristics at baseline. Participants were randomly assigned to one of the three programs, 79 to MI-G with 42% who identified as female, 90 to MI-S with 40% female, and 87 to HHP with 41% female, respectively. Each provided three 60-minute interventions.

Rosenblum and associates (2005) recruited participants for their study using flyers at a soup kitchen in New York City. Individuals that were eligible for inclusion were at least 18 years old, self-reported concerns about past and current substance use, and expressed interest in participating in the study. Eligible and interested individuals attended an initial appointment and were interviewed and tested for HIV and drug use. The overall sample demographics were 82%

male and 18% female, predominantly 68% Black, 15% Hispanic, and 17% White/ Other, with an average age of 42 years old. A total of 290 participants met eligibility and were randomly assigned to one of two treatment conditions. Treatment conditions included the experimental group where individuals received an intervention titled Service Outreach and Recovery (SOAR) which included two separate sequential therapies provided by master's level clinicians with additional certification to provide treatment for SUDs, Motivational Enhancement for Recovery (MER) and Education and Skills for Recovery (ESR). The control condition where individuals received Information and Referral (I&R) and peer support. A total of 151 were randomly assigned to the SOAR condition of which 17% identified as female and 139 were randomly assigned to the I&R condition of which 18% identified as female.

Motivational Enhancement for Recovery (MER) group treatment was offered three times per week for four weeks. Similar in approach to motivational interviewing, the MER group therapist offered participants a safe space free from judgment or imposing solutions to explore the impact of substance use both good and bad. The therapist listened, reflected neutrality toward substance use, and provided empathy and affirmations. Once completing MER, individuals entered the second module, Education and Skills for Recovery (ESR). ESR group treatment was offered three times per week for 12 weeks and utilized cognitive-behavioral approach to treatment for SUDs. Participant attendance to group treatment was encouraged; however, was not mandatory and those who attended sporadically continued to be welcome to the group. The SOAR condition is considered the Harm Reduction Condition.

Weiss and associates (2007) conducted a randomized controlled trial for individuals with co-occurring bipolar and substance use disorders by recruiting from within McLean Hospital's programs with referrals and posted flyers. A total of 62 individuals met inclusion criteria of

diagnosis of the co-occurring disorders, were at least 18 years of age, self-reported substance use within the past 60 days, and were actively taking medication for bipolar disorder for more than two weeks. Exclusion criteria included current psychosis, imminent harm to self or others, or engagement in other group treatment or treatment at a residential facility where substance use is restricted. The overall sample demographics indicated the average age of participants was 42 years old and 93.5% identified as White. Participants were randomized to the experimental condition, 31 individuals with 52% identifying as female to Integrated Group Therapy (IGT), or to the control condition, 31 individuals with 52% identifying as female to Group Drug Counseling (GDC). Each treatment condition was delivered once weekly for one-hour over the course of 20 weeks.

Integrated Group Therapy (IGT) was provided by doctoral and master's level clinicians with at least three years of experience working with co-occurring mental health and substance use disorders. The theoretical approach of IGT was an adaptation of cognitive-behavioral therapy to include a focus on the interaction of thoughts and behaviors for both bipolar and substance use disorders. Each week participants would "check-in" and self-report to the group on mood, medication compliance, risky scenarios experienced, and on substance use. The inclusion of reported substance use without negative consequences, leveraged treatment, or removal from treatment and the study deems the IGT group the Harm Reduction condition. Group Drug Counseling (GDC) was also provided once weekly for one-hour for 20 weeks. Master's level clinicians with more than three years of experience working with co-occurring disorders provided a treatment approach that was designed to mirror treatment as usual provided at community treatment programs for SUDs. The primary goal of treatment was to facilitate abstinence which deems this treatment as the Abstinence condition of this study.

Weiss and associates (2009) adjusted their previous studies (2000; 2007) to create a "community friendly" version of Integrated Group Therapy (IGT) for individuals with co-occurring bipolar and substance use disorders. The duration of treatment was reduced for both the experimental and control conditions from the previous 20-week duration (2007) to 12-weeks to better reflect real-world implementation of the group treatment intervention. Another adjustment for this study included using only certified drug and alcohol counselors instead of more extensively trained clinicians also to better represent real-world conditions. The approaches to treatment remained constant and the hour-long weekly Integrated Group Therapy (IGT) sessions were deemed as the HR condition and the Group Drug Counseling (GDC) condition was considered the Abstinence condition. Participants were randomly assigned, 31 individuals with 41% identifying as female to IGT and 30 individuals with 41% identifying as female to GDC. Overall sample demographics indicate the average age of a participant was 38 years old and 92% of participants identified as White.

Results of Individual Studies

Overall, five studies met the inclusion criteria. Results from individual studies are provided below. Means and standard deviations were used to calculate Hedge's *g* effect sizes for the outcome measure of substance use and are summarized at each time point of data collection. Data for results of individual studies are provided in Table 3. In four out of the five studies, individuals randomized to the Harm Reduction condition had greater reduction in substance use (Nyamathi et al., 2011; Rosenblum et al., 2005; Weiss et al., 2007; Weiss et al., 2009) than did individuals in the Abstinence condition (Miotto et al., 2012); however, not all differences were clinically or statistically significant. Effect sizes of 0.20 are considered small, 0.50 medium, or 0.80 and greater as large (Cohen, 1988).

Table 2
Characteristics of Included Studies

Author(s) and publication year	Design, objective, and setting	Group Tx *N* (% female)	Comparison *N* (% female)	Primary outcome(s)	Quality	Risk of Bias
Miotto et al. (2012)	Randomized study comparing outcomes of treatment settings for individuals with opioid use disorder on buprenorphine over 52-weeks of the study duration	Manualized Matrix Model (MMM) 33 (42%)	Opioid Treatment Program (individual) 28 (23%) Primary Care 33 (48%)	Substance use measured by urine drug screen, treatment retention, and treatment participation	Moderate	Low
Nyamathi et al. (2011)	RCT comparing outcomes of three interventions: Motivational Interviewing (MI) group or individual and Nurse-led hepatitis health promotion (HHP) group- three sessions for 60 minutes each - at five outpatient Methadone Maintenance clinics for individuals with opioid use disorder self-reporting moderate-to-heavy alcohol use	MI-G (group) 79 (42%)	HHP (group) 87 (41%) MI-S (individual) 90 (40%)	Alcohol use measured by self-report Substance use measured by self-report	High	Low

Rosenblum et al. (2005)	RCT comparing outcomes of Service Outreach and Recovery (SOAR) which includes two separate and sequential therapies. Motivational Enhancement for Recovery (MER) offered a four-week intervention with three sessions per week followed by Education and Skills for Recovery (ESR) that offered a 12-week intervention with three sessions per week to a control condition of Information and Referral (I&R) plus peer advocacy (peers encouraging subjects to participate in other services) at a soup kitchen	SOAR (MER+ ESR) 151 (17%)	I&R plus peer support 139 (18%)	Substance use measured by self-report and treatment participation	High	Low
Weiss et al. (2007)	RCT comparing outcomes of Integrated Group Therapy (IGT) to Group Drug Counseling (GDC) of 20-weekly hour-long sessions at a hospital setting for individuals with co-occurring substance use and bipolar disorders	IGT 31 (52%)	GDC 31 (52%)	Substance use measured by self-report and urine drug screen	High	Low
Weiss et al. (2009)	RCT comparing outcomes of Integrated Group Therapy (IGT) to Group Drug Counseling (GDC) of 12-weekly hour-long sessions at a hospital setting for individuals with co-occurring substance use and bipolar disorders	IGT 31 (41%)	GDC 30 (41%)	Substance use measured by self-report and urine drug screen	High	Low

Table 3
Substance use: Results of Individual Studies

Study	Baseline		Follow-Up 1		*g*		Follow-Up 2		*g*	
	EXP Mean (SD)	Control Mean (SD)	EXP Mean (SD)	Control Mean (SD)	EXP	Control	EXP Mean (SD)	Control Mean (SD)	EXP	Control
Miotto et al. (2012)	N/A	N/A	MMM 0.29 (0.35)	OTP 0.21 (0.26) PC 0.16 (0.22)	N/A	N/A	MMM 0.33 (0.37)	OTP 0.22 (0.27) PC 0.17 (0.24)	MMM .11	OTP .04 PC .06
Nyamathi et al. (2011)	MI-G 1.07 (3.37)	HHP 0.35 (2.98) MI-S 0.93 (3.04)	MI-G 0.04 (1.51)	HHP 0.12 (1.49) MI-S 0.33 (1.71)	MI-G .39	HHP .10 MI-S .24	N/A	N/A	N/A	N/A
Rosenblum et al. (2005)	SOAR + ESR 14.0 (12.20)	I&R plus peer advocacy 13.9 (11.80)	SOAR + ESR 8.3 (10.8)	I&R plus peer advocacy 10.3 (11.40)	SOAR + ESR .49	.31	N/A	N/A	N/A	N/A
Weiss et al. (2007)	IGT 11.7 (11.0)	GDC 11.7 (11.0)	IGT 5.3 (6.6)	GDC 10.0 (9.1)	IGT .71	GDC .17	IGT 6.0 (9.1)	GDC 12.0 (10.8)	IGT .56	GDC .07
Weiss et al. (2009)	IGT 18.6 (9.8)	GDC 17.9 (8.8)	IGT 4.4 (7.2)	GDC 6.5 (7.9)	IGT 1.65	GDC 1.36	IGT 5.2 (7.0)	GDC 7.9 (10.7)	IGT 1.57	GDC 1.02

Rosenblum et al. (2005) reported significant results for the reduction of days using substances for both conditions from baseline to five-month follow-up ($P < .01$) measured by the Time-Line Follow Back interview (Sobell & Sobell, 1996); however, the HR condition had a greater impact with a medium effect size ($g = .49$) compared to the control condition ($g = .31$).

Nyamathi and colleagues (2011) measured substance use as change per day of drug intake as a composite drug score that represents the frequency and severity of self-reported recall. Reductions in average daily drug intake reduced significantly as per self-report for past 30 days ($P < .0001$). The baseline measure of self-report of substance use over the past six months revealed a trend of declining substance use over time ($P = .09$). There were no significant differences between the three program types. The effect size of the HR condition Motivational Interviewing- Group (MI-G) demonstrated the greatest impact ($g = .39$), followed by the Motivational Interviewing- Single (MI-S), individual sessions, ($g = .24$). The control condition of nurse-led Hepatitis Health Promotion (HHP) group sessions were least impactful ($g = .10$).

Weiss et al. (2007) measured treatment efficacy by days of substance use using the Addiction Severity Index (McLellan et al., 1992), the Timeline Follow-Back technique (Sobell & Sobell, 1992), and urine drug screen analysis. Overall, substance use decreased during treatment; however, the HR condition, Integrated Group Therapy (IGT), demonstrated greater impact on reducing days of substance use ($g = .71$) than the Abstinence condition, Group Drug Counseling (GDC) ($g = .17$). Days of substance use during treatment for IGT decreased by 6.4 days ($P < .001$) compared to 1.7 days for GDC. At follow-up, days of substance use increased in the GDC group by 0.3 days; however, the IGT group continued to demonstrate a reduction of 5.7 days of substance compared to the baseline assessment.

Weiss et al. (2009) also measured treatment efficacy by days of substance use using the Addiction Severity Index (McLellan et al., 1992), the Timeline Follow-Back technique (Sobell & Sobell, 1992), and urine drug screen analysis. Overall, treatment efficacy of both conditions demonstrated changes in mean substance use larger than one standard deviation at both follow-up measures. The effect sizes for the HR condition, Integrated Group Therapy (IGT), at three and six month follow-ups were large ($g = 1.65$) and ($g = 1.57$) as were the effect sizes for the Abstinence condition, Group Drug Counseling (GDC), ($g = 1.36$) and ($g = 1.02$).
While both treatment conditions were highly impactful, the HR condition outperformed the Abstinence condition overall and at the three- and six-month follow-up measures. Days of substance use for IGT decreased by 14.3 days ($P < 0.001$) at the three-month measure which represents the end of treatment and 11.6 days ($P < 0.001$) for GDC. At the six-month follow-up, IGT decreased days of substance use by 13.2 days ($P < 0.001$) which was more than GDC decreased days of substance use of 10.2 ($P < 0.001$).

Miotto et al. (2012) did not report significant results when three treatment settings were compared for reducing opioid use measured by the Treatment Effectiveness Score (Ling et al., 1998), the proportion of negative urine drug screens, at the nine- and 20-week follow up appointments ($F = 1.96$; $P = 0.15$). The effect sizes were less than small with the HR condition ($g = .11$), Opioid Treatment Program (OTP) ($g = .04$), and primary care (PC) ($g = .06$).

Synthesis of Results

Although the selected studies used different measurements of substance use, meta-analysis produces unitless effect sizes that can be combined for an aggregate estimate of effectiveness for the targeted treatment outcome substance use (Conn et al, 2012). A single time-point of the longest follow-up from each study was selected as the final measurement

values for the targeted outcome measure of substance use to maximize the available data (Higgins & Green, 2008). Results of the meta-analysis are provided in Table 4 and Figure 1.

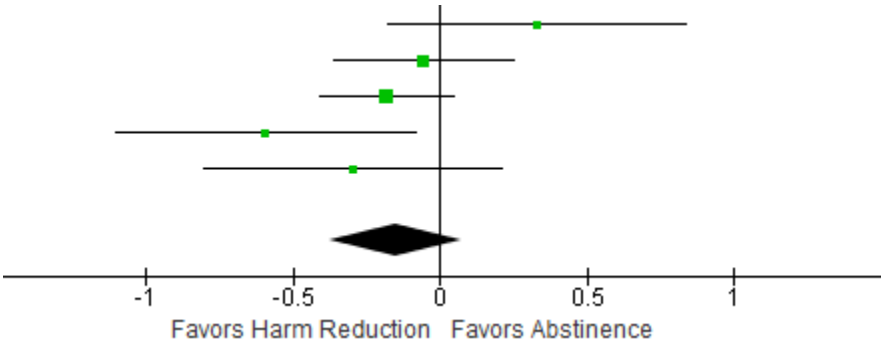
Table 4

Aggregate Standardized Mean Difference

Study	Harm Reduction			Abstinence			Weight	Std Mean Difference, IV, Random, 95% CI
	M	*SD*	*n*	*M*	*SD*	*n*		
Miotto et al. (2012)	0.33	0.37	33	0.22	0.27	28	14.0%	0.33 [-0.18, 0.84]
Nyamathi et al. (2011)	0.04	1.51	79	0.12	1.49	87	25.7%	-0.05 [-0.36, 0.25]
Rosenblum et al. (2005)	8.30	10.80	151	10.30	11.40	139	31.9%	-0.18 [-0.41, 0.05]
Weiss et al. (2007)	6.00	9.10	31	12.00	10.80	31	14.1%	-0.59 [-1.10, -0.08]
Weiss et al. (2009)	5.20	7.00	31	7.90	10.70	30	14.2%	-0.30 [-0.80, 0.21]
Total (95% CI)			**325**			**315**	**100.0%**	**-0.15 [-0.38, 0.08]**
Heterogeneity: $Tau^2 = 0.03$; $Chi^2 = 7.14$, df = 4 ($P = 0.13$); $I^2 = 44\%$								
Test for overall effect: $Z = 1.29$ ($P = 0.20$)								

Figure 1.

Forest Plot of Standardized Mean Difference, Inverse Variance, Random-Effects Model, 95% CI



Overall, there was not a statistically significant difference between outcomes of substance use by treatment philosophy ($Z = 1.29$) and ($P = 0.20$). However, there may be a clinically

significant difference due to the aggregate standardized mean difference (-0.15, CI [-0.38, 0.08]) which favors Harm Reduction over Abstinence in the reduction of substance use.

Heterogeneity, measured as $I^2 = 44\%$, may not be important or may represent a moderate level of clinical and methodological diversity within the selected studies. Common thresholds for I^2 are 0%-40% might not be important and 30%-60% may be interpreted as moderate (Higgins & Green, 2008). The *p*-value was not significant ($P = 0.13$); however, random-effects model was used to calculate the overall effect as a strategy for addressing heterogeneity.

Summary of Findings

The aim of this systematic review and meta-analysis was to provide an answer to the following primary research question: Is there a significant statistical and clinical difference in group treatment effectiveness when comparing group treatment by Harm Reduction or Abstinence treatment philosophies?

RQ1: Is there a significant difference of group treatment effectiveness between Abstinence and Harm Reduction treatment philosophies?

H1: It is hypothesized that group treatment will remain an effective intervention to treat substance use disorder between philosophies.

Ho: There are no significant difference between group comparisons.

The synthesis of results indicated that there was not a statistical difference of group treatment effectiveness between Abstinence and Harm Reduction treatment philosophies and the null hypothesis was accepted. Overall, there was not a statistically significant difference between outcomes of substance use by treatment philosophy ($Z = 1.29$) and ($P = 0.20$). However, there may be a clinically significant difference due to the aggregate standardized mean difference (-0.15, CI [-0.38, 0.08]) which favors Harm Reduction over Abstinence in the

reduction of substance use. The alternative hypothesis that group treatment will remain an effective intervention between Abstinence and Harm Reduction treatment philosophies for substance use disorders was sustained by results of individual studies. Results of individual studies indicated that in four out of the five studies, individuals randomized to the Harm Reduction condition had greater reduction in substance use (Nyamathi et al., 2011; Rosenblum et al., 2005; Weiss et al., 2007; Weiss et al., 2009) than did individuals in the Abstinence condition (Miotto et al., 2012); however, not all differences were clinically or statistically significant.

Assessment of Internal Validity of Individual Studies

Four main threats to internal validity were identified for meta-analyses and comparative effectiveness research in Chapter III. Publication bias, dissimilar studies, poor quality studies, and limitation of indirect comparisons (Berlin & Sepeda, 2012, Prendergast et al., 2002). Publication and reporting bias will be reported in the next section. The included studies were assessed for quality using the GRADE approach (Higgins & Green, 2008). Four out of the five studies were randomized controlled trials which have a quality rating of high (Nyamathi et al. (2012; Rosenblum et al., 2005; Weiss et al., 2007; Weiss et al., 2009). Miotto et al. (2012) used an underlying methodology of a randomized study without a control group due to assignments to treatment settings and was assigned a quality rating of moderate. Studies which did not provide direct comparisons were excluded.

Publication and Reporting Bias

Reporting bias is a distortion of presented information that can be due to different types of selective disclosure by the researcher (Richards, 2019). Publication bias is due to the greater likelihood of publication for scientific inquiries that resulted in significant findings. Methods used to mitigate the impact of publication bias were to identify unpublished studies and

unreported data. The researcher experienced time lag bias for one study that was not yet published at the time of data collection. The researcher also experienced insufficient data from the reported results that would enable inclusion for this study. A comprehensive search of multiple information sources for studies that met inclusion criteria was conducted to avoid reporting bias. It is important to note that to meet inclusion criteria for this study treatment philosophies of Harm Reduction and Abstinence had to be explicitly denoted which may be a source of unresolved reporting bias. Language bias was also present in this study as the targeted articles were selected for treatment outcomes within the U.S. and written in English.

Adverse and Harmful Effects

Adverse effects include withdrawal or attrition rate from individual studies, management of incomplete outcome data, and differences in blinding (Higgins & Green, 2008). Withdrawal, drop out, and attrition are common when treating substance use disorders (Palmer et al., 2009). Attrition rates were provided for each included study and attempts were made to complete missing outcome data. Differences in blinding within studies may attribute to adverse effects as Miotto et al. (2012), Nyamathi et al. (2011), and Rosenblum et al. (2005) did not use blinding whereas Weiss et al. (2007) and Weiss et al. (2009) blinded the lead psychologist from the participant's treatment conditions to reduce adverse effects. No harmful effects for group treatment were found when searched.

CHAPTER V

CONCLUSIONS

In this chapter, a summary of the evidence, generalizability, conclusions, and implications are discussed. The primary purpose of conducting a comparison of group treatment effectiveness by treatment philosophy provided information that is helpful to decision-making stakeholders. Evidence from comparative effectiveness research is important to policymakers, consumers, and providers. Results of this comparative effectiveness research study will help guide clinical practices for treating substance use disorders. An overview of previous chapters is provided.

Chapter I provided a historical background of the evolution of treatment for substance use disorders (SUDs) that developed into two current treatment philosophies Abstinence and Harm Reduction (HR). The problem statement was a need for a review of group treatment effectiveness for treating substance use disorders within the U.S., as group treatment is the dominant service provided when treating substance use disorders (SAMHSA, 2015a). The most recent review focused on global effectiveness of group treatment for SUDs (Lo Coco et al., 2019). The purpose of this study was to investigate whether group treatment is an effective treatment intervention for substance use disorders in the U.S. by comparing group treatment philosophies of Abstinence and Harm Reduction by reviewing and appraising the current literature, as there was no literature to date of comparative effectiveness research on group treatment interventions by treatment philosophy identified in the literature.

The rationale of examining the impact of group treatment on substance use will provide treatment providers with applicable knowledge to improve treatment programs and protocols and may help to determine best practices and policies for treating substance use disorders such as

employing effective, evidence-based interventions. The significance of the contribution of this study is to provide up-to-date information on the effectiveness of treatment philosophies that will ultimately provide a basis to determine a more unified model of treating substance use disorder, as currently there is no unified theoretical model that comprehensively explains all aspects of substance use (Skinner & Aubin, 2010).

Delimitations of this study included a departure from standard practice of excluding less than rigorous studies, such as randomized controlled trials, due to the real-world nature of this inquiry. Direct comparisons of Abstinence and Harm Reduction were deemed difficult to obtain as there are no current standardized measures of treatment effect for substance use disorders. Outcome variables, heterogeneity, and risk bias were determined to be risk factors to this study and efforts were determined a priori to mitigate the impact of the delimitations. Limitations of this study were a possible low number of studies that could meet inclusion criteria given the practical limitations of clinical settings and ethical concerns for comparison and control group assignments. Applied research is also limited by moderating, mediating, and confounding variables such as treatment fidelity, therapist adherence to treatment philosophy, attrition, and open enrollment groups.

This study is based on the conceptual framework of prior theory and research, utilizing the paradigm of post-positivism, in that the purpose of this study is to arrive at a conclusion of effectiveness by comparison that will guide clinical practice and policies for SUD treatment. The primary assumption is that this study will employ rigorous measures to minimize erroneous conclusions, as the quality of the systematic review is dependent on its methodology. The secondary assumption is that systematic reviews provide better evidence than individual studies in comparative effectiveness research (Berlin & Cepeda, 2012).

Chapter II presented a literature review of previous syntheses to establish a need for a for a review of group treatment effectiveness for substance use disorders (SUDs) by treatment philosophy within the U.S. Literature reviewed, appraised, and synthesized includes previous systematic reviews with meta-analyses, narrative, or qualitative summaries. Six previous syntheses were identified in the literature that provide further evidence regarding group treatment effectiveness for substance use disorders (Engle & MacGowan, 2009; Lo Coco et al., 2019; Orchowski & Johnson, 2012; Sobell & Sobell, 2011; Sokol et al., 2018, Weiss et al., 2004). In summary, based on the available literature, it appears that research on group treatment is scarce (Orchowski & Johnson, 2012; Sokol et al., 2018; Weiss, 2004). Only one previous synthesis provided a comparison that was related to the inquiry of this study (Weiss et al., 2004). And the most recent review by Lo Coco and colleagues (2019) provided some evidence that group treatment was effective for abstinence outcomes on a global scale; however, results for frequency of substance use and symptoms of substance use disorders were not significant. In summary, a current a review of group treatment effectiveness for substance use disorders (SUDs) by treatment philosophy within the U.S. is needed.

Chapter III defined the methodology of this study. All methods were determined *a priori*. Inclusion criteria were published scholarly, peer-reviewed journal articles published between 2004 and 2020, conducted in the U.S., and written in English. Studies must include quantitative methodology with group treatment as the independent variable and outcome measures of SUDs as the dependent variable(s). Studies were excluded that did not provide direct comparisons of Abstinence and Harm Reduction. Studies were also excluded that did not report sufficient data such as means and standard deviations. Information sources, study selection, and data collection were also reviewed in this chapter. Five information sources were

used to conduct the systematic review and articles that were unavailable were further searched through Google Scholar and/or requested through Interlibrary Loan. Data were collected from March 2019 to May 2020 by the doctoral candidate on a single occasion which may weaken the results of the current analyses as it is a considered a less robust data collection strategy. Methods for assessing risk to internal validity such as publication bias, dissimilar studies, poor quality studies, and limitation of indirect comparisons were discussed.

Summary measures such as methods of synthesis and publication bias and selective reporting were reviewed. For results of individual studies, data was converted to standardized mean differences (*Cohen's d*), as needed, then transformed to bias-corrected standardized mean differences (*Hedges'* g) to create a common index (Borenstein et al., 2009). The formula for calculating Hedge's (*g*) is $(M_1 - M_2)/(SD^*_{pooled})$. Random-effects model meta-analyses was used due to assumed heterogeneity within and between studies (Bown & Sutton, 2010; Conn et al., 2012). Meta-analysis was used to compute an aggregate standardized mean difference for substance use to compare the two treatment philosophies. All calculations were conducted using RevMan 5.4. Methods used to mitigate the impact of publication bias were to identify unpublished studies and unreported data. Publication bias and selecting reporting for individual studies were further discussed in Chapter IV.

Chapter IV presented the results of this systematic review and meta-analysis. Study selection included a review of over 100 articles identified in the initial review of journal article titles and abstracts and were further reviewed for inclusion and exclusion criteria. A total of 5 studies were included and study characteristics were described (Miotto et al., 2012; Nyamathi et al., 2011; Rosenblum et al., 2005; Weiss et al., 2007; Weiss et al., 2009). Results of individual studies indicated that in four out of the five studies, individuals randomized to the Harm

Reduction condition had greater reduction in substance use (Nyamathi et al., 2011; Rosenblum et al., 2005; Weiss et al., 2007; Weiss et al., 2009) than did individuals in the Abstinence condition (Miotto et al., 2012); however, not all differences were clinically or statistically significant. A synthesis of results indicated there was not a statistically significant difference between outcomes of substance use by treatment philosophy ($Z = 1.29$) and ($P = 0.20$). However, there may be a clinically significant difference due to the aggregate standardized mean difference (-0.15, CI [-0.38, 0.08]) which favors Harm Reduction over Abstinence in the reduction of substance use. A summary of findings applied the results to answer the primary research question: Is there a significant statistical and clinical difference in group treatment effectiveness when comparing group treatment by Harm Reduction or Abstinence treatment philosophies? Where the null hypothesis of no significant difference between group comparisons was accepted. The alternative hypothesis that group treatment will remain an effective intervention to treat substance use disorder between philosophies was sustained.

Assessment of internal validity of individual studies included the four main threats to internal validity that were previously identified for meta-analyses and comparative effectiveness research in Chapter III. Attempts were made to mitigate these threats such as assessing for quality, risk of bias, heterogeneity, excluding indirect comparisons, and utilizing resources to reduce publication and reporting bias. The included studies were assessed for quality using the GRADE approach (Higgins & Green, 2008). Four out of the five studies were randomized controlled trials which have a quality rating of high (Nyamathi et al. (2012; Rosenblum et al., 2005; Weiss et al., 2007; Weiss et al., 2009). Miotto et al. (2012) used an underlying methodology of a randomized study without a control group due to assignments to treatment settings and was assigned a quality rating of moderate. A low risk of bias was assigned to all

included studies with guidance from the Cochrane Collaboration Risk of Bias 2 Tool (Higgins et al., 2011). Studies which did not provide direct comparisons were excluded. Resources such as Google Scholar and Interlibrary Loan were used to help identify unpublished studies and unreported data. The researcher experienced time lag bias and insufficient data that may have altered inclusion of other related studies; however, a comprehensive search of multiple information sources for studies that met inclusion criteria was conducted to avoid reporting bias. Language bias was also present in this study as the targeted articles were selected for treatment outcomes within the U.S. and written in English due to the nature of this inquiry. It is important to note that to meet inclusion criteria for this study treatment philosophies of Harm Reduction and Abstinence had to be explicitly denoted which may be a source of unresolved reporting bias.

Adverse effects include withdrawal or attrition rate from individual studies, management of incomplete outcome data, and differences in blinding (Higgins & Green, 2008). Withdrawal, drop out, and attrition are common when treating substance use disorders (Palmer et al., 2009). Attrition rates were provided for each included study and attempts were made to complete missing outcome data within the study. Differences in blinding within studies may attribute to adverse effects as Miotto et al. (2012), Nyamathi et al. (2011), and Rosenblum et al. (2005) did not use blinding whereas Weiss et al. (2007) and Weiss et al. (2009) blinded the lead psychologist from the participant's treatment conditions to reduce adverse effects. No harmful effects for group treatment were found when searched.

Summary of the Evidence

The primary research question was answered using a random-effects meta-analysis to calculate an overall effect size comparing treatment philosophies Abstinence and Harm Reduction. The primary research question, Is group treatment for substance use disorders

effective? resulted in an aggregate standardized mean difference (-0.15, CI [-0.38, 0.08]) which favored Harm Reduction over Abstinence in the reduction of substance use. However, there was not a statistically significant difference between outcomes of substance use by treatment philosophy ($Z = 1.29$) and ($P = 0.20$). Although, there may be a clinically significant difference between the two treatment philosophies as in four out of the five included studies the Harm Reduction condition outperformed the Abstinence condition. These mixed results are consistent with findings from the previous syntheses in Chapter II (Engle & MacGowan, 2009; Lo Coco et al, 2019; Orchowski & Johnson, 2012; Sobell & Sobell, 2011; Sokol et al., 2018; Weiss et al. 2004).

Main findings of this study including results of individual studies and synthesis of results, provided an overall quality of the evidence. Strengths and limitations of these findings include inconsistency, imprecision, risk of bias, publication bias, and selective outcome reporting. An alternative explanation for observed results may be due to the ability to use change scores instead of a single time-point of the longest follow-up from each study that was selected as the final measurement values for the targeted outcome measure of substance use to maximize the available data (Higgins & Green, 2008).

Generalizability

The generalizability, or external validity, of conclusions for systematic reviews is limited (Avellar et al., 2016). Systematic reviews are designed to investigate effectiveness of treatment interventions from previously conducted scientific inquiries on a given subject. Implications for related populations, intervention variations, and dependent (outcome) variables outside of the included studies must often be extrapolated from the findings of a systematic review and suggested as areas for future study. Group treatment for substance use disorder may vary greatly

depending upon the treatment setting and the therapist adherence to a treatment philosophy. Group treatment for substance use disorder may also vary greatly due to individual needs present within specific populations, i.e. by substance use disorder and/or co-occurring disorder. The generalizability of the present study is also limited.

A low number of studies that met the criteria of this study impacts the generalizability of the results. Group treatment effectiveness may not be investigated often due to the difficulty of rigorous design in the delivery of services and measuring treatment outcomes. This is partially due to practical limitations of clinical settings and ethical concerns when considering control or comparison groups. Attrition and open enrollment groups wherein attendance varies from session to session and structured delivery of treatment which builds over time is not possible further compound the ability to establish strong research support (Wendt & Gone, 2017). Many moderating, mediating, and confounding variables exist in this type of applied research. Some examples are treatment fidelity, such as therapist adherence to treatment philosophy and counselor competence as a group leader (Collyer et al., 2019), therapeutic alliance, and group cohesion (Orchowski & Johnson, 2012).

Conclusions

The aim of this systematic review and meta-analysis was to provide an answer to the following primary research question: Is there a significant statistical and clinical difference in group treatment effectiveness when comparing group treatment by Harm Reduction or Abstinence treatment philosophies?

RQ1: Is there a significant difference of group treatment effectiveness between Abstinence and Harm Reduction treatment philosophies?

H1: It is hypothesized that group treatment will remain an effective intervention to treat substance use disorder between philosophies.

Ho: There are no significant difference between group comparisons.

While there were no significant statistical differences of group treatment effectiveness between Abstinence and Harm Reduction treatment philosophies there may be a clinical significance as Harm Reduction was slightly favored as treatment philosophy over Abstinence for the included studies on the outcome of substance use. Only one previous synthesis provided a comparison that was related to the inquiry of this study (Weiss et al., 2004). Pomerleau and colleagues (1978) compared behavioral group therapy with the treatment goal of reduced alcohol use to "traditional" treatment with abstinence as the treatment goal. Similar to this study, individuals in the behavioral group therapy demonstrated greater reduction in alcohol use and greater retention in treatment than did individuals in the "traditional" treatment group. Future research focused on clearly identified group treatment philosophy is important to provide up-to-date and a more accurate reflection on the effectiveness for treating substance use disorders.

Implications

In the U.S., individuals with high severity of substance use disorders and those involved in the criminal justice system are most likely to receive treatment (Johnson et al., 2020). Individuals with substance use disorders often find themselves in court-ordered treatment due to intoxication, possession of illicit drugs, violent crimes, or drug-seeking property crimes. The Abstinence treatment philosophy is evident within the U.S. Criminal Justice System whereby substance use is considered a public health problem (Koppel, 2016). Treatment providers that adhere to the Abstinence treatment philosophy often oppose Harm Reduction treatments such as syringe exchange programs, safe injection sites, naloxone medication distribution for opioid

overdose, and medication-assisted treatment (Oyemade, 2015). Generally, individuals receiving medication-assisted treatment for substance use disorders are discouraged from attending self-help Abstinence programs such as Alcoholics Anonymous and Narcotics Anonymous by the people in those programs. The 12-Step philosophy of Abstinence indicates that those receiving medication-assisted treatment are not abstinent from drug use although they are in recovery. Because therapist adherence to treatment philosophy ultimately impacts treatment outcomes for individuals with substance use disorders, further research dedicated to exploring direct comparisons of Abstinence vs. Harm Reduction would provide evidence that is critical to public policy and treatment programming.

Theoretical underpinnings of third wave therapies focus on change and acceptance (Narayanan & Naaz, 2018). Harm Reduction is described by Marlatt (1998) as "compassionate pragmatism," where treatment providers accept that individuals use drugs in harmful ways and strive to provide quality, evidence-based care to a marginalized population. This is a paradigm-shift that contrasts with traditional treatment providers who view individuals with SUDs as suffering from the disease of terminal uniqueness and attempt to have the person conform to Abstinence treatment philosophy. Harm Reduction treatment providers appreciate the uniqueness of each individual, their journey, and their meaning and purpose (Tatarsky & Marlatt, 2010). The focus of treatment is broadened from the substance use itself to the person as a whole, where substance use and misuse is but one clinical aspect (Rothschild, 2010). Treatment begins with the client's needs and personal goals which are stated by the client and is not coerced or influenced by the intentions of the treatment program or the treatment providers (Marlatt, 1996).

The purpose of comparative effectiveness research is to generate and synthesize data to determine the best intervention for the general population (Berlin & Cepeda, 2012; Neely et al., 2013). The term 'effectiveness' describes the helpfulness of an intervention to diverse people in real world clinical settings (Fedson, 1998). Investigating effectiveness of interventions such as group treatment requires published data that can be aggregated across studies to reveal a comprehensive measure of its impact on treatment outcomes (Henly, 2016; Higgins, et al. 2011). Comparing effectiveness of group treatment for substance use disorders by treatment philosophy will help counselors provide evidence-based treatment to meet individual needs clarify both the most effective intervention for a specific disorder and for the general population. Future research focused on the effectiveness of group treatment on specific substance use and co-occurring disorders and patient characteristics may provide information beyond the scope of this review that identifies treatment needs to unique populations such as those mandated to treatment.

Translation of effectiveness evidence into the field of substance use treatment is critical at this time because of the high prevalence of SUDs in the U.S., the devastation experienced by individuals and families due to the opioid crisis, and the rising costs of healthcare. Dissemination and implementation of effectiveness research is critical as currently, less than half of U.S. treatment programs offer evidence-based practices (Padwa & Kaplan, 2018) and presently there are no federal guidelines or mandates for community-based treatment for substance use disorders to employ evidence-based practices (Rieckmann et al., 2011). However, there are recent efforts to improve implementation of evidence-based practices (NIDA, 2015). Funding, regulations, and continued education are provided by some States to encourage the implementation of evidence-based practices (Robertson et al., 2015).

The use of interventions that are not evidence-based conflicts with the American Counseling Association's Code of Ethics (2014) that requires treatment have an empirical or scientific foundation where the choice of psychosocial intervention is based upon past research that supports the effectiveness of the treatment modality. It appears that now is a time in substance use treatment history where leaders in the field such as educators, providers, and supervisors are responsible for the adoption of effective treatment and evidence-based practices as an ethical imperative to provide quality care for those receiving services. The aim of this study was to provide evidence of treatment effectiveness that will ultimately improve treatment outcomes for substance use disorders, provide guidance for broader implementation of evidence-based treatment approaches within the U.S., and to provide current information for evidence-based decision-making. Continued investigation of treatment effectiveness will provide the guidance necessary for improving treatment outcomes for individuals with substance use disorders and will provide the information needed to make decisions that impact American families and lives.

REFERENCES

Akiyama, M. J., Norton, B. L., Arnsten, J. H., Agyemang, L., Heo, M., & Litman, A. H. (2019). Intensive models of hepatitis C care for people who inject drugs receiving opioid agonist therapy: A randomized controlled trial. *Annals of Internal Medicine*, *170*, 594-603. doi:10.7326/M18-1715

Alessi, S. M., Hanson, T., Wieners, M., & Petry, N. M. (2007). Low-cost contingency management in community clinics: Delivering incentives partially in group therapy. *Experimental and Clinical Psychopharmacology*, *15*, 293-300. doi:10.1037/1064-1297-15.3.293

Allsop, S., Saunders, B., Phillips, M., & Carr, A. (1997). A trial of relapse prevention with severely dependent male problem drinkers. *Addiction*, *92*, 61-74.

Amaro, H., Dai, J., Arévalo, S., Acevedo, A., Matsumoto, A., Nieves, R., & Prado, G. (2007). Effects of integrated trauma treatment on outcomes in a racially/ ethnically diverse sample of women in urban community-based substance abuse treatment. *Journal of Urban Health*, *84*, 508-522. doi:10.1007/s11524-007-9160-z

Amaro, H. & Black, D. S. (2017). Moment-by-moment in women's recovery: Randomized controlled trial protocol to test the efficacy of a mindfulness-based intervention on treatment retention and relapse prevention among women in a residential treatment for substance use disorder. *Contemporary Clinical Trials*, *62*, 146-152. doi:10.1016/j.cct.2017.09.004

Amato, L., Minozzi, S., Davoli, M., Vecchi, S. (2011). Psychosocial and pharmacological treatments versus pharmacological treatments for opioid detoxification. *Cochrane Database of Systematic Reviews 2011, Issue 9. Art. No.: CD005031*.

doi: 10.1002/14651858.CD005031.pub4.

American Counseling Association (2014). *ACA Code of Ethics*. Author.

American Psychiatric Association (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Author.

American Society of Addiction Medicine (ASAM) (2018). *Public policy statement on the regulation of office-based opioid treatment.* Author. Retrieved from: https://www.asam.org/docs/default-source/public-policy-statements/statement-on-regulation-of-obot.pdf?sfvrsn=df8540c2_2

Annis, H. M. (1979). Group treatment of incarcerated offenders with alcohol and drug problems: A controlled evaluation. *Canadian Journal of Criminology and Criminal Justice*, *21*, 3-15.

Avants, S. K., Margolin, A., Usubiaga, M. H., & Doebrick, C. (2004). Targeting HIV-related outcomes with intravenous drug users maintained on methadone: A randomized clinical trial of a harm reduction group therapy. *Journal of Substance Abuse Treatment*, *26*, 67-78. doi:10.1016/S0740-5472(03)00159-4

Avellar, S. A., Thomas, J., Kleinman, R., Sama-Miller, E., Woodruff, S. E., Coughlin, R., & Westbrook, T. R. (2017). External validity: The next step for systematic reviews? *Evaluation Review*, *41*, 283-325. doi:10.1177/0198341X16665199

Balkin, R. S. & Sheperis, C. J. (2011). Evaluating and reporting statistical power in counseling research. *Journal of Counseling & Development*, *89*, 268-272.

Bangert-Drowns, R. L. (1986). Review of developments in meta-analytic method. *Psychological Bulletin, 99*, 388-399. doi:10.1037/0033-2909.99.3.388

Battjes, R. J., Gordon, M. S., O'Grady, K. E., Kinlock, T. W., Katz, E. C., & Sears, E. A. (2004). Evaluation of a group-based substance abuse treatment program for adolescents. *Journal of Substance Abuse Treatment, 27,* 123-134. doi:10.1016/j.jsat.2004.06.002

Bellack, A. S., Bennett, M. E., Gearon, J. S., Brown, C. H., & Yang, Y. (2006). A randomized clinical trial of a new behavioral treatment for drug abuse in people with severe and persistent mental illness. *Archives of General Psychiatry, 63,* 426-432. doi:10.1001/archpsyc.63.4.426

Berger, R., Pulido, C., Lacro, J., Groban, S., & Robinson, S. (2014). Group medication management for buprenorphine/ naloxone in opioid-dependent veterans. *Journal of Addiction Medicine, 8,* 415-420. doi:10.1097/ADM.0000000000000071

Bergman, B. G., Greene, M. C., Slaymaker, V., Hoeppner, B. B., & Kelly, J. F. (2014). Young adults with co-occurring disorders: Substance use disorder treatment response and outcomes. *Journal of Substance Abuse Treatment, 46,* 420-428. doi:10.1016/j.jsat.2013.11.005

Berlin, J. A. & Cepeda, M. S. (2012). Some methodological points to consider when performing systematic reviews in comparative effectiveness research. *Clinical Trials, 9,* 27-34. doi: 10.1177/1740774511427062

Bickel, W. K., Koffarnus, M. N., Moody, L. & Wilson, A.G. (2014). The behavioral- and neuro-economic process of temporal discounting: A candidate behavioral marker of addiction. *Neuropharmacology, 76,* 518-527. doi: 10.1016/j.neuropharm.2013.06.013

Boden, M. T., Kimerling, R., Jacobs-Lentz, J., Bowman, D., Weaver, C., Carney, D., Walser, R., & Trafton, J. A. (2011). Seeking Safety treatment for male veterans with a substance use

disorder and post-traumatic stress disorder symptomatology. *Addiction, 107,* 578-586 doi:10.1111/j.1360-0443.2011.03658

Bougard, K. G., Laupola, T. M. T., Parker-Doas, J., Creekmore, J., & Stangland, S. (2016). Turning the tides: Coping with trauma and addiction through residential adolescent group therapy. *Journal of Child and Adolescent Psychiatric Nursing, 29,* 196-206. doi:10.1111/jcap.12164

Bouis, S., Reif, S., Whetten, K., Scovil, J., Murray, A., & Swartz, M. (2007). An integrated, multidimensional treatment model for individuals living with HIV, mental illness, and substance abuse. *Health & Social Work, 32,* 268-278.

Bowen, S., Chawla, N., Collins, S. E., Witkiewitz, K., Hsu, S., Grow, J., Clifasefi, S., Garner, M., Douglass, A., Larimer, M. E., Marlatt, A. (2009). Mindfulness-based relapse prevention for substance use disorders: A pilot efficacy trial. *Substance Abuse, 30,* 295-305. doi:10.1080/08897070903250084

Bowen, S., Witkiewitz, K., Clifasefi, S. L., Grow, J., Chawla, N., Hsu, S. H., & Carroll, H. A. (2014). Relative efficacy of mindfulness-based relapse prevention, standard relapse prevention, and treatment as usual for substance use disorders. *JAMA Psychiatry, 71,* 547-556. doi:10.1001/jamapsychiatry.2013.4546

Bown, M. J. & Sutton, A. J. (2010). Quality control in systematic reviews and meta-analyses. *European Journal of Vascular and Endovascular Surgery, 40,* 669-677. doi:10.1016/j.ejvs.2010.07.011

Brown, N. W. (2009). *Becoming a group leader*. Pearson.

Brown, S. A., Glasner-Edwards, S. V., Tate, S. R., McQuaid, J. R., Chalekian, J., & Granholm, E. (2006). Integrated cognitive behavioral therapy versus twelve-step facilitation therapy

for substance-dependent adults with depressive disorders. *Journal of Psychoactive Drugs, 38*, 449‑460. doi:10.1080/02791072.2006.10400584.

Burlingame, G. M., Strauss, B., & Joyce, A. S. (2013). Change mechanisms and effectiveness of small group treatments. In M. J. Lambert (Ed.), *Bergin and Garfield's handbook of psychotherapy and behavior change* (6th ed., pp. 640-690).

Burlingame, G. M. & Jensen, J. L. (2017). Small group process and outcome research highlights: A 25-year perspective. *International Journal of Group Psychotherapy, 67*:sup1, S194-S218. doi:10.1080/00207284.2016.1218287

Burrow- Sánchez, J. J. & Hops, H. (2018). A randomized trial of culturally accommodated versus standard group treatment for Latina/o adolescents with substance use disorders: Posttreatment through 12-month outcomes. *Cultural Diversity and Ethnic Minority Psychology, 25*, 311-322. doi:10.1037/cdp0000249

Burtscheidt, W., Schwarz, R., Redner, C., & Gaebel, W. (1999). Behavioral therapeutic methods in ambulatory treatment of alcoholism: Early results of an experimental study. *Fortschritte der Neurologi-psychiatrie, 67*, 274-280. doi:10.1055/s-2007-994976

Burtscheidt, W., Wölwer, W., Schwarz, R., Strauss, W., Löll, A., Lüthcke, H., Redner, C., & Gaebel, W. (2001). Out-patient behavior therapy in alcoholism: Relapse rates after 6 months. *Acta Psychiatrica Scandinavica, 103*, 24-29.

Calysn, D. A., Crits-Christoph, P., Hatch-Mailette, M. A., Doyle, S. R., Song, Y. S., Coyer, S., & Pelta, S. (2010). Reducing sex under the influence of drugs or alcohol for patients in substance abuse treatment. *Addiction, 105*, 100-108. doi:10.1111/j.1360-0443.2009.02812.x

Centers for Disease Control and Prevention (CDC) (2015, June 19). Opioid overdose prevention programs providing naloxone to laypersons – United States, 2014. *Morbidity and Mortality Weekly Report (MMWR)*. Retrieved from: https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6423a2.htm

Chambless, D. L. & Hollon, S. D. (1998). Defining empirically supported therapies. *Journal of Consulting and Clinical Psychology, 66*, 7-18.

Chase, H. W., Eickhoff, S. B., Laird, A. R., & Hogarth, L. (2011). The neural basis of drug stimulus processessing and craving: An activation likelihood estimation meta-analysis. *Biologicial Psychiatry, 70*, 785-793. doi: 10.1016/j.biopsych.2011.05.025

Cleary, M., Hunt, G., Matheson, S., Siegfried, N., Walter, G. (2008). Psychosocial interventions for people with both severe mental illness and substance misuse. *Cochrane Database of Systematic Reviews 2008, Issue 1*. doi: 10.1002/14561858.CD001088.pub2

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Rutledge.

Collins, S. E., Clifasefi, S. L., Dana, E. A., Andrasik, M. P., Stahl, N., Kirouac, M., Welbaum, C., King, M., & Malone, D. K. (2012). Where harm reduction meets housing first: Exploring alcohol's role in a project-based housing first setting. *International Journal of Drug Policy, 23*, 111-119. doi:10.1016/j.drugo.2011.07.010

Collins, S. E., Grazioli, V. S., Torres, N. I., Taylor, E. M., Jones, c. B., Hoffman, G. E., Haelsig, L., Zhu, M. D., Hatsukami, A. S., Koker, M. J., Herndon, P., Greenleaf, S. M., & Dean, P. E. (2015). Qualitatively and quantitatively evaluating harm-reduction goal setting among chronically homeless individuals with alcohol dependence. *Addictive Behaviors, 45*, 184-190. doi:10.1016/j.addbeh.2015.02.001

Collins, S. E., Clifasefi, S. L., Nelson, L. A., Stanton, J., Goldstein, S. C., Taylor, E. M., Hoffmann, G., King, V. L., Hatsukami, A. S., Cunningham, Z. L., Taylor, E., Mayberry, N., Malone, D. K., & Jackson, T. R. (2019). Randomized controlled trial of harm reduction treatment for alcohol (HaRT-A) for people experiencing homelessness and alcohol use disorder. *International Journal of Drug Policy*, *67*, 24-39. doi:10.1016/j.drugpo.2019.01.002

Collyer, H., Eisler, I., & Woolgar, M. (2019). Systematic literature review and meta-analysis of the relationship between adherence, competence, and outcome in psychotherapy for children and adolescents. *European Child & Adolescent Psychiatry*, 1.

Conn, V. S., Ruppar, T. M., Phillips, L. J., & Chase, J. D. (2012). Using meta-analyses for comparative effectiveness research. *Nursing Outlook*, *60*, 182-190. doi:10.1016/j.outlook.2012.04.004

Conners, G. J. & Walitzer, K. S. (2001). Reducing alcohol consumption among heavily drinking women: A randomized clinical trial. *Journal of Consulting and Clinical Psychology*, *69*, 447-456.

Cook, C. C. (1988). The Minnesota model in the management of drug and alcohol dependency: Miracle, method, or myth? (Part I: The philosophy of the programme). *British Journal of Addiction*, *83*, 625-634.

Cook, J. M., Walser, R. D., Kane, V., Ruzek, J. I., & Woody, G. (2006). Dissemination and feasibility of a cognitive-behavioral treatment for substance use disorders and posttraumatic stress disorder in the Veterans Administration. *Journal of Psychoactive Drugs*, *38*, 89-92.

Cooney, N. L., Kadden, R. M., Litt, M. D., & Getter, H. (1991). Matching alcoholics to coping skills or interactional therapies: Two-year follow-up results. *Journal of Consulting and Clinical Psychology*, *59*, 598-601.

Cooper, D. E. (1987). The role of group psychotherapy in the treatment of substance abusers. *American Journal of Psychotherapy*, *41*, 55–67.

Cooper, H. (2018). *Reporting quantitative research in psychology: How to meet APA Journal Article Reporting Standards* (2nd Ed.). American Psychological Association.

Coviello, D. M., Alterman, A. I., Rutherford, M. L., Cacciola, J. S., McKay, J. R., & Zanis, D. A. (2001). The effectiveness of two intensities of psychosocial treatment for cocaine dependence. *Drug and Alcohol Dependence*, *62*, 145-154.

Covington, S. S., Burke, C., Keaton, S., & Norcott, C. (2008). Evaluation of a trauma-informed and gender-responsive intervention for women in drug treatment. *Journal of Psychoactive Drugs, SARC Supplement 5*, 387-398.

Crits-Christoph, P., Siqueland, L., Blaine, J., Frank, A., Luborsky, L., Onken, L. S., Muenz, L. R., Thase, M. E., Weiss, R. D., Gastfriend, D. R., Woody, G. E., Barber, J. P., Butler, S. F., Daley, D., Salloum, I., Bishop, S., Najavits, L. M., Lis, J., Mercer, D., … Beck, A. T. (1999). Psychosocial treatments for cocaine dependence: National Institute on Drug Abuse Collaborative Cocaine Treatment Study. *Archives of General Psychiatry*, *56*, 493-502.

Crits-Christoph, P., Johnson, J. E., Connolly Gibbons, M. B., & Gallop, R. (2013). Process predictors of the outcome of group drug counseling. *Journal of Consulting and Clinical Psychology*, *81*, 23-34. doi: 10.1037/a0030101

D'Amico, E. J., Hunter, S. B., Miles, J. N. V., Ewing, B. A., & Osilla, K. C. (2013). A randomized controlled trial of a group motivational interviewing intervention for adolescents with a first time alcohol or drug offense. *Journal of Substance Abuse Treatment, 45,* 400-408. doi:10.1016/j.jsat.2013.06.005

D'Amico, E. J., Houck, J. M., Hunter, S. B., Miles, J. N. V., Osilla, K. C., & Ewing, B. A. (2015). Group motivational interviewing for adolescents: Change talk and alcohol and marijuana outcomes. *Journal of Consulting and Clinical Psychology, 83,* 68-80. doi:10.1037/a0038155

D'Amico, E. J., Houck, J. M., Tucker, J. S., Ewing, B. A., & Pederson, E. R. (2017). Group motivational interviewing for homeless young adults: Associations of change talk with substance use and sexual behavior. *Psychology of Addictive Behaviors, 31,* 688-698. doi:10.1037/adb0000288

Daughters, S. B., Magidson, J. F., Seitz-Brown, C. J., Chen, Y., & Baker, S. (2017). The effect of a behavioral activation treatment for substance use on post-treatment abstinence: A randomized controlled trial. *Addiction, 113,* 535-544. doi:10.1111/add.14049

Dennis, M., Godley, S. H., Diamond, G., Tims, F. M., Babor, T., Donaldson, J., Liddle, H., Titus, J. C., Kaminer, Y., Webb, C., Hamilton, N., & Funk, R. (2004). The cannabis youth treatment (CYT) study: Main findings from two randomized trials. *Journal of Substance Abuse Treatment, 27,* 197-213. doi:10.1016/j.jsat.2003.09.005

Desai, R. A., Harpaz-Rotem, I., Najavits, L. M., & Rosenheck, R. A. (2008). Impact of Seeking Safety program on clinical outcomes among homeless female veterans with psychiatric disorders. *Psychiatric Services, 59,* 996-1003.

Doorley, S. L., Ho, C. J., Echeverria, E., Preston, C., Ngo, H., Kamal, A., & Cunningham, C. O. (2017). Buprenorphine shared medical appointments for the treatment of opioid dependence in a homeless clinic. *Substance Abuse, 38,* 26-30. doi:10.1080/08897077.2016.1264535

Drake, R. E., O'Neal, E. L., & Wallach, M. A. (2008). A systematic review of psychosocial research on psychosocial interventions for people with co-occurring severe mental and substance use disorders. *Journal of Substance Abuse Treatment 34,* 123-138. doi:10.1016/j.jsat.2007.01.011

Duckert, F., Amundsen, A., & Johnsen, J. (1992). What happens to drinking after therapeutic intervention? *British Journal of Addiction, 87,* 1457-1467.

Dugosh, K., Abraham, A., Seymour, B., McLoyd, K., Chalk, M. & Festinger, D. (2016). A systematic review on the use of psychosocial interventions in conjunction with medications for the treatment of opioid addiction. *Journal of Addiction Medicine, 10,* 93-103. doi: 10.1097/ADM0000000000000193

Duka, T. Crombag, H. S., & Stephens, D. N. (2011). Experimental medicine in drug addiction: Towards behavioral, cognitive, and neurobiological biomarkers. *Journal of Psychopharmacology, 25,* 1235-1255. doi: 10.1177/0269881110388324

DuPont, R. L., Compton, W. M., & McLellan, A. T. (2015). Five-year recovery: A new standard for assessing effectiveness of substance use disorder treatment. *Journal of Substance Abuse Treatment, 58,* 1-5. doi: 10.1016/j.sat.2015.06.24

Easton, C. J., Mandel, D. L., Hunkele, K. A., Nich, C., Rounsaville, B. J., & Carroll, K. M. (2007). A cognitive behavioral therapy for alcohol-dependent domestic violence

offenders: An integrated substance abuse-domestic violence treatment approach (SADV). *The American Journal on Addictions, 16,* 24-31. doi:10.1080/10550490601077809

Empson, S., Cuca, Y. P., Cocohoba, J., Dawson-Rose, C., Davis, K., & Machtinger, E. L. (2017). Seeking Safety group therapy for co-occurring substance use disorder and PTSD among transgender women living with HIV: A pilot study. *Journal of Psychoactive Drugs, 49,* 344-351. doi:10.1080/02791072.2017.1320733

Engle, B. & MacGowan, M. J. (2009). A critical review of adolescent substance abuse group treatments. *Journal of Evidence-Based Social Work, 6,* 217-243. doi:10.1080/15433710802686971

Epstein, E. E., McCrady, B. S., Hallgren, K. A., Gaba, A., Cook, S., Jensen, N., Hildebrandt, T., Holzhauer, C. G., & Litt, M. D. (2018). Individual versus group female-specific cognitive behavior therapy for alcohol use disorder. *Journal of Substance Abuse Treatment, 88,* 27-43. doi:10.1016/j.jsat.2018.02.003

Eriksen, L., Bjornstad, S., & Gotestam, K. G. (1986). Social skills training in groups for alcoholics: One-year outcome of groups and individuals. *Addictive Behaviors, 11,* 309-329.

Eysenck, H. J. (1978). An exercise in mega-silliness. *American Psychologist, 33,* 517.

Fallot, R. D., McHugo, G. J., Harris, M., & Xie, H. (2011). The trauma recovery and empowerment model: A quasi-experimental effectiveness study. *Journal of Dual Diagnosis, 7,* 74-89. doi:10.1080/15504263.2011.566056

Fareed, A., Stout, S., Casarella, J., Vayalapalli, S., Cox, J., & Drexler, K. (2011). Illicit opioid intoxication: Diagnosis and treatment. *Substance Abuse: Research and Treatment*, *5*, 17-25. doi:10.4137/SART.S7090

Feaster, D. J., Burns, M. J., Brincks, A. M., Prado, G., Mitrani, V. B., Mauer, M. H., & Szapocznik, J. (2010). Structural ecosystems therapy for HIV+ African-American women and drug abuse relapse. *Family Process*, *49*, 204-219.

Fedson, D. S. (1998). Measuring protection: efficacy versus effectiveness. *Developments in Biological Standardization*, *95*, 195-201.

Fisher, G. L. & Harrison, T. C. (2013). Substance Abuse: Information for school counselors, social workers, therapists, and counselors (5th ed.). Pearson.

Foster, K. T., Ehrnstrom, C., Chermack, S., & Hosanagar, A. (2016). Pain moderates changes in psychological flexibility but not substance use symptoms during substance use disorder treatment. *Psychiatry Research*, *245*, 51-57. doi:10.1016/j.psychres.2016.08.014

Frisman, L., Ford, J., Lin, H., Mallon, S., & Chang, R. (2008). Outcomes of trauma treatment using the TARGET model. *Journal of Groups in Addiction & Recovery*, *3*, 285-303. doi:10.1080/15560350802424910

Garland, E. L., Gaylord, S. A., Boettiger, C. A., & Howard, M. O. (2010). Mindfulness training modifies cognitive, affective, and physiological mechanisms implicated in alcohol dependence: Results of a randomized controlled pilot trial. *Journal of Psychoactive Drugs*, *42*, 177‑192. doi:10.1080/02791072.2010.10400690.

Garland, E. L., Roberts-Lewis, A., Tronnier, C. D., Graves, R., & Kelley, K. (2016). Mindfulness-oriented recovery enhancement versus CBT for co-occurring substance dependence, traumatic stress, and psychiatric disorders: Proximal outcomes from a

pragmatic randomized trial. *Behaviour Research and Therapy, 77,* 7-16. doi:10.1016/j.brat.2015.11.012

Gatz, M., Brown, V., Hennigan, K., Rechberger, E., O'Keefe, M., Rose, T., & Bjelajac, P. (2007). Effectiveness of an integrated trauma-informed approach to treating women with co-occurring disorders and histories of trauma: The Los Angeles site experience. *Journal of Community Psychology, 35,* 863-878.

Ghee, A. C., Bolling, L., C., & Johnson, C. S. (2009). The efficacy of a condensed Seeking Safety intervention for women in residential chemical dependence treatment at 30 days posttreatment. *Journal of Child Sexual Abuse, 18,* 475-488. doi:10.1080/10583710903183287

Goldstein, A. (2001). *Addiction: From biology to drug policy* (2nd ed.). Freeman.

Graham, K., Annis, H. M., Brett, P. J., & Venesoen, P. (1996). A controlled field trial of group vs. individual cognitive-behavioural training for relapse prevention. *Addiction, 91,* 1127-1139.

Greenfield, S. F., Sugarman, D. E., Freid, C. M., Bailey, G. L., Crisafulli, M. A., Kaufman, J. S., Wigderson, S., Connery, H. S., Rodolico, J., Morgan-Lopez, A. A., & Fitzmaurice, G. M. (2014). Group therapy for women with substance use disorders: Results from the women's recovery group. *Drug and Alcohol Dependence, 142,* 245-253. doi:10.1016/j.drugalcdep.2014.06.035

Greenfield, B. L., Roos, C., Hagler, K. J., Stein, E., Bowen, S., & Witkiewitz, K. A. (2018). Race/ ethnicity and racial group composition moderate the effectiveness of mindfulness-based prevention for substance use disorder. *Addictive Behaviors, 81,* 96-103. doi:10.1016/j.addbeh.2018.02.010

Haas-Koffler, C. L., Leggio, L., & Kenna, G. A. (2014). Pharmacological approaches to reducing cravings in patients with alcohol use disorders. *CNS Drugs*, *28*, 343-360 doi: 10.1007/s40263-014-0149-3

Hagen, E., Erga, A. H., Hagen, K. P., Nesvåg, S. M., McKay, J. R., Lundervold, A. J., & Walderhaug, E. (2016). Assessment of executive function in patients with substance use disorder: A comparison of inventory- and performance-based assessment. *Journal of Substance Abuse*, *66*, 1-8. doi: 10.1016/j.sat.2016.02.010

Harm Reduction Coalition (2018, January 10). Principles of harm reduction. Retrieved from: http://harmreduction.org/about-us/principles-of-harm-reduction/

Hayes, S. C., Wilson, K. G., Gifford, E. V., Bissett, R., Piasecki, M., Batten, S. V., Byrd, M., & Gregg, J. (2004). A preliminary trial of twelve-step facilitation and acceptance and commitment therapy with polysubstance-abusing methadone-maintained opiate addicts. *Behavior Therapy*, *35*, 667-688.

Heather, N., Tebbutt, R. P., & Zamir, R. (1993). Development of a scale for measuring impaired control over alcohol consumption: A preliminary report. *Journal of Studies on Alcohol*, *54*, 700-709. doi:10.15288/jsa.1993.54.700

Henly, S. J. (Ed.). (2016). *The Routledge International Handbook of advanced quantitative methods in nursing research*. Routledge.

Hernnstein, R. J. (1997). *The Matching Law: Papers in Psychology and Economics*. New York, NY: Russell Sage.

Hess, M. (2009). Integrated psychological treatment for substance use and co-morbid anxiety or depression vs. treatment for substance use alone. A systematic review of the published literature. *BMC Psychiatry*, *9*, 1-8. doi:10.1186/1471-244X-9-6

Hien, D. A., Wells, E. A., Jiang, H., Suarez-Morales, L., Campbell, A. N. C., Cohen, L. R., Miele, G. M., Killeen, T., Brigham, G. S., Zhang, Y., Hansen, C., Hodgkins, C., Hatch-Maillette, M., Brown, C., Kulaga, A., Kristman-Valente, A., Chu, M., Sage, R., Robinson, J. A., Liu, D., & Nunes, E. V. (2009). Multisite randomized trial of behavioral interventions for women with co-occurring PTSD and substance use disorders. *Journal of Consulting and Clinical Psychology, 77*, 607-619. doi:10.1037/a0016227

Higgins, J. P. T. & Green, S. (Eds.). (2008). *Cochrane handbook for systematic reviews of interventions*. Wiley-Blackwell.

Higgins, J. P. T., Altman, D. G., Gøtzsche, P., Jüni, P., Moher, D., Oxman, A. D., Savović, J., Schulz, K. F., Weeks, L., Sterne, J. A. C., Cochrane Bias Methods Group, & Cochrane Statistical Methods Group (2011). The Cochrane Collaboration's tool for assessing risk of bias in randomised trials. *British Medical Journal, 343*, 1-9. doi:10.1136/bmj.d5928

Hiller, M. L., Knight, K., & Simpson, D. D. (2006). Recidivism following mandated residential substance abuse treatment for felony probationers. *The Prison Journal, 86*, 230-241. doi:10.1177/0032885506287951

Hone-Blanchet, A. Ciraulo, D. A., Pascual-Leone, A. & Fecteau, S. (2015). Noninvasive brain stimulation to suppress craving in substance use disorders: Review of human evidence and methodological considerations for future work. *Neuroscience & Behavioral Reviews, 59*, 184-200. doi: 10.1016/j.neurobiorev.2015.10.001

Hunt, G. E., Siegfried, N., Morley, K., Sitharthan, T., & Cleary, M. (2014). Psychosocial interventions for people with both severe mental illness and substance misuse. *Cochrane Database of Systematic Reviews 2013, Issue 10. Art. No: CD001088*. doi: 10.1102/14651858.CD001088.pub3

Hunter, S. B., Watkins, K. E., Hepner, K. A., Paddock, S. M., Ewing, B. A., Osilla, K. C., & Perry, S. (2012a). Treating depression and substance use: A randomized controlled trial. *Journal of Substance Abuse Treatment*, *43*, 137-151. doi:10.1016/j.jsat.2011.12.004

Hunter, S. B., Witkiewitz, K., Watkins, K. E., Paddock, S. M., & Hepner, K. A. (2012b). The moderating effects of group cognitive-behavioral therapy for depression among substance users. *Psychology of Addictive Behaviors*, *26*, 906-916. doi:10.1037/a0028158

Hustad, J. T. P., Mastroleo, N. R., Kong, L., Urwin, R., Zeman, S., & LaSalle, L. (2014). The comparative effectiveness of individual and group brief motivational interventions for mandated college students. *Psychology of Addictive Behaviors*, *28*, 74-84. doi:10.1037/a0034899

Hser, Y., Joshi, V., Maglione, M., Chou, C-P., & Anglin, M. D. (2001). Effects of program and patient characteristics on retention of drug treatment patients. *Evaluation and Program Planning*, *24*, 331-341. doi: 10.1016/S0149-7189(01)00027-1

Imani, S., Atef Vahid, M. K., Gharraee, B., Noroozi, A., Habibi, M., & Bowen, S. (2015). Effectiveness of mindfulness-based group therapy compared to the usual opioid dependence treatment. *Iran Journal of Psychiatry*, *10*, 175-184.

Ito, J. R., Donovan, D. M., & Hall, J. J. (1988). Relapse prevention in alcohol aftercare: Effects on drinking outcome, change process, and aftercare attendance. *British Journal of Addiction*, *83*, 171-181.

Jellinek, E. M. (1952). Phases of alcohol addiction. *Quarterly Journal of Studies on Alcohol*, *13*, 673-684.

Jiang, S., Wu, L., & Gao, X. (2017). Beyond face-to-face individual counseling: A systematic review on alternative modes of motivational interviewing in substance abuse treatment and prevention. *Addictive Behaviors, 73*, 216-235. doi:10.1016/j.addbeh.2017.05.023

Joanning, H., Thomas, F., Quinn, W., & Mullen, R. (1992). Treating adolescent drug abuse: A comparison of family systems therapy, group therapy, and family education. *Journal of Marital and Family Therapy*, *18*, 345-356.

Johnson, J. E. & Zlotnick, C. (2012a). A pilot study of group interpersonal psychotherapy for depression in substance-abusing female prisoners. *Journal of Substance Abuse Treatment*, *34*, 371-377. doi:10.1016/j.jsat.2007.05.010

Johnson, J. E. & Zlotnick, C. (2012b). Pilot study of treatment for major depression among women prisoners with substance use disorder. *Journal of Psychiatric Research*, *46*, 1174-1183. doi:10.1016/j.jpsychires.2012.05.007

Johnson, K., Gilbert, L., Hunt, T., Wu, e., Metsch, L., Goddard-Eckrich, D., Richards, S., Tibbetts, R., Rowe, J. C., Wainberg, M. L., & El-Bassel, N. (2018). The effectiveness of a group-based computerized HIV/ STI prevention intervention for black women who use drugs in the criminal justice system: Study protocol for E-WORTH (Empowering African-American women on the road to health), a hybrid type 1 randomized control trial. *Trials*, *19*, 486. doi:10.1186/s13063-018-2792-3

Johnson, K., Rigg, K. K., & Eyles, C. H. (2020). Receiving addiction treatment in the US: Do patient demographics, drug of choice, or substance use severity matter? *International Journal of Drug Policy*, *75*, 102583. doi:10.1016/j.drugpo.2019.10.009

Julien, R. M., Advokat, C. D., & Comaty, J. E. (2011). *A primer of drug action* (12th ed.). Worth.

Kadden, R. M., Cooney, N. L., Getter, H., & Litt, M. D. (1989). Matching alcoholics to coping skills or interactional therapies: Post-treatment results. *Journal of Consulting and Clinical Psychology*, *57*, 698-704.

Kadden, R. M., Litt, M. D., Cooney, N. L., Kabela, E., & Getter, H. (2001). Prospective matching of alcoholic clients to cognitive-behavioral or interactional group therapy. *Journal of Studies on Alcohol*, *62*, 359-369. doi:10.15288/jsa.2001.62.359

Kaminer, Y., Burleson, J. A., & Goldberger, R. (2002). Cognitive-behavioral coping skills and psychoeducation therapies for adolescent substance abuse. *Journal of Nervous and Mental Disease*, *190*, 737-745.

Kashner, T. M., Rodell, D. E., Ogden, S. R., Guggenheim, F. G., & Darson, C. N. (1992). Outcomes and cost of two VA inpatient treatment programs for older alcoholic patients. *Hospital and Community Psychiatry*, *43*, 985-989.

Kelly, J. F., Finney, J. W., & Moos, R. (2005). Substance use disorder patients who are mandated to treatment: Characteristics, treatment process, and 1- and 5- year outcomes. *Journal of Substance Abuse Treatment*, *28*, 213-223. doi:10.1016/j.jsat.2004.10.014

Kelly, S. M., Schwartz, R. P., O'Grady, K. E., Gandhi, D., & Jaffe, J. (2012). Impact of methadone with versus without drug abuse counseling on HIV risk: 4- and 12-month findings from a clinical trial. *Journal of Addiction Medicine*, *6*, 145-152. doi:10.1097/ADM.0b013e31823ae556

Kleinpeter, C., Brocato, J., Fischer, R., & Ireland, C. (2009). Specialty groups for drug court participants. *Journal of Groups in Addiction & Recovery*, *4*, 265-287. doi:10.1080/15560350903340486

Klimas, J., Field, C., Cullen, W., O'Gorman, C. S. M., Glynn, L. G., Keenan, E., … Dunne, C. (2014). Psychosocial interventions to reduce alcohol consumption in concurrent problem alcohol and illicit drug users: Cochrane Review. *Systematic Reviews*, *2*, 3.

Kopak, A. M. (2014). Breaking the addictive cycle of the system: Improving U.S. criminal justice practices to address substance use disorders. *International Journal of Prisoner Health*, *11*, 4-16. doi: 10.1108/IJPH-07-2014-0023

Koppel, S. (2016). Evidence-based drug crime policy: Moving beyond the moral/medical dichotomy to a multi-level model of addiction. *Journal of Civil & Legal Sciences, 5*, 175. doi: 10.4172/2169-0170.1000175

Korcha, R. A., Polcin, D. L., Bond, J. C., Lapp, W. M., & Galloway, G. (2011). Substance use and motivation: A longitudinal perspective. *The American Journal of Drug and Alcohol Abuse*, *37*, 48-53. doi: 0.3109/00952990.2010.535583

Kushner, M. G., Maurer, E. W., Thuras, P., Donahue, C., Frye, B., Menary, K. R., Hobbs, J., Haeny, A. M., & Van Demark, J. (2013). Hybrid cognitive behavioral therapy versus relaxation training for co-occurring anxiety and alcohol disorder: A randomized clinical trial. *Journal of Consulting and Clinical Psychology*, *81*, 429-442. doi:10.1037/a0031301

LaChance, H., Feldstein Ewing, S. W., Bryan, A. D., & Hutchison, K. E. (2009). What makes group MET work? A randomized controlled trial of college student drinkers in mandated alcohol diversion. *Psychology of Addictive Behaviors*, *23*, 598-612. doi:10.1037/a0016633

Lander, L. R., Gurka, K. K., Marshalek, P. J., Riffon, M., & Sullivan, C. R. (2015). A comparison of pregnancy-only versus mixed-gender group therapy among pregnant

women with opioid use disorder. *Social Work Research, 39,* 235-244. doi:10.1093/swr/svv029

Lander, L. R., Marshalek, P., & Sullivan, C. R. (2016). Medication-assisted treatment for pregnant women: An interdisciplinary group based model. *Journal of Groups in Addiction & Recovery, 11,* 182-193. doi:10.1080/1556035X.2016.1185987

Laudet, A. B. (2011). The case for considering quality of life in addiction research and clinical practice. *Addiction Science & Clinical Practice,* 44-55.

Leece, P., Cavacuiti, C., Macdonald, E., Gomes, T., Kahan, M., Srivastava, A., … Juurlink, D. N. (2015). Predictors of opioid-related death during methadone therapy. *Journal of Substance Abuse Treatment, 57,* 30-35. doi: 10.1016/j.jsat.2015.04.008

Li, S., Armstrong, S., Chaim, G., Kelly, C., & Shenfeld, J. (2007). Group and individual couple treatment for substance abuse clients: A pilot study. *The American Journal of Family Therapy, 35,* 221-233. doi:10.1080/01926180600814585

Liddle, H. A., Dakof, G. A., Parker, K., Diamond, G. S., Barrett, K., & Tejeda, M. (2001). Multidimensional family therapy for adolescent drug abuse: Results of a randomized clinical trial. *American Journal of Drug and Alcohol Abuse, 27,* 651-689.

Liddle, H. A., Rowe, C. L., & Dakof, G. A. (2009). Multidimensional family therapy for young adolescent substance abuse: Twelve-month outcome of a randomized controlled trial.

Lin, L. & Chu, H. (2018). Quantifying publication bias in meta-analysis. *Journal of the International Biometric Society, 74,* 785-794. doi:10.1111/biom.12817

Linehan, M. M., Schmidt III, H., Dimmeff, L. A., Craft, J. C., Kater, J., & Comtois, K. A. (1999). Dialectical behavior therapy for patients with borderline personality disorder and drug-dependence. *American Journal on Addictions, 8,* 279-292.

Ling, W., Charuvastra, C., Collins, J. F., Batki, S., Brown, Jr., L. S., Kintaudi, P., Wesson, D. R., McNicholas, L., Tusel, D. J., Malkerneker, U., Renner, Jr., J. A., Santos, E., Casadonte, P., Fye, C., Stine, S., Wang, R. I. H., & Segal, D. (1998). Buprenorphine maintenance treatment of opioid dependence: A multicenter, randomized clinical trial. *Addiction, 93*, 478-486.

Ling, W., Hillhouse, M., Ang, A., Jenkins, J., & Fahey, J. (2013). Comparison of behavioral treatment conditions in buprenorphine maintenance. *Addiction, 108*, 1788-1798. doi:10.1111/add.12266

Lingford-Hughes, A. (2016). Substitution treatment in addiction: there is more than one way… *Addiction, 111*, 776-777. doi: 10.1111/add.13288

Litt, M. D., Kadden, R. M., Cooney, N. L., & Kabela, E. (2003). Coping skills and treatment outcomes in cognitive-behavioral and interactional group therapy for alcoholism. *Journal of Consulting and Clinical Psychology, 71*, 118-128.

Lo Coco, G., Melchiori, F., Oieni, V., Infurna, M. R., Strauss, B., Schwartze, D., Rosendahl, J., & Gullo, S. (2019). Group treatment for substance use disorder in adults: A systematic review and meta-analysis of randomized-controlled trials. *Journal of Substance Abuse Treatment, 99*, 104-116.

Logan, D. E. & Marlatt, G. A. (2014). Harm Reduction therapy: A practice-friendly review of research. *Journal of Clinical Psychology, 66*, 201-214. doi: 10.1002/jclp.20669

Luthar, S. S. & Suchman N. E. (2000). Relational psychotherapy mothers' group: A developmentally informed intervention for at-risk mothers. *Development and Psychopathology, 12*, 235-253.

Lydecker, K. P., Tate, S. R., Cummins, K. M., McQuaid, J., Granholm, E., & Brown, S. A. (2010). Clinical outcomes of an integrated treatment for depression and substance use disorders. *Psychology of Addictive Behaviors, 24*, 453-465. doi:1.1037/a0019943

Magill, M. & Ray, L. A. (2009). Cognitive-behavioral treatment with adult alcohol and illicit drug users: A meta-analysis of randomized controlled trials. *Journal of Studies on Alcohol and Drugs, 70*, 516-527. doi:10.15288/jsad.2009.70.516

Margolin, A., Avants, S., & Arnold, R. (2005). Acupuncture and spirituality-focused group therapy for the treatment of HIV-positive drug users: A preliminary study. *Journal of Psychoactive Drugs, 37*, 385-388.

Marlatt, G. A. (1996). Models of relapse and relapse prevention: A commentary. *Experimental and Clinical Psychopharmacology, 4*, 55-60. doi: 10.1037/1064-1297.4.1.55

Marlatt, G. A. (Ed.) (1998). *Harm reduction: Pragmatic strategies for managing high-risk behaviors.* Guilford Press.

Marques, A. C. & Formigoni, M. L. (2001). Comparison of individual and group cognitive-behavioral therapy for alcohol and/or drug dependent patients. *Addiction, 96*, 835-846.

Martin, K., Giannandrea, P., Rogers, B., & Johnson, J. (1996). Group intervention with pre-recovery patients. *Journal of Substance Abuse Treatment, 13*, 33-41.

McGovern, M. P., Lambert-Harris, C., Xie, H., Meier, A., McLeman, B., & Saunders, E. (2015). A randomized controlled trial of treatments for co-occurring substance use disorders and post-traumatic stress disorder. *Addiction, 110*, 1194-1204. doi:10.1111/add.12943

McHugh, R. K. & Greenfield, S. F. (2010). Psychiatric symptom improvement in women following group substance abuse treatment: Results from the women's recovery group study. *Journal of Cognitive Psychotherapy, 24*, 26-36. doi:10.1891/0889-8391.24.1.26

McHugh, R. K., Sugarman, D. E., Meyer, L., Fitzmaurice, G. M., & Greenfield, S. F. (2020). The relationship between perceived stress and depression in substance use disorder treatment. *Drug and Alcohol Dependence, 207*, 1-4. doi:10.1016/j.drugalcdep.2019.107819

McKay, J. R., Alterman, A. I., Cacciola, J. S., Rutherford, M. J., O'Brien, C. P., & Koppenhaver, J. (1997). Group counseling and individualized relapse prevention aftercare following intensive outpatient treatment for cocaine dependence: Initial results. *Journal of Consulting and Clinical Psychology, 65*, 778-788.

McLellan, A. T., Kushner, H., Metzger, D., Peters, R., Smith, I., Grissom, G., Pettinati, H., Argeriou, M. (1992). The fifth edition of the addiction severity index. *Journal of Substance Abuse Treatment, 9*, 199-213.

McNally, G. P. (2014). Extinction of drug seeking: Neural circuits and approaches to augmentation. *Neuropharmacology, 76*, 528-532. doi:10.1016/j.neuropharm.2013.06.007

Meade, C. S., Drabkin, A. S., Hansen, N. B., Wilson, P. A., Kochman, A., & Sikkema, K. J. (2010). Reductions in alcohol and cocaine use following a group coping intervention for HIV-positive adults with childhood sexual abuse histories. *Addiction, 105*, 1942-1951. doi:10.1111/j.1360-0443.2010.03075.x

Messina, N., Calhoun, S., Warda, U. (2012). Gender-responsive drug court treatment: A randomized controlled trial. *Criminal Justice and Behavior, 39*, 1539-1558. doi:10.1177/0093854812453913

Milby, J. B., Schumacher, J. E., Wallace, D., Freedman, M. J., & Vuchinich, R. E. (2005). To house or not to house: The effects of providing housing to homeless substance abusers in treatment. *American Journal of Public Health, 95*, 1259-1265.

Miller, W. R., Benefield, R. G., & Tonigan, J. S. (1993). Enhancing motivation for change in problem drinking: A controlled comparison of two therapist styles. *Journal of Consulting and Clinical Psychology*, *61*, 455-461.

Miotto, K., Hillhouse, M., Donovick, R., Cunningham-Rathner, J., Charuvastra, C., Torrington, M., Esagoff, A. E., & Ling, W. (2012). Comparison of buprenorphine treatment for opioid dependence in 3 settings. *Journal of Addiction Medicine, 6,* 68-76. doi:10.1097/ADM.0b013e318233d621

Mitchell, S. G., Gryczynski, J., Schwartz, R. P., O'Grady, K. E., Olsen, Y. K., & Jaffe, J. H. (2013). A randomized trial of intensive outpatient (IOP) vs. standard outpatient (OP) buprenorphine treatment for African Americans. *Drug and Alcohol Dependence, 128,* 222-229. doi:10.1016/j.drugalcdep.2012.08.027

Monterosso, J., Piray, P., & Luo, S. (2012). Neuroeconomics and the study of addiction. *Biology of Psychiatry, 72,* 107-112. doi: 10.1016/j.biopsych.2012.03.012

Monti, P. M., Rohsenow, D. J., Swift, R. M., Gulliver, S. B., Colby, S. M., Mueller, T. I, Gordon, A., Abrams, D. B., Niaura, R. S., & Asher, M. K. (2001). Naltrexone and cue exposure with coping and communication skills training for alcoholics: Treatment process and 1-year outcomes. *Alcoholism, Clinical and Experimental Research, 25,* 1634-1647.

Muresanu, D. F., Stan, A., & Buzoianu, A. (2012). Neuroplasticity and impulse control disorders. *Journal of the Neurological Sciences, 316,* 15-20. doi: 10.1016/j.jns.2012.01.016

Narayanan, G. & Naaz, S. (2018). A transdiagnostic approach to interventions in addictive disorders – third wave therapies and other current interventions. *Indian Journal of Psychiatry, 60*, 522-528.

National Institute on Drug Abuse (NIDA) (2012, December). *Principles of drug addiction treatment: A research-based guide,* NIH Publication No.12-4180. Bethesda, MD: National Institutes of Health. U.S. Department of Health and Human Services.

National Institute on Drug Abuse (NIDA) (August, 2015). *About the CTN*. Retrieved from: https://www.drugabuse.gov/about-nida/organization/cctn/ctn/about-ctn

National Institute on Drug Abuse (NIDA) (2016, July). *Treatment approaches for drug addiction*. Retrieved from: https://www.drugabuse.gov/publications/drugfacts/treatment-approaches-drug-addiction

Neely, J. G., Sharon, J. D., Graboyes, E. M., Paniello, R. C., Nussenbaum, B., Grindler, D. J., & Dassopoulos, T. (2013). Practical guide to understanding comparative effectiveness research. *Otolaryngology – Head and Neck Surgery, 149*, 804-812. doi: 10.1177/0194599813506539

Nutt, D. (2013). Addiction: lifestyle choice or medical diagnosis? *Journal of Evaluation in Clinical Practice, 19*, 493-496. doi: 10.1111/jep.12045

Nyamathi, A., Shoptaw, S., Greengold, B., Nyamathi, K., Marfisee, M., de Castro, V., Khalilifard, F., George, D., & Leake, B. (2010). Effect of motivational interviewing on reduction of alcohol use. *Drug and Alcohol Dependence, 107*, 23-30. doi:10.1016/j.drugalcdep.2009.08.021

Nyamathi, A. M., Sinha, K., Greengold, B., Marfisee, M., Khalilifard, F., Cohen, A., & Leake, B. (2011). Effectiveness of intervention on improvement of drug use among methadone

maintained adults. *Journal of Addictive Diseases, 30,* 6-16. doi:10.1080/10550887.2010.531669

Nydegger, L. A., Keller, A. R., Hood, C., Siegel, J. T., & Stacy, A. W. (2013). Effects of a one-hour intervention on condom implementation intentions among drug users in Southern California. *AIDS Care, 25,* 1586-1591. doi:10.1080/09540121.2013.793271

O'Farrell, T. J. & Schein, A. Z. (2011). Behavioral couples therapy for alcoholism and drug abuse. *Journal of Family Psychotherapy, 22,* 193-215. doi:10.1080/08975353.2011.602615

O'Farrell, T. J., Schumm, J. A., Dunlap, L. J., Murphy, M. M., & Muchowski, P. (2016). A randomized clinical trial of group versus standard behavioral couples therapy plus individually based treatment for patients with alcohol dependence. *Journal of Consulting and Clinical Psychology, 84,* 497-510. doi:10.1037/ccp0000089

Olson, P. R., Devine, V. T., Ganley, R., & Dorsey, G. C. (1981). Long-term effects of behavioral versus insight-oriented therapy with inpatient alcoholics. *Journal of Consulting and Clinical Psychology, 49,* 866-877.

O'Malley, S. S., Sinha, R., Grilo, C. M., Capone, C., Farren, C. K., McKee, S. A., Rounsaville, B. J., & Wu, R. (2007). Naltrexone and cognitive behavioral coping skills therapy for the treatment of alcohol drinking and eating disorder features in alcohol-edpendent women: A randomized controlled trial. *Alcoholism, Clinical and Experimental Research, 31,* 625-634.

Omer, H., Winch, G., Dar, R. (1998). Therapeutic impact in treatments for smoking and test-anxiety. *Psychotherapy Research, 8,* 439-454.

Orchowski, L. M. & Johnson, J. E. (2012). Efficacy of group treatments for alcohol use disorders: A review. *Current Drug Abuse Reviews, 5,* 148-157.

Ouzir, M. & Errami, M. (2016). Etiological theories of addiction: A comprehensive update on neurobiological, genetic, and behavioural vulnerability. *Pharmacology, Biochemistry, and Behavior, 148,* 59-68. doi: 10.1016/j.pbb.2016.06.005

Oyemade, A. (2015). Opioid abuse and overdose crisis: New treatment available – controversy continues between harm reduction treatment and abstinence treatment. *Innovations in Clinical Neuroscience, 12,* 10-11.

Paddock, S. M., Hunter, S. B., & Leininger, T. J. (2014). Does group cognitive-behavioral therapy module type moderate depression symptom changes in substance abuse treatment clients? *Journal of Substance Abuse Treatment, 47,* 78-85. doi:10.1016/j.jsat.2014.02.005

Padwa, H. & Kaplan, C. D. (2018). Translating science to practice: Lessons learned implementing evidence-based treatments in US substance use disorder treatment programs. *European Journal of Criminal Policy and Research, 24,* 171-182. doi: 10.1007/s10610-017-9360-3

Patchell, B. A., Robbins, L. K., Lowe, J. A., & Hoke, M. M. (2015). The effect of a culturally tailored substance abuse prevention intervention with Plains Indian adolescents. *Journal of Cultural Diversity, 22,* 1-8.

Peck J. A. & Ranaldi, R. (2014). Drug abstinence: Exploring animal models and behavioral treatment strategies. *Psychopharmacology, 231,* 2045-2058. doi: 10.1007/s00213-014-3517-2

Pennay, A., Cameron, J., Reichert, T., Strickland, H., Lee, N. K., Hall, K., & Lubman. D. I. (2011). A systematic review of interventions for co-occurring substance use disorder and borderline personality disorder. *Journal of Substance Abuse Treatment*, *41*, 363-373.

Petry, N. M., Weinstock, J., Alessi, S. M., Lewis, M. W., & Dieckhaus, K. (2010). Group-based randomized trial of contingencies for health and abstinence in HIV patients. *Journal of Consulting and Clinical Psychology*, *78*, 89-97. doi:10.1037/a0016778

Petry, N. M., Weinstock, J., & Alessi, S. M. (2011). A randomized trial of contingency management delivered in the context of group counseling. *Journal of Consulting and Clinical Psychology*, *79*, 686-696. doi:10.1037/a0024813

Petry, N. M. & Carroll, K. M. (2013). Contingency management is efficacious in opioid-dependent outpatients not maintained on agonist pharmacotherapy. *Psychology of Addictive Behaviors*, *27*, 1036-1043. doi:10.1037/a0032175

Pomerleau, O. F., Pertschuk, M., Adkins, D., & Brady, J. P. (1978). A comparison of behavioral and traditional treatment for middle-income problem drinkers. *Journal of Behavioral Medicine*, *1*, 187-200.

Prendergast, M. L., Podus, D., Chang, E., & Urada, D. (2002). The effectiveness of drug abuse treatment: A meta-analysis of comparison group studies. *Drug and Alcohol Dependence*, *67*, 53-72.

Prochaska, J. O. & DiClemente, C. C. (1984). *The Transtheoretical Approach: Crossing the traditional boundaries of therapy.* Dow Jones-Irwin.

Pugatch, M., Knight, J. R., McGuiness, P., Sherritt, L., & Levy, S. (2014). A group therapy program for opioid-dependent adolescents and their parents. *Substance Abuse*, *35*, 435-441. doi:10.1080/08897077.2014.958208

Raisch, D. W., Campbell, H. M., Garnand, D. A., Jones, M. A., Sather, M. R., Naik, R., & Ling, W. (2012). Health-related quality of life changes associated with buprenorphine treatment for opioid dependence. *Quality of Life Research*, *21*, 1177-1183. doi:10.1007/s11136-011-0027-0

Razavi, D. Vandecasteele, H., Primo, C., Bodo, M., Debrier, F., Verbist, H., Pethica, D., Eerdekens, M., & Kaufman, L. (1999). Maintaining abstinence from cigarette smoking: Effectiveness of group counseling and factors predicting outcome. *European Journal of Cancer*, *35*, 1238-1247.

Rengifo, A. F. & Stemen, D. (2009). The impact of drug treatment on recidivism: Do mandatory programs make a difference? Evidence from Kansas's Senate Bill 123. *Crime & Delinquency*, *59*, 930-950. doi:10.1177/0011128709348447

Richards, G. C. (2019). Reporting biases. In: *Catalog of Bias 2019*. Retrieved from: https://catalogofbias.org/biases/reporting-biases/

Rieckmann, T., Bergmann, L., & Rasplica, C. (2011). Legislating clinical practice: Counselor responses to an evidence-based practice mandate. *Journal of Psychoactive Drugs, Suppl 7*, 27-39.

Rieckmann, T. R., Kovas, A. E., Cassidy, E. F., & McCarty, D. (2011). Employing policy and purchasing levers to increase the use of evidence-based practices in community-based substance abuse treatment settings: Reports from single state authorities. *Evaluation and Program Planning*, *34*, 366-374. doi:10.1016/j.evalprogplan.2011.02.003

Roberts, N. P., Roberts, P. A., Jones, N., & Bisson, J. L. (2015). Psychological interventions for post-traumatic stress disorder and comorbid substance use disorder: A systematic review

and meta-analysis. *Clinical Psychology Review, 38*, 25-38. doi:10.1016/j.cpr.2015.02.007

Robertson, A., Walker, C. S., Stovall, M., & McCluskey, L. (2015). Use of evidence-based substance use treatment practices in Mississippi. *Evaluation and Program Planning*, *52*, 198-204. doi:10.1016/j.evalprogplan.2015.06.002

Rohsenow, D. J., Monti, P. M., Martin, R. A., Colby, S. M., Myers, M. G., Gulliver, S. B., Brown, R. A., Mueller, T. I., Gordon, A., & Abrams, D. B. (2004). Motivational enhancement and coping skills training for cocaine abusers: Effects on substance use outcomes. *Addiction*, *99*, 862-874.

Roll, D., Spottswood, M., & Huang, H. (2015). Using shared medical appointments to increase access to buprenorphine treatment. *Journal of American Board of Family Medicine*, *28*, 676-677. doi:10.3122/jabfm.2015.05.150017

Rosenblum, A., Magura, S., Kayman, D. J., & Fong, C. (2005). Motivationally enhanced group counseling for substance users in a soup kitchen: A randomized clinical trial. *Drug and Alcohol Dependence*, *80*, 91-103. doi:10.1016/j.drugalcdep.2005.03.012

Rosenthal, R. (1979). The file drawer problem and tolerance for null results. *Psychological Bulletin*, *86*, 638-641. doi:10.1037/003-2909.86.3.638

Rothschild, D. (2010). Partners in treatment: Relational psychoanalysis and harm reduction therapy. *Journal of Clinical Psychology*, *66*, 136-149. doi: 10.1002/jclp.20670

Rusch, L. M. (2016). A reality check: The need for a deeper understanding of opioid abuse treatment options: A policy statement from the American College of Clinical Pharmacology. *The Journal of Clinical Pharmacology*, *56*, 7-10. doi: 10.1002/jcph.645

Sandahl, C., Herlitz, K., Ahlin, G., & Rönnberg, S. (1998). Time-limited group psychotherapy for moderately alcohol dependent patients: A randomized controlled clinical trial. *Psychotherapy Research, 8,* 361-378.

Sandahl, C., Gerge, A., & Herlitz, K. (2004). Does treatment focus on self-efficacy result in better coping? Paradoxical findings from psychodynamic and cognitive-behavioral group treatment of moderately alcohol-dependent patients. *Psychotherapy Research, 14,* 388-397.

Schmitz, J. M., Oswald, L. M., Jacks, S. D., Rustin, T., Rhoades, H. M., & Grabowski, J. (1997). Relapse prevention treatment for cocaine dependence: group vs. individual format. *Addictive Behaviors, 22,* 405-418.

Schwartz, R. P., Kelly, S. M., Mitchell, S. G., Gryczynski, J., O'Grady, K. E., Gandhi, D., Olsen, Y., & Jaffe, J. H. (2016). Patient-centered methadone treatment: A randomized clinical trial. *Addiction, 112,* 454-464. doi:10.1111/add.13622

Scott, K. (2015). Contingencies of the will: Uses of harm reduction and the disease model of addiction among health care practitioners. *Health, 19,* 507-522. doi: 10.1177/136459314556904

Searcy, V. & Lipps, A. (2012). The effectiveness of Seeking Safety on reducing PTSD symptoms in clients receiving substance dependence treatment. *Alcoholism Treatment Quarterly, 30,* 238-255. doi:10.1080/07347324.2012.663304

Shamseer, L., Moher, D., Clarke, M., Ghersi, D., Liberati, A., Petticrew, M., … the PRISMA-P Group (2015). Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015: elaboration and explanation. *British Medical Journal, 349,* 1-25. doi: 10.1136/bmj.g7647

Shorey, R. C., Elmquist, J., Gawyrsiak, M. J., Strauss, C., Haynes, E., Anderson, S., Stuart, G. L. (2017). A randomized controlled trial of a mindfulness and acceptance group therapy for residential substance use patients. *Substance Use & Misuse*, *52*, 1400-1410. doi:10.1080/10826084.2017.1282432

Siegel, E. Y., Haller, M., Cui, R., Trim, R. S., Tate, S. R., & Norman, S. B. (2017). Examining changes in negative mood regulation expectancies, posttraumatic stress, depression, and substance use following integrated cognitive-behavioral therapy. *Substance Abuse*, *38*, 468-472. doi:10.1080/08897077.2017.1342736

Skinner, M. D. & Aubin, H. J. (2010). Craving's place in addiction theory: Contributions of major models. *Neuroscience and Biobehavioral Reviews*, *34*, 606-623. doi: 10.1016/j.neurbiorev.2009.11.024

Slavin, R. E. (1986). Best-evidence synthesis: An alternative to meta-analytic and traditional reviews. *Educational Researcher*, *15*, 5-11. doi:10.3102/0013189X015009005

Smith, D. C., Hall, J. A., Williams, J. K., An, H., & Gotman, N. (2006). Comparative efficacy of family and group treatment for adolescent substance abuse. *The American Journal on Addictions*, *15*, 131-136. doi:10.1080/105504906010066253

Smith, S. S., Jorenby, D. E., Fiore, M., Anderson, J. E., Mielke, M. M., Beach, K. E., Piasecki, T. M., & Baker, T. B. (2001). Strike while the iron is hot: Can stepped care treatments resurrect relapsing in smokers? *Journal of Consulting and Clinical Psychology*, *69*, 429-439. doi:10.1037//002-006x.69.3.429

Smock, S. A., Trepper, T. S., Wetchler, J. L., McCollum, E. E., Ray, R., & Pierce, K. (2008). Solution-focused group therapy for level 1 substance abusers. *Journal of Marital and Family Therapy*, *34*, 107-120.

Sobell, L. C. & Sobell, M. B. (1992). Timeline follow-back: A technique for assessing self-reported alcohol consumption. In: Litten, R. Z., Allen, J. P. (Eds.), *Measuring alcohol consumption: Psychosocial and biochemical methods*. Humana Press, pp. 41-72.

Sobell, L. C. & Sobell, M. B. (1996). *Timeline Followback user's guide: A calendar method for assessing alcohol and drug use*. Addiction Research Foundation.

Sobell, L. C., Sobell, M. B., & Agrawal, S. (2009). Randomized controlled trial of a cognitive-behavioral motivational intervention in a group versus individual format for substance use disorders. *Psychology of Addictive Behaviors*, *23*, 672-683. doi:10.1037/a0016636

Sobell, L. C. & Sobell, M. B. (2011). *Group therapy for substance use disorders: a motivational cognitive-behavioral approach*. Guilford Press.

Sokol, R., LaVertu, A. E., Morrill, D., Albanese, C., & Schuman-Olivier, Z. (2018). Group-based treatment of opioid use disorder with buprenorphine: A systematic review. *Journal of Substance Abuse Treatment*, *84*, 78-87.

Soller, W. & Vogt, E. (2010). Positioning patient counselling as a measurable cornerstone of medication therapy management. *International Journal of Pharmacy Practice*, *18*, 249-251. doi: 10.1111/j.2042-7174.2010.00062.x

Stauffer, C. S., Moschetto, J. M., McKernan., S. M., Hsiang, E., Borsari, B., & Woolley, J. D. (2019). Oxytocin-enhanced motivational interviewing group therapy for methamphetamine use disorder in men who have sex with men: Study protocol for a randomized controlled trial. *Trials*, *20*, 145. doi:10.1186/s13063-019-3225-7

Stein, L. A. R., Clair, M., Martin, R. A., Soenksen, S., Lebeau, R., Rohsenow, D. J., Kahler, C. W., Hurlbut, W., & Monti, P. M. (2014). Measuring behaviors of individual adolescents

Stephens, R. S., Roffman, R. A., & Curtin, L. (2000). Comparison of extended versus brief treatments for marijuana use. *Journal of Consulting and Clinical Psychology, 68*, 898-908.

Stinchfield, R., Owen, P. L., & Winters, K. C. (1994). Group therapy for substance abuse: A review of the empirical research. In A. Fuhriman & G. M. Burlingame (Eds.), *Handbook of Group Psychotherapy: An Empirical and Clinical Synthesis*. Wiley.

Straussner, S. L. A. (2012). Clinical treatment of substance abusers: Past, present, and future. *Clinical Social Work, 40*, 127-133. doi: 10.1007/s10615-012-0387-0

Substance Abuse and Mental Health Services Administration (2005). *Substance abuse treatment for persons with co-occurring disorders*, Treatment Improvement Protocol (TIP) Series, No. 42, HHS Publication No. (SMA) 13-3992. Author. Retrieved from: https://store.samhsa.gov/system/files/sma13-3992.pdf

Substance Abuse and Mental Health Services Administration (SAMHSA), Office of Applied Studies (2010). *National Survey of Substance Abuse Treatment Services (N-SSATS): 2009. Data on substance abuse treatment* facilities, DASIS Series: S-54, HHS Publication No. (SMA) 10-4579. Author.

Substance Abuse and Mental Health Services Administration (SAMHSA) (2011, December 22). *SAMHSA announces a working definition of "recovery" from mental disorders and substance use disorders*. Retrieved from: https://www.samhsa.gov/newsroom/press-announcements/201112220300

Substance Abuse and Mental Health Services Administration (SAMHSA) (2012). *The facts about naltrexone for treatment of opioid addiction*, HHS Publication No. (SMA) 12-4444. Author.

Substance Abuse and Mental Health Services Administration (SAMHSA) (2014). Proceedings from National Conference on Pharmaceutical and Chemical Diversion ’14: *The importance of treatment for opioid use disorders.* Howard.

Substance Abuse and Mental Health Services Administration (SAMHSA) (2015a). *Substance Abuse Treatment: Group Therapy*, HHS Publication No. (SMA) 15-3991. Author.

Substance Abuse and Mental Health Services Administration (SAMHSA) (2015b, September 28). *Medication and Counseling Treatment*. Retrieved from: https://www.samhsa.gov/medication-assisted-treatment/treatment

Substance Abuse and Mental Health Services Administration and National Institute on Alcohol Abuse and Alcoholism (SAMHSA) (2015c). *Medication for the Treatment of Alcohol Use Disorder: A Brief Guide.* HHS Publication No. (SMA) 15-4907. Author. Retrieved from: https://store.samhsa.gov/system/files/sma15-4907.pdf

Substance Abuse and Mental Health Services Administration (SAMHSA) (2017). *Addiction counseling competencies: The knowledge, skills, and attitudes of professional practice*, HHS Publication No. (SMA) 15-4171. Author.

Substance Abuse and Mental Health Services Administration (2018b). *National Survey of Substance Abuse Treatment Services (N-SSATS): 2017. Data on Substance Abuse Treatment Facilities.* Author.

Sussman, S. (2010). A review of Alcoholics Anonymous/ Narcotics Anonymous programs for teens. *Evaluation & the Health Professions*, *33*, 26-55. doi: 10.1177/0163278709356186

Suzuki, J., Zinser, J., Klaiber, B., Hannon, M., Grassi, H., Spinosa, M., Chin Feman, S. P. (2015). Feasibility of implementing shared medical appointments (SMAs) for office-

based opioid treatment with buprenorphine: A pilot study. *Substance Abuse, 36,* 166-169. doi:10.1080/08897077.2014.998400

Sweatt, J. D. (2016). Neural plasticity and behavior – sixty years of conceptual advances. *Journal of Neurochemistry, 139,* 179-199. doi: 10.1111/jnc.13580

Swopes, R. M., Davis, J. L., & Scholl, J. A. (2017). Treating substance abuse and trauma symptoms in incarcerated women: An effectiveness study. *Journal of Interpersonal Violence, 32,* 1143-1165. doi:10.1177/0886260515587668

Tanner-Smith, E. E., Wilson, S., J., & Lipsey, M. W. (2016). The comparative effectiveness of outpatient treatment for adolescent substance abuse: A meta-analysis. *Journal of Substance Abuse Treatment, 44,* 145-158. doi:10.1016/j.jsat.2012.05.006

Tatarsky A. & Marlatt, G. A. (2010). State of the art in harm reduction psychotherapy: An emerging treatment for substance misuse. *Journal of Clinical Psychology, 66,* 117-122. doi: 10.1002/jclp.20672

Telch, M. J., Hannon, R., & Telch, C. F. (1984). A comparison of cessation strategies for the outpatient alcoholic. *Addictive Behaviors, 9,* 103-109.

Tiffany, S. T., Friedman, L., Greenfield, D., Hasin, D. S., & Jackson, R. (2011). Beyond drug use: A systematic consideration of other outcomes in evaluations of treatments for substance use disorders. *Addiction, 107,* 709-718.

Toussaint, D. W., VanDeMark, N. R., Bornemann, A., & Graeber, C. J. (2007). Modifications to the Trauma Recovery and Empowerment Model (TREM) for substance-abusing women with histories of violence: Outcomes and lessons learned at a Colorado substance abuse treatment center. *Journal of Community Psychology, 35,* 879-894

Tross, S. T., Campbell, A. N. C., Cohen, L. R., Calsyn, D., Pavlicova, M., Miele, G. M., Hu, M., Haynes, L., Nugent, N., Gan, W., Hatch-Maillette, M., Mandler, R., McLaughlin, P., El-Bassel, N., Crits-Christoph, P., & Nunes, E. V. (2008). Effectiveness of HIV/ STD sexual risk reduction groups for women in substance abuse treatment programs: Results of NIDA Clinical Trials Network trial. *Journal of Acquired Immune Deficiency Syndromes, 48*, 581-589.

U.S. Food & Drug Administration (FDA) (2014, April 3). *FDA approves new hand-held auto-injector to reverse opioid overdose*. Retrieved from: wayback.archive-it.org/7993/20170112032835/http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm391465.htm

Vakharia, S. P. & Little, J. (2016). Starting where the client is: Harm Reduction guidelines for clinical social work practice. *Clinical Social Work Journal*, *44*, 1-12. doi: 10.1007/s10615-016-0584-3

Valeri, L., Sugarman, D. E., Reilly, M. E., McHugh, R. K., Fitzmaurice, G. M., & Greenfield, S. F. (2018). Group therapy for women with substance use disorders: In-session affiliation predicts women's substance use treatment outcomes. *Journal of Substance Abuse Treatment, 94*, 60-68. doi:10.1016/j.jsat.2018.08.008

Volkow, N. D., Frieden, T. R., Hyde, P. S., & Cha, S. S. (2014). Medication-Assisted Therapies: Tackling the opioid-overdose epidemic. *The New England Journal of Medicine, 370,* 2063-2066.

Waldron, H. B., Slesnick, N. B., Brody, J. L., Turner, C. W., & Peterson, T. R. (2001). Treatment outcomes for adolescent AOD abuse at 4- and 7-month assessments. *Journal of Consulting and Clinical Psychology*, *69*, 802-813.

Waldron, H. B. & Turner, C. W. (2008). Evidence-based psychosocial treatments for adolescent substance abuse. *Journal of Clinical Child & Adolescent Psychology, 37,* 238-261. doi:10.1080/15374410701820133

Walitzer, K. S. & Conners, G. J. (2007). Thirty-month follow-up of drinking moderation training for women: A randomized clinical trial. *Journal of Consulting and Clinical Psychology, 75,* 501-507.

Watkins, K. E., Hunter, S. B., Hepner, K. A., Paddock. S. M., de la Cruz, E., Zhou, A. J., & Gilmore, J. (2011). An effectiveness trial of group cognitive behavioral therapy for patients with persistent depressive symptoms in substance abuse treatment. *Archives of General Psychiatry, 68,* 577-584. doi:10.1001/archgenpsychiatry.2011.53 doi:10.1001/archgenpsychiatry.2011.121

Weiss, R. D., Griffin, M. L., Greenfield, S. F., Najavits, L. M., Soto, J. A., & Hennen, J. A. (2000). Group therapy for patients with bipolar disorder and substance dependence: Results of a pilot study. *Journal of Clinical Psychiatry, 61,* 361-367.

Weiss, R. D., Jaffee, W. B., de Menil, V. P., & Cogley, C. B. (2004). Group therapy for substance use disorders: What do we know? *Harvard Review of Psychiatry, 12,* 339-350.

Weiss, R. D.., Griffin, M. L., Kolodziej. M. E., Greenfield, S. F., Najavits, L. M., Daley, D. C., Doreau, H. R., & Hennen, J. A. (2007). A randomized trial of integrated group therapy versus group drug counseling for patients with bipolar disorder and substance dependence. *The American Journal of Psychiatry, 164,* 100-107. doi:10.1176/ajp.2007.164.1.100

Weiss, R. D., Griffin, M., Jaffee, E., Bender, R. E., Graff, F. S., Gallop, R. & Fitzmaurice, G. M. (2009). A "community-friendly" version of integrated group therapy for patients with bipolar disorder and substance dependence. *Drug and Alcohol Dependence*, *106*, 212-219. doi:10.1016/j.drugalcdep.2009.04.018

Weiss, R. D., Sharpe Potter, J., Fiellin, D. A., Byrne, M., Connery, H. S., Dickinson, W., Gardin, J., Griffin, M. L., Gourevitch, M. N., Haller, D. L., Hasson, A. L., Huang, Z., Jacobs, P., Kosinski, A. S., Lindblad, R., McCance-Katz, E. F., Provost, S. E., Selzer, J., Somoza, E. C., … Ling, W. (2011). Adjunctive counseling during brief and extended buprenorphine-naloxone treatment for prescription opioid dependence: A 2-phase randomized controlled trial. *Archives of General Psychiatry*, *68*, 1238-1246. doi:0.1001/archgenpsychiatry.2011.121.

Wendt, D. C. & Gone, J. P. (2017). Group therapy for substance use disorders: A survey of clinician practices. *Journal of Groups in Addiction & Recovery*, *12*, 243-259. doi:10.1080/1556035X.2017.1348280

Wetzel, H., Szegedi, A., Scheurich, A., Lörch, B., Singer, P., Schläfke, D., Sittinger, H., Wobrock, T., Müller, M. J., Anghelescu, I., & Hautzinger, M. (2004). Combination treatment with nefazodone and cognitive-behavioral therapy for relapse prevention in alcohol-dependent men: A randomized study. *Journal of Clinical Psychiatry*, *65*, 1406-1413. doi:10.4088/jcp.v65n1017

White, W. & Miller, W. (2007). The use of confrontation in addiction treatment: History, science and time for change. *Counselor*, *8*, 12-30.

Williams, M., Bowen, A., Atkinson, J. S., Nilsson-Schönnesson, L., Diamond, P. M., Ross, M. W., & Pallonen, U. E. (2012). An assessment of brief group interventions to increase

condom use by heterosexual crack smokers living with HIV infection. *AIDS Care*, *24*, 220-231. doi:10.1080/09540121.2011.597707

Wise, R. A. & Koob, G. F. (2014). The development and maintenance of drug addiction. *Neuropsychopharmacology*, *39*, 254-262. doi: 10.1038/npp.2013.261

Wolff, N., Huening, J., Shi, J., Frueh, B. C., Hoover, D. R., & McHugo, G. (2015). Implementation and effectiveness of integrated trauma and addiction treatment for incarcerated men. *Journal of Anxiety Disorders*, *30*, 66-80. doi:10.1016/j.janxdis.2014.10.009

Wolitzky-Taylor, K., Drazdowski, T. K., Niles, A., Roy-Byrne, P., Ries, R., Rawson, R., & Craske, M. G. (2018a). Change in anxiety sensitivity and substance use coping motives as putative mediators of treatment efficacy among substance users. *Behaviour Research and Therapy*, *107*, 34-41. doi:10.1016/j.brat.2018.05.010

Wolitzky-Taylor, K., Krull, J., Rawson, R., Roy-Byrne, P., Ries, R., & Craske, M. G. (2018b). Randomized clinical trial evaluating the preliminary effectiveness of an integrated anxiety disorder treatment in substance use disorder specialty clinics. *Journal of Consulting and Clinical Psychology*, *86*, 81-88. doi:10.1037/ccp0000276

Wolwer, W., Burtscheidt, W., & Redner, C. (2001). Outpatient behavior therapy in alcoholism: Impact of personality disorders and cognitive impairments. *Acta Psychiatrica Scandinavica*, *103*, 30-37.

World Health Organization (2005). *WHO drug information volume 19 number 3: Recommended INN list 54 international nonproprietary names for pharmaceutical substances*. Author. http://apps.who.int/medicinedocs/pdf/s7918e/s7918e.pdf

World Health Organization. Department of Mental Health and Substance Abuse (2009). *Guidelines for the psychosocially assisted pharmacological treatment of opioid dependence*. Author. Retrieved from: http://www.who.int/substance_abuse/publications/opioid_dependence_guidelines.pdf

Worley, M. J., Trim, R. S., Roesch, S. C., Mrnak-Meyer, J., Tate, S. R., & Brown, S. A. (2012). Comorbid depression and substance use disorder: Longitudinal associations between symptoms in a controlled trial. *Journal of Substance Abuse Treatment, 43,* 291-302. doi:10.1016/j.jsat.2011.12.010

Yalom, I. D. & Leszcz, M. (2005). *The theory and practice of group psychotherapy* (5th ed.). Basic Books.

Zlotnick, C., Johnson, J., & Najavits, L. M. (2008). Randomized controlled pilot study of cognitive-behavioral therapy in a sample of incarcerated women with substance use disorder and PTSD. *Behavior Therapy, 40*, 325-336.

APPENDIX A

Table 5
Excluded Articles

Author(s) and publication year	Reason for Exclusion
Akiyama et al. (2019)	Not group Tx as IV
Alessi et al. (2007)	Not comparing HR and Abstinence
Amaro et al. (2007)	Not comparing HR and Abstinence
Amaro & Black (2017)	No outcome measures of SUDs as DV; study protocol
Avants et al. (2004)	Insufficient data reported (*M*, *SD*)
Battjes (2004)	Not comparing HR and Abstinence
Bellack et al. (2006)	Not comparing HR and Abstinence
Bergman et al. (2014)	Not comparing HR and Abstinence
Boden et al. (2011)	Not comparing HR and Abstinence
Bougard et al. (2016)	No outcome measures of SUDs as DV
Bouis et al. (2007)	No outcome measures of SUDs as DV; not a comparative study
Bowen et al. (2009)	Not comparing HR and Abstinence
Bowen et al. (2014)	Not comparing HR and Abstinence
Brown et al. (2006)	Not comparing HR and Abstinence
Burrow- Sánchez & Hops (2018)	Not comparing HR and Abstinence
Calysn et al. (2010)	No outcome measures of SUDs as DV
Collins et al. (2012)	Not group Tx as IV
Collins et al. (2015)	Not group Tx as IV
Collins et al. (2019)	Not group Tx as IV
Cook et al. (2006)	No outcome measures of SUDs as DV
Covington et al. (2008)	Not comparing HR and Abstinence
Crits-Christoph et al. (2013)	No outcome measures of SUDs as DV
D'Amico et al. (2013)	No outcome measures of SUDs as DV
D'Amico et al. (2015)	Not comparing HR and Abstinence
D'Amico et al. (2017)	Not comparing HR and Abstinence
Daughters et al. (2017)	Not comparing HR and Abstinence

Dennis et al. (2004)	Not comparing HR and Abstinence
Desai et al. (2008)	Not comparing HR and Abstinence
Easton et al. (2007)	Not comparing HR and Abstinence
Empson et al. (2017)	Not comparing HR and Abstinence
Epstein et al. (20188)	Not comparing HR and Abstinence
Fallot et al. (2011)	Not comparing HR and Abstinence
Feaster et al. (2010)	Not comparing HR and Abstinence
Foster et al. (2016)	Not comparing HR and Abstinence
Frisman et al. (2008)	Not comparing HR and Abstinence
Garland et al. (2010)	Not comparing HR and Abstinence
Garland et al. (2016)	Not comparing HR and Abstinence
Gatz et al. (2007)	Not comparing HR and Abstinence
Ghee et al. (2009)	Not comparing HR and Abstinence
Greenfield et al. (2014)	Not comparing HR and Abstinence
Greenfield et al. (2018)	Not comparing HR and Abstinence
Hayes et al. (2004)	Insufficient data reported (*M*, *SD*)
Hien et al. (2009)	Not comparing HR and Abstinence
Hiller et al. (2006)	Not comparing HR and Abstinence
Hunter et al. (2012a)	Insufficient data reported (*M*, *SD*)
Hunter et al. (2012b)	Not comparing HR and Abstinence
Hustad et al. (2014)	No diagnosis of substance use disorder
Johnson & Zlotnick (2012a)	Not comparing HR and Abstinence
Johnson & Zlotnick (2012b)	Not comparing HR and Abstinence
Johnson et al. (2018)	Not group Tx as IV
Kelly et al. (2005)	Not group Tx as IV
Kelly et al. (2012)	Insufficient outcomes measure of SUDs as DV
Kleinpeter et al. (2009)	No outcome measures of SUDs as DV
Kushner et al. (2013)	Not comparing HR and Abstinence
LaChance et al. (2009)	No diagnosis of substance use disorder
Lander et al. (2015)	Not comparing HR and Abstinence
Lander et al. (2016)	Not comparing HR and Abstinence

Li et al. (2007)	Not comparing HR and Abstinence
Liddle et al. (2009)	Not comparing HR and Abstinence
Ling et al. (2013)	Not comparing HR and Abstinence
Lydecker et al. (2010)	Not comparing HR and Abstinence
Margolin et al. (2005)	Not comparing HR and Abstinence
McGovern et al. (2015)	Not group Tx as IV
McHugh & Greenfield (2010)	Not comparing HR and Abstinence
McHugh et al. (2020)	Not comparing HR and Abstinence
Meade et al. (2010)	Insufficient data reported (*M*, *SD*)
Messina et al. (2012)	Not comparing HR and Abstinence
Milby et al. (2005)	Not group Tx as IV
Mitchell et al. (2013)	Not comparing HR and Abstinence
Nyamathi et al. (2010)	Insufficient data reported (*M*, *SD*)
Nydegger et al. (2013)	No outcome measures of SUDs as DV
O'Farrell & Schein (2011)	Not comparing HR and Abstinence
O'Farrell et al. (2016)	Not comparing HR and Abstinence
Paddock et al. (2014)	Insufficient data reported (*M*, *SD*)
Patchell et al. (2015)	Not group Tx as IV; prevention
Petry et al. (2010)	Not comparing HR and Abstinence
Petry et al. (2011)	Not comparing HR and Abstinence
Petry et al. (2013)	Not comparing HR and Abstinence
Pugatch et al. (2014)	Not comparing HR and Abstinence
Raisch et al. (2012)	No outcome measures of SUDs as DV
Rengifo & Stemen (2009)	No outcome measures of SUDs as DV
Rohsenow et al. (2004)	Not comparing HR and Abstinence
Schwartz et al. (2016)	Insufficient data reported (*M*, *SD*)
Searcy & Lipps (2012)	Not comparing HR and Abstinence
Shorey et al. (2017)	Not comparing HR and Abstinence
Siegel et al. (2017)	Not comparing HR and Abstinence
Smith et al. (2006)	Not comparing HR and Abstinence
Smock et al. (2008)	No outcome measures of SUDs as DV

Stauffer et al. (2019)	No outcome measures of SUDs as DV; study protocol, not a comparative study
Stein et al. (2014)	No outcome measures of SUDs as DV
Swopes et al. (2017)	Not comparing HR and Abstinence
Toussaint et al. (2007)	Not comparing HR and Abstinence
Tross et al. (2008)	No outcome measures of SUDs as DV
Valeri et al. (2018)	Not comparing HR and Abstinence
Watkins et al. (2011)	Insufficient data reported (*M*, *SD*)
Weiss et al. (2011)	Not group Tx as IV
Williams et al. (2012)	No outcome measures of SUDs as DV
Wolff et al. (2015)	No outcome measures of SUDs as DV
Wolitzky-Taylor et al (2018a)	Not comparing HR and Abstinence
Wolitzky-Taylor et al (2018b)	Not comparing HR and Abstinence
Worley et al. (2012)	Not comparing HR and Abstinence
Zlotnick et al. (2008)	Not comparing HR and Abstinence

VITA

JILL D. PARRAMORE
Old Dominion University
Darden College of Education & Professional Studies
Department of Counseling & Human Services
2100 New Education Building
4301 Hampton Boulevard
Norfolk, Virginia 23529
757-683-3326 (office)
757-683-5756 (fax)

EDUCATION

2020 Doctor of Philosophy in Education, concentration in Counseling. GPA 3.96
Old Dominion University, Anticipated graduation May 2020. Dissertation title:
Group Treatment Effectiveness for Substance Use Disorders: Abstinence vs. Harm Reduction

2015 Master of Science in Education, concentration in Counseling. GPA 3.96
Old Dominion University, Specialized in Clinical Mental Health.

2013 Bachelor of Science in Psychology, Business Administration minor. GPA 3.74
Christopher Newport University, Senior Seminar topic: *The Matching Law* (Herrnstein, 1961).

2011 Associate of Science in Business Administration, GPA 3.96
Tidewater Community College

CERTIFICATIONS

2018 Licensed Professional Counselor
2018 National Certified Counselor
2017 Certified Substance Abuse Counselor

ACADEMIC EXPERIENCE

Old Dominion University: Department of Counseling and Human Services. Norfolk, Virginia

2017-2016	Director of Human Services Advising
2016	Academic Advisor in Human Services
2016	Study Abroad at Trinity College in Dublin, Ireland. Multicultural doctoral-level course. Presentation: Beyond the Traditional Model: Counseling Women and Men
2017-2015	Graduate Teaching Assistant
Spring	Master's program counseling course Introduction to Substance Abuse (co-teach)
Fall	Human Services online courses (2) Career Development & Appraisal (co-teach)
Summer	Human Services online course Career Development & Appraisal (co-teach)
Spring	Human Services course Interpersonal Skills (Instructor of Record)
Fall	Human Services course Interpersonal Skills (co-teach)
2015-2013	Graduate Research Assistant, Graduate Teaching Assistant, and Administrative Assistant in the Department of Counseling and Human Services

CLINICAL EXPERIENCE

2020-2019	Clinical Associates of Tidewater	Newport News, Virginia
2018	The Farley Center	Williamsburg, Virginia
2018-2017	Right Path Addiction Centers	5 locations in Virginia
2017-2016	Virginia Beach Counseling and Wellness	Norfolk, Virginia
2017-2014	Norfolk Community Services Board	Norfolk, Virginia
2014	Optima Employee Assistance Program	Virginia Beach, Virginia