COMPARING THREE COGNITIVE BEHAVIOR THERAPY MODALITIES FOR TREATING SUBSTANCE USE DISORDER

Doctoral Project

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Timothy James Lyons

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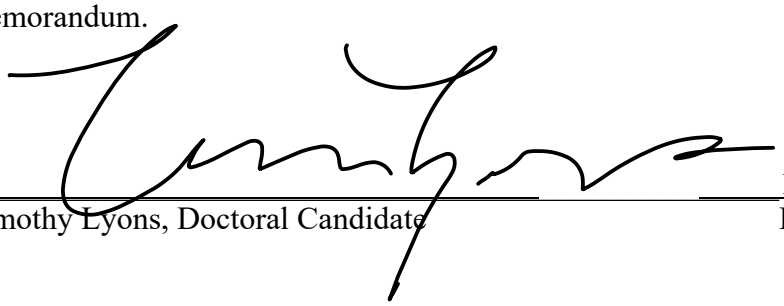

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Doctoral Candidate: Timothy Lyons

Title of Doctoral Project: Comparing Three Cognitive Behavior Therapy Modalities for Treating Substance Use Disorder

Doctoral Project Committee:

Timothy J. Legg, PhD

Signed: DocuSigned by: Timothy J. Legg, PhD, PsyD 9BB7B4E080EA40E... 11/18/2020

Project Chair Date

Patrick McKiernan, PhD

Signed: DocuSigned by: Pat M 8916C661813947D... 11/18/2020

Committee Member Date

Casey Mace Firebaugh, PhD

Signed: DocuSigned by: Casey Mace Firebaugh 559875A796264FB... 11/15/2020

Committee Member Date

Alpa Bajaj, PsyD

Signed: DocuSigned by: Dr. Bajaj 637ED2D8974G476... 11/18/2020

Associate Dean, School of Behavioral Sciences Date

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ABSTRACT

Substance use disorder (SUD) treatment should be delivered more effectively by using evidence-based interventions. Interventions from a large body of evidence that have shown greater efficacy are underutilized. Continual study to gather evidence for the most efficacious treatments is necessary to improve treatment outcomes. This study was a qualitative systematic literature review. This study used no live participants due to this study's theoretical nature and subsequent qualitative systematic literature review. Participants were identified through deliberate or convenience sampling by homogenous shared attributes of participants who had some diagnosis for a SUD and who had been in some form of SUD treatment that included at least one of the modalities, Acceptance and Commitment Therapy (ACT), Dialectical Behavior Therapy (DBT), or Rational Emotive Behavior Therapy (REBT). The design of this study was to look for evidence of efficacy in treatment outcomes for ACT, DBT, and REBT by researching the areas of a reduction of DSM 5 symptoms, improvement in quality of life, and increased days of abstinence. This qualitative systematic literature review examined factors to determine which modality provided more effective treatment outcomes. The evidence pointed to areas of strengths for each of the modalities and suggested that treatment should include a multimodal approach while maintaining the fidelity of each modality. A growing body of evidence shows that combining treatment modalities is more effective, and this evidence has implications for the SUDT field.

Keywords: Substance use disorder treatment, cognitive behavioral therapy, Acceptance and Commitment Therapy. Dialectical Behavior Therapy, Rational Emotive Behavior Therapy

TABLE OF CONTENTS

CHAPTER ONE

OVERVIEW OF THE STUDY

SAMHSA (2019) estimates that by 2017, as many as 19.7 million persons in the United States had a diagnosable substance use disorder (SUD). Approximately 4 million of those persons received some form of treatment for their problems. The National Institute of Drug Abuse (2018) publicized outcome measures for studies that looked at substance use disorder treatment (SUDT)'s efficacy. Relapse rates after treatment were between 40% and 60%. One component of these outcomes' effectiveness was evidence-based (EB) treatments that showed effectiveness based on improved outcomes. Miller, Walters, and Bennett (2001) reviewed seven studies on the efficacy of SUDT for alcohol, which included 8,389 participants. This study reported that 1 out of 4 clients had ceased alcohol use. Another 1 in 10 had relapsed but had made a significant improvement or had lessened alcohol use. Abstinence rates after one year were only 33%. The remaining two-thirds showed some improvement with fewer days of drinking but had relapsed. Weiss et al. (2015) analyzed data from the Prescription Opioid Addiction Treatment Study (POATS), conducted by the National Drug Abuse Treatment Clinical Trials Network in a longitudinal study with outcomes measured to 42 months post-treatment. 31.7% of the patients had stopped using opiates and 29.4% of the patients did not meet the criteria for SUD while using opioid agonist medication-assisted treatment (MAT). The remaining 38.9 percent of the patients had worsened symptoms due to relapse and continued use of illicit opiates. With reported post-treatment relapse rates as high as 60%, the treatment being given must be as effective as possible.

The Institute of Medicine (2006) contended that treatment given to persons with SUD for alcohol was congruent with scientific knowledge only 10.5% of the time, and the effectiveness of

treatment can be as low as 40%. The same study asserted that pairing EB modalities and interventions is imperative to statistically significant improvement treatment outcomes. The Casa Columbia research report analyzed more than 7000 scientific articles, reports, books, and materials related to SUD, performed a secondary analysis of 5 national databases, and interviewed 176 researchers, physicians, and other health professionals in the field of addiction. This report gathered information from focus groups involving 1303 individuals, surveyed 1142 members of professional associations involved in the SUDT field, and surveyed 83 program directors and 141 treatment provider staff from in New York state. CASA Columbia National Advisory Commission on Addiction Treatment (2012) suggested that treatment interventions should be empirically validated EB treatment. The report found that only a small percentage of people received treatment with interventions from a large body of evidence that showed efficacy. As early as 1992, Guyatt et al. proposed guidelines for identifying that EB practices should be used in treatment. These guidelines are continually refined per Waller and Turner (2016), which purports that interventions should be those that can be applied to and affect the presenting problem. Interventions should result from studies that provide evidence of efficacy while basing the use of therapies upon their strengths, such as continued client engagement and that are determined to be valid to be generalized.

Background of the Problem

SAMHSA (2019) defines SUD as a chronic relapsing disorder involving drug abuse, which continues despite severe consequences. It is a disorder of the brain that is considered a mental illness. The repeated administration of drugs of abuse physiologically change the brain and are the causation of SUD. SUD is a severe problem in society. Per Daley (2013), SUD intersects with society's medical, psychiatric, economic, and social areas. Further, it involves

high suicide rates, accidents through risky behaviors, can cause disability, is a partner to numerous psychiatric conditions, and is linked with criminal activity, incarceration, and high disease transmission rates.

The number of persons using substances of abuse worldwide has reached epidemic proportions. Degenhardt and Hall (2012) reported that one in twenty persons between the ages of 15-64 had used an illicit substance in the past year. A majority of the use of drugs with abuse potential is from alcohol and marijuana, and the minority of persons who use drugs of abuse do so with illicit substances. This minority creates the most significant burden to society through their dependency due to deleterious medical conditions such as HIV and Hepatitis.

It is critical in the substance use disorder field to provide therapeutic interventions that are EB. From an economic standpoint, National Institute on Drug Abuse (2018) shows that for every dollar invested in EB treatment, there is a corresponding reduction in healthcare, accidents, overdoses, and criminal activity of approximately $12. The Institute of Medicine (2006) notes that ineffective care delivery has negative consequences for persons in treatment, their families, and society, calculating that only 27% of treatment services provide clinical practices based on evidence.

Bradbury (2019) declared that the design of treatments for persons with SUD enhances emotion regulation, changes behavior, targets irrational thoughts, and changes perceptions. SAMHSA (2019) promotes the use of EB practices. EB practices are interventions that have demonstrated a statistically significant effect on SUDT outcomes. Using EB practices is first identified in the literature by Guyatt et al. (1992). This study posited that it is necessary to search the literature on the subject, choose those interventions that are the most appropriate based on validity and their strengths and weaknesses, and then apply those interventions to the patient

problem to provide EB practices. Outcomes should bring about recovery in the form of use cessation or reduced consumption, improved quality of life through better health and wellness. The definition of improved quality of life is a life that is enjoyable with reduced effect of aversive emotional and cognitive states, including growth and development, balance, and improved emotion regulation in response to life situations while allowing one to take personal responsibility. Twenty-five years later, Djulbegovic & Guyatt (2017) reported that providing EB practices in this way still holds. The study points out that this model of delivering EB practices have become essential in training young clinicians. This type of focus on EB modalities has brought about better research standards, more trustworthy evidence, and improved EB practices quality. It has resulted in a better empirical basis for the practice of EB interventions.

Studying and then applying EB treatments can overcome the perception that treatment is not adequate, as discussed in the CASA Columbia National Advisory Commission on Addiction Treatment (2012). The quality of interventions currently offered warrants this belief. This study asserted that the SUDT workforce is unqualified to deliver EB practices; however, determining which methods are the most effective and training workers to provide those services can overcome this deficit.

There is a positive correlation between treatment length and positive outcomes for treatment. Baker et al. (2019) note that studies point to a three-month treatment length at minimum to address this issue. It conveys the idea that treatment outcomes improve over a greater length of treatment stays. The problem is not that treatment lengths do not improve outcomes but rather that treatment compliance and dropout rate impede treatment length efficacy. Karekla, Constantinou, Ioannou, Gloster, and Kareklas (2019) describe drop-out as a crucial issue in SUDT. Factors that affected the treatment length were providers' level of

experience, treatment protocol, and type. One way to mitigate this issue and improve treatment engagement to increase the length of stay (LOS) and treatment completion is by improving therapy factors through training with EB practices, using appropriate treatment protocol and type. Studying efficacy outcomes will identify these factors. To this end, it is imperative to educate treatment providers in the best that evidence has to offer and allow them to choose those treatments that are most efficacious.

According to Glasner-Edwards and Rawson (2010), EB treatments are an extension of scientific studies with applications based on that research. A gap between research and clinical application pushes the use of EB practices. In many cases, legislation and programs demand EB interventions to increase treatment effectiveness use of EB practices.

Project MATCH tested the hypothesis that clients could be matched with specific interventions to increase outcome measures, according to Cutler and Fishbain (2005). This study had flaws and concluded that choosing specific interventions for clients through matching does not make treatment more effective. Further, the study showed that the treatment modalities chosen were not more effective than no treatment. This study's implications would imply that it is necessary to find better treatments that produce a statistically significant effect on outcomes post-treatment.

According to Yule and Kelly (2019), SUD treatment is performed based on the acuity of symptoms. This criteria set has moved the SUDT industry into clinically outcome-driven treatment through EB practices. It has become essential to identify the acuity of treatment to put forth the most effective treatments available. Factors related to symptom type and acuity, illness severity, the chronicity of symptoms, and co-occurring issues should be the basis for treatment recommendations. Although matching levels of care have shown little evidence for ASAM

criteria, some theories that have been studied and provided empirical evidence have given rise to variable level continuum care that has impacted the application of EB interventions. The criteria set forth matches patients to levels of care with rules such as placing the patient in the appropriate level of care after a multi-dimensional holistic assessment (Rutten, Broekman, Van Den Brink, & Schippers, 2017).

One aspect of this matching is influenced by physiological changes that occur due to allostatic changes in brain regions in response to repeated administrations of substances of abuse. These repeated administrations are discussed in Volkow and Morales (2015) when drug use continues despite substantial problems. This theory's basis comes from a learned behavioral response that pairs withdrawal from discontinuation with continued use to counteract the distress. According to SAMHSA (2015), symptomology is the basis for the care setting level, also known as symptom triggered therapy. Placement occurs at the highest levels of care when using withdrawal rating scales that indicate whether a patient should receive medication-assisted treatment. This treatment deals with symptoms. Doctors taper the withdrawal using medications until the patient can move to a lower level of care where psychosocial interventions can be introduced (SAMHSA, 2015; Volkow & Morales, 2015)

There are many treatment modalities used in treating SUD that have been studied through the scientific method. One family of psychological treatments comes from a line of cognitive-behavioral therapies (CBT) with an extensive empirically supported background. The family of therapies has distinct generations or waves (Hayes & Hofmann, 2017). Within these waves are specific modalities that are effective with several different psychological issues. Three of these modalities have shown effectiveness in the treatment of SUD.

Rational Emotive Behavior Therapy (REBT) was developed in the 1960s by Albert Ellis. Per Oni-Nwosu, Baleguel, Nwafor, and Onyemaechi (2019), this therapeutic intervention's basis is from the theory that people develop SUD from their irrational beliefs that generate pathological behaviors. Techniques to eliminate irrational thoughts include learning to identify irrational thinking patterns and learning how to appraise events differently. Once these events become more objective, the person with a substance use disorder can give up pathological behavioral responses and reduce substance use.

Another treatment that has been shown to be effective with substance use disorder and is part of the CBT family is Dialectical Behavior Therapy (DBT). According to Linehan and Wilks (2015), DBT is a modular and hierarchical treatment that combines several components to deal with SUD. Counselors teach skills to clients who suffer SUD. Distress tolerance skills help the client to use prosocial coping strategies. Community reinforcement, trying to replace previous social attachments, an alternative rebellion that is giving permission to rebel in non-harming ways, and progressive relaxation are DBT skills taught to assist with substance use disorder.

A third treatment that also falls under the family of CBT is Acceptance and Commitment Therapy (ACT). Farhang, Ghaderi, Soleimani, and Arabshahi (2017) provide an overview of ACT as a mindfulness-based behavior therapy that has shown to be effective in helping people deal with substance use disorder. ACT's core idea is to allow a person to be consciously present and engage in prosocial behaviors while noticing aversive internal thoughts and emotions and allowing them to take place without any other intervention. These new behaviors are contrary to the pathological destruction during active substance use disorder and are used to treat substance use disorder.

Those persons receiving treatment deserve to learn tools that have the best outcomes for treatment. The result would create better treatment outcomes and may increase the number of persons who enter treatment. Turner (2014) outlines that EB practices and their application are provided with thought, using the best evidence from reliable and valid research to provide care for the individual. Essentially, it is the application of clinical interventions using clinical expertise and established from external systematic research.

Statement of the Problem

Relapse rates post-treatment for SUD can be more than 60% (SAMHSA, 2019; Miller, Walters, & Bennett, 2001). According to the CASA Columbia National Advisory Commission on Addiction Treatment (2012), only a small percentage of persons receiving treatment had received EB treatment due to a SUDT workforce unqualified to deliver EB practices. A component of SUD's more successful treatment outcomes is EB practices (National Institute on Drug Abuse, 2018). Using EB interventions is critical to improving treatment outcomes (Institute of Medicine, 2006). Kelly, Heath, Howick, and Greenhalgh (2015), asserted that EB practices have assisted advances in treatment and have provided clinicians with the ability to differentiate between the most helpful techniques. Blease, Kelley, and Trachsel (2018) noted an essential ethical component for clinicians to provide information regarding treatment outcomes. Treatment providers must have the education and be qualified to deliver evidence-based practices that have been shown through empirical data to be more effective (CASA Columbia National Advisory Commission on Addiction Treatment, 2012). According to Wendt and Gone (2017), new EB practices may be problematic due to firmly established approaches and counseling staff beliefs about using EB practices influenced by pessimism or ambivalence. Further study, comparing the effectiveness of EB treatments for SUD, can facilitate their implementation in treatment settings

by training the SUDT workforce to deliver EB treatments and by allowing clinicians to introduce SUDTs that are the most valid and efficacious.

Purpose of the Study

This theoretical study aimed to compare the effectiveness of three cognitive-behavioral therapy (CBT) interventions used to treat substance use disorder. A qualitative systematic literature review helped clarify which of these SUDTs had greater evidence for efficacy, thus optimizing clinical care. The study impacted SUDT by providing clinical practice guidelines for appropriate clinical interventions that help individuals improve their health and wellness, live a self-directed life, change behavior while remaining abstinent, reduce disease severity, enhance emotion regulation, and target irrational thoughts. This study improved the practice of SUDT (Djulbegovic and Guyatt, 2017; Ling, Farabee, Liepa, & Wu, 2012; Guyatt et al., 1992).

Since one factor in clients not receiving EB treatment is ill-prepared and poorly trained counselors, as suggested in the CASA Columbia National Advisory Commission on Addiction Treatment (2012), identifying effective EB practices helped overcome this barrier to EB treatment delivery. Consistent with Djulbegovic and Guyatt (2017), studying treatments using EB practices is essential for training clinicians and improves critical thinking and reasoning.

It was important to note that several modalities are effective in treating substance use disorder. For instance, Pace et al. (2017) indicated that there is consistent evidence that motivational interviewing, when used in SUDT, can effectively reduce language known as sustain talk. This type of speech can keep a person in constant substance use due to how they speak about using. In another study, Kelly et al. (2016) studied twelve-step facilitation (TSF). In one 8-year prospective study, TSF had shown an average of two additional days of abstinence from substance use for every 12-step group attended by persons treated with TSF. Novel

treatments present as essential areas of study in the treatment of SUD. However, this project's scope will be limited to these modalities that originate from the CBT lineage.

This study compared three different cognitive-behavioral therapy versions to determine the most evidence for efficacy in treatment outcomes, improved quality of life, and increased abstinence post-treatment length. The three types of CBT examined were: Acceptance and Commitment Therapy (ACT), Dialectical Behavior Therapy (DBT), and Rational Emotive Behavior Therapy (REBT).

By evaluating the evidence base for these methodologies, accessible knowledge was translated into clinical application and helped clinicians make informed decisions about evidence-based interventions (McLellan, 2017). McLellan proposed that the clinical application of treatment modalities with the greatest evidence for efficacy would result in longer periods of abstinence post-treatment, reduced symptoms, and improved quality of life.

Research Questions

This evaluation was conducted through a thorough analysis of the literature using the following research questions (RQ):

RQ1. Which treatment modality: REBT, ACT, or DBT had greater published evidence for efficacy in SUDT as defined by a reduction in DSM 5 criteria symptoms for substance use disorder?

RQ2. Among REBT, ACT, and DBT for SUDT, which treatment modality had been associated with the highest level of evidence of improved quality of life as defined by improvements in health and wellness, increased social networks, improved emotion regulation, and reduction in irrational thinking?

RQ3. What were the differences in SUDT effectiveness regarding increased abstinence days prior to relapse between REBT, ACT, and DBT when compared?

Theoretical Framework

Cognitive-behavioral psychology is the framework of this study. This study compared three unique approaches to CBT to improve treatment delivery and outcomes by increasing evidence-based practices and improving SUDT success rates.

ACT, DBT, and REBT are three modalities subsumed under the theoretical orientation known as cognitive-behavioral therapy (CBT) and have been used to treat SUD. According to Carvalho, Martins, Almeida, and Silva (2017), CBT's origins can be traced to the first wave of clinical interventions that utilized operant learning and classical conditioning. The Second wave CBTs focus on the subject's perception of information that is processed. This second wave added to the first wave and sought to change one's perception of events. Third-wave CBTs focus on context and experience. Rather than changing perception, the intervention changes the context of the interaction between the subject and the processed information. Hayes, Strosahl, and Wilson's (2012) version of ACT, Marsha Linehan's version of DBT described in Wilks et al. (2018), and Albert Ellis's version of REBT from Ellis and Ellis (2014), were the theoretical lenses that guided this qualitative systematic literature review.

In describing cognitive-behavioral psychology interventions, it is essential to look at the behavioral repertoire that has become limited due to the brain's physiological changes. The limited repertoire is indicative of persons who have a SUD (Winger, Woods, Galuska, & Wade-Galuska, 2005). One of CBT's underlying principles is to target and modify thinking and behaviors altered due to repeated administration of drugs of abuse (Bradbury, 2019). It was

essential to differentiate these three modalities by their theoretical explanations of SUD and how they treat SUD to facilitate this study.

Acceptance and Commitment Therapy

Svanberg, Munck, and Levander (2017) described ACT's view of SUD through experiential avoidance. The behaviors in that one engages are in service of avoiding aversive internal stimuli (thoughts and emotions), that then become pathological and self-harming due to the use of substances. ACT views this as being psychologically inflexible. ACT treats SUD by promoting psychological flexibility. Psychological flexibility is accomplished by assisting individuals in contacting, noticing, and allowing internal events, thus changing the relationship with these events. The learner is also assisted with becoming aware of, defining, and engaging in purposive behaviors that move toward internally chosen values that result in salient rewards. ACT's use of mindfulness practices are the reason ACT is a third wave CBT (Brown, Gaudiano, & Miller, 2011).

Dialectical Behavior Therapy

Dimeff and Linehan (2008) proposed that people who engaged in SUD pathologies do not have the essential skills to solve problems. SUD is born out of a person's desire to control internal emotions while using ineffective control strategies. DBT uses dialectics (The word *dialectic* refers to the synthesis of two opposites) to treat SUD. All thoughts have opposing views, and those opposites are to be held at the same time. Challenging persons with SUD to change their behaviors causes them to shut down. Teaching them to accept and allow thoughts and emotions causes them to believe the therapist is ignoring or minimizing their suffering. In this case, the dialectics dictate SUD's treatment is to teach internal acceptance while pushing for behavior change. This stance includes introducing the idea of dialectical abstinence. The

clinician pushes for complete use cessation while allowing a relapse to be an integral part of the learning process. The acceptance tool and the idea of opposing ideas as both true are mindfulness. These practices are an addition to second wave CBT practices and push DBT into third-wave CBT (Brown, Gaudiano, & Miller, 2011).

Rational Emotive Behavior Therapy

Mhlungu (2018) reported that REBT views SUD as an interaction between thoughts and behaviors. This interaction is described in REBT as the ABCs. A, which signifies the participant perceives the activating event through the B, the belief about the possibility that creates C, the consequence is the emotional and behavioral fallout from the belief. The pathological behaviors are driven by irrational beliefs that, in turn, produce unwanted behaviors and emotions. A person diagnosed with SUD has perceptions and beliefs about events that are polarized and unobjective. For instance, if a person thinks and believes the thought that they are a mistake in this world, this can result in maladaptive coping behaviors to decrease or eliminate the thought. They lack the skills to cope with thoughts and emotions that lead them to engage in self-defeating behaviors. REBT teaches the client to challenge, contradict and reframe (Reframe is the process of changing the thought to increase objectivity) the irrational perceptions to reduce aversive emotions and pathological behaviors. Visualizations of positive outcomes, positive affirmations, and rewards for prosocial behaviors combine to increase effectiveness. REBT's core idea that has the client reframe their perceptions places it squarely in second-wave CBTs (Brown, Gaudiano, & Miller, 2011).

In all three modalities, the interventions are similar in that they are used to target both thoughts and behaviors as described above; however, how the interventions accomplish this are different (Carvalho, Martins, Almeida, & Silva, 2017).

The overarching treatment philosophy of using CBT modalities to mediate relations between a subject and their thoughts and emotions to promote and allow behavior change guided this search. The lens of the theoretical orientation for each modality presented was the determining factor for literature inclusion. These improved chances of successful treatment outcomes for persons with SUD. Changing behaviors that include reducing DSM 5 criterion symptoms improve quality of life and lengthier days of abstinence reduced pathologies.

Significance of the Study

As the rate of persons with diagnosable SUDs continues to remain high, there is a need for promising interventions that change and improve reported outcomes that show relapse rates as high as 60% (National Institute on Drug Abuse, 2018). This systematic literature review joined institutions such as SAMHSA (2019) and the National Institute on Drug Abuse (2018) in furthering the science of SUDT by measuring the efficacy and caliber of interventions that, in turn, improve strategies in the treatment of SUD. It offers clinicians the ability to use comparisons between the interventions studied, choose training in those modalities that show a reduction in symptoms, improve quality of life, increase treatment completion rates, provide tools to lessen SUD's effects, and increase abstinence days. Clinicians will notice areas of improvement in their clinical process to provide better interventions while ameliorating the impact of inadequate training noted in CASA Columbia National Advisory Commission on Addiction Treatment (2012), by guiding better choices when a clinician or their supervisors are seeking training. There will be a benefit to the nearly 20 million persons that SAMHSA (2019) reports as suffering from SUD to receive more effective treatment. These persons will receive effective interventions and interact with clinicians who have chosen more effective modalities.

Further, as persons with SUD receive EB services, there will be a reciprocal benefit for families, friends, social circles for both clients and families that will also increase completion and provide significantly more successful SUDT outcomes (McPherson, Boyne, & Willis, 2017).

Limitations and Delimitations of the Study

The focus and design of the original research, followed by researchers' conclusions based on this data, were limitations. A theoretical approach did not allow a test of the initial research questions. Any errors contained in previous studies transferred to the project. The outcomes and findings provided by other researchers limited the quality of conclusions drawn from this study. This qualitative systematic literature review did not have access to original data collected for the studies that were part of the exhaustive literature search. Any assumptions might have been skewed based on this lack of access. The ability to gain an accurate and intuitive understanding of the original data did not exist. The training and education level of treatment providers can influence the outcome

Delimitations to this qualitative systematic literature review approach existed. The review was focus on outcome measures for three interventions used in SUDT. Numerous evidence-based practices could have been used in the treatment of SUD. Many studies exist proving the efficacy of those treatments. This qualitative systematic literature review was not a study on an exhaustive list of treatment modalities. This study focused on the effectiveness of treatment based upon outcomes that include improving quality of life, reducing symptoms as defined by the DMS 5 for diagnosing a substance use disorder, and days of abstinence. It was possible that other measures could have proven the efficacy of a particular treatment, but this was beyond this article's scope and was not included.

Definitions and Key Terms

Abstinence. Harrison et al. (2018) define abstinence as the cessation of substance use. Many recovery communities belive that use cessation is necessary to achieve long-term recovery from SUD. This long-term recovery includes behavior change achieved through abstinence from all drugs of abuse.

Acceptance. Farhang, Ghaderi, Soleimani, and Arabshahi define acceptance as making room for painful or unwanted private experiences such as aversive thoughts, emotions sensations, urges, or cravings, noticing and allowing those internal events to exist without struggling with them while accepting once own circumstance (2017).

Cognitive behavior therapy. Gaudiano (2008) defines cognitive behavior therapy as a general term that subsumes several similar treatments with familial-like related interventions joined by similar underlying principles and assumptions. The common factors that have come to link the therapeutic interventions under this umbrella are the following: These interventions are short term and structured and easily investigated through scientific inquiry. They can be used to treat several different pathologies. These interventions have a basis from the assumption that faulty information processing results in psychopathology. The relationship between a person, their cognitive processes, and how they view those processes is the root of problematic behaviors.

Cravings. Shorey et al. (2017) cite research that defines cravings as a subjective experience regarding an intense desire to ingest drugs of abuse. The present study will also define cravings represented by physical sensations, intruding thoughts, highly charged emotional states, or any mixture of these components.

Defusion. The learned ability to create distance from internal and external experiences without getting stuck. The ability to look at thoughts and emotions rather than from them. (Hayes, Strosahl, & Wilson, 2012; Rolffs, Rogge, & Wilson, 2018)

Dialectic. Dialectic is defined by Dimeff and Linehan (2008) as the synthesis of two opposites. It is a frame of reference that holds that two opposites can be true simultaneously. Dialectics holds that no point of view is final or indisputable as a fact.

Emotion regulation. Emotion regulation is a set of behaviors that allow for effective control of emotional states. (Tang, Tang, & Posner, 2016; Buckholdt et al., 2015). Sloan et al. (2017) describe emotion regulation as a diagnostic construct, the lack of which underlies psychopathology but is implicated in developing unified treatments that target issues such as SUD.

Experiential avoidance. Shorey et al. (2017) define experiential avoidance as the phenomenon when a person is unwilling to remain in contact with an internal private event, such as a thought or emotion, due to the perception of it being aversive or unbearable and then engages in behaviors to change the form or rate of occurrence of that event even though the behavior may cause harm to the individual. Repeated administrations of experiential avoidance may result in, maintain, or make worse mental health disorders, including SUD.

Irrational beliefs. Turner (2016) defines irrational beliefs as a set of evaluative cognitions or perceptions that are a way in that a person looks at events. These represent a concept of reality and, in turn, generate responses to that reality. These beliefs lead to unhealthy consequences such as negative emotional states and pathological behaviors that cause underlying mental health disorders. Irrational beliefs are rigid, polarizing, do not make sense in the harm they cause and do not follow the logic.

Mindfulness. Mindfulness is a complex idea that requires one to intentionally attend to internal and external experiences through the lens of non-judgment while in a nonreactive state of awareness—further defined by present-moment awareness, nonjudging, and nonreactivity (Baer, 2019). Veehof et al. (2016) also define mindfulness as a concept with many facets composed of observing without reacting and noticing and allowing without judgment.

Psychological flexibility. Veehof, Trompetter, Bohlmeijer, and Schreurs (2016) report the definition of psychological flexibility is a person's ability to engage in behavior while remaining in the present moment and in contact with thoughts and emotions. This contact occurs while the person attends to opportunities present within the moment and allows movement toward realizing life goals despite the nature of the thoughts and emotions.

Relapse. Melemis (2015) defines relapse as a gradual process with distinct stages that, when left unattended, can result in the reintroduction of a substance of abuse.

Substance use disorder. Volkow, Koob, and McLellan (2016) describe substance use disorder as a term defined in the Diagnostic and Statistical Manual of Mental Disorders fifth edition (DSM-5) that refers to a set of diagnostic criteria that are thoughts, behaviors, and physical symptoms that result in clinically significant pathological impairment. The American Psychiatric Association (2013) notes that the individual will use substances even though substance use causes significant problems.

Values. Rolffs, Rogge, and Wilson (2018) defined values as chosen and purposeful life areas that guide behaviors.

Organization

Chapter one provided details of the research topic, discussed how the research will expand comprehension in psychology, and which people will benefit from the exploration.

Chapter two presented a literature review of the efficacy of interventions for SUDT based on three different CBT modalities. This chapter contained the identification of methodological problems with the reviewed studies, areas of controversy, and tied past research with the current study. Chapter three discussed the methodology used to answer the research questions posed in chapter one and further described the participants, including how the previous data was collected and analyzed. It contained the theoretical assumptions and explained how the theoretical research approach is appropriate to answer the research questions. Chapter four presented the results of the study by providing answers to the research questions posed. It also summarizes the findings from the qualitative systematic literature review and analysis while providing enough detail so that the reader could make an informed judgment about the research. Chapter five discussed the findings of the study, considered limitations, and drew inferences for other professionals. It made recommendations for future research and contained a conclusion for the study.

CHAPTER TWO

REVIEW OF THE LITERATURE

Of the nearly 20 million persons whom SAMHSA (2019) estimated as having a diagnosable substance use disorder in 2017, about 20% will have received some form of treatment. According to The National Institute of Drug Abuse (2018), between 40 and as high as 60% of those treated will end up relapsing. The outcomes tended to be better with the use of evidence-based practices. Whiteford, Ferrari, and Degenhardt (2016) and Patel et al. (2016) report that SUD accounts for one in every ten disability-adjusted life years lost globally and are one of the leading causes of disability globally.

Due to this crisis, it was essential to address SUD's issue with the best treatments based on empirical evidence. Substance use disorder and how professionals diagnose it was the focus of this chapter. In addition, there was a discussion of how SUD interacts with other mental health problems and how SUD was associated with EB practices. The outcome measures were defined, and guidelines for identifying EB practices preceded a thorough literature review to ascertain the effectiveness of REBT, DBT, and ACT in the treatment of substance use disorders. The systematic literature review examined the efficacy of these treatments based on three distinct qualifying measures. The first search of the literature compared the effectiveness of these treatments on their ability to reduce DSM 5 criteria symptoms for substance use disorder. The second measure of efficacy was outcomes based on improved quality of life as defined by improvements in health and wellness, increased social networks, improved emotion regulation, and reduced irrational thinking. The third measure of efficacy involved the increased days of abstinence following treatment.

SUD Defined

Substance use disorder is defined by many factors that are primarily behavioral issues and involve substance abuse. Chamberlain and Grant (2016) discuss this as decision-making impairments that tend toward risky behaviors that are part of a series of psychiatric symptoms or cognitive impairment. The impairments are physiological changes in many brain areas, such as damage to the prefrontal cortex, allowing for impulsive behaviors. There can be problems with comprehending reward salience, behavioral inhibition issues, maladaptive coping strategies, and cognitive distortions. The symptoms involve substance intake that escalates over time.

Further, Chamberlain and Grant found that objective decision-making deficits correlated with the diagnosis of SUD. Koob and Volkow (2016) represent addiction from a physiological perspective. The defining factors are dysregulation of reward and motivational circuits of the brain from the habitual use of substances of abuse. This use produces problems of reward salience comprehension, attenuated executive functioning, and stress dysregulation. The prefrontal cortices change in three stages. Drug-seeking habits begin in the binge/intoxication stage, followed by negative emotional states in the withdrawal/negative affect stage and last, cravings, and compromised function of the executive centers come about in the preoccupation/ anticipation stage. The disorder is then defined by Koob and Volkow (2016) as a disorder distinguished by a loss of substance intake control, compulsions to find and take the drugs plus negative emotional states when the user cannot take the drug that is defined by chronic relapsing.

Clarke, Lewis, Myers, Henson, and Hill (2020) explore relapse as a critical factor in SUD's definition. Relapse is a behavior that impedes the recovery process, increases chronicity, and the risk of continued relapse. It is a set of emotions, thoughts, and actions that are not in balance, remain unaddressed, and lie on a continuum moving toward or away from relapse, and

that must be dealt with, frequently using the limited behavioral repertoire that is already in place. Actions or inactions lead to a return to the use of substances of abuse. That use can either be single-use or continuous, depending on the amounts and frequency of use. Grant et al. (2015) noted that these disorders impair productivity and interpersonal functioning. They often co-occur with other mental health disorders and are disabling. Substance use disorders are the most prevalent disorders worldwide.

Toftdahl, Nordentoft, and Hjorthøj (2016) state that SUD is the most prevalent psychiatric disorder, often goes untreated, is highly disabling, and comparable to the top ten health problems worldwide. At a minimum, the diagnosis includes two of eleven criteria as defined in the DSM 5 and have the qualifier mild, moderate, or severe with two criteria defining the mild category, three to five placing the client as moderately impaired and six and above moving the diagnosis to severe. Toftdahl et al. examined the client with dual diagnoses. In defining SUD, it is essential to note that many studies have designs which look at co-occurring disorders due to the high rates of both types of conditions diagnosed simultaneously. This factor increases the already high relapse and rehospitalization rates plus contributes to disruptive behavior and social instability. More importantly, it contributes to SUD's definition in that some of the overlapping diagnoses make it essential to clarify the extent of SUD problems as they occur in behavioral health situations.

Atzendorf, Rauschert, Seitz, Lochbühler, and Kraus (2019) described the substances used to define SUD for this qualitative systematic literature review. These include alcohol, illegal drugs, medicines with abuse potential, and nicotine. The disorders are essentially the use of substances in more significant quantities than intended or in the case of medications for uses other than prescribed. When defined as a use disorder based on extrapolated population statistics

and nicotine use disorder, 13% of 55 million people reported enough criteria to have a SUD. Nicotine had the most significant percentage of the population, followed by Alcohol and analgesics or prescription medication (Atzendorf et al., 2019).

In defining SUD, it was necessary to note that the risky behaviors that are a criterion for inclusion of diagnosis, such as those identified in the American Psychiatric Association (2013), are correlated with increased mortality. Those behaviors are continued use despite having persistent or recurrent social or interpersonal problems, recurrent use in situations in which it is physically hazardous such as driving or working, use that continues despite knowledge of having a persistent or recurrent physical or psychological problem or a need for markedly increased amounts of a substance to achieve intoxication. Chang, Lichtenstein, Larsson, and Fazel (2015) showed that of the many psychiatric disorders, there was little evidence that others apart from SUD were contributing factors to increased mortality rates post-incarceration. This study examined data from 47,236 post incarcerated inmates who had SUD compared to those who did not look at the death rates. This included rates of deaths from in other settings, including hospitals and post-discharge from treatment settings. When biopsychosocial factors such as socioeconomic data, social and familial settings were accounted for, the overwhelming mortality rates came from SUD. SUD was posited as causally related to post-release increased death rates due to consistent data after removing the previous factors.

Han, Compton, and Blanco (2017) define specific SUD criteria from the National Survey on Drug Use and Health (NSDUH). Although, based on the use of prescription opiates, the defining criteria apply to SUD in general. These criteria include using medications in any way not intended, using substances for longer than planned, and in greater amounts and includes craving of the substance of abuse. This examined withdrawal and tolerance as defining factors

and used responses such as that the person ingested the substance because they had to have it or believed they were “hooked.” In this definition, the use causes significant impairment with major obligations at work, school, or home and is engaged in high risk or risky situations.

One item for discussion was an opposing view on the definition of SUD. Most of the previous literature tended to understand SUD from the brain disorder model of addiction, as described in Peele (2016). Peele’s discussion included information about natural or spontaneous recovery as a counter to the brain disease model and the purported lack of choice that persons with SUD have due to physiological changes in the brain. Data provided in the discussion linked both abstinence and harm reduction with the person suffering from a SUD to stop using without a significant amount of treatment. Smith (2019) defined natural recovery as the ability to overcome SUD issues without significant outside resources or professional treatment while noting that proponents of the theory argue against the medical brain disease model by citing this type of remission**.** Mocenni, Montefrancesco, and Tiezzi (2019) proposed a model of the actions that result in spontaneous remission. Noting decision-making factors that have not been accounted for in previous literature, Mocenni et al. highlighted cognitive appraisal as the mechanism. Thinking about past situations and juxtaposing that information against future results allows an older and wiser person to reduce the impulse to continue to use and increases cognitive control. An older and wiser person was defined by Mocenni et al. as one who has a changed perspective and has a better understanding of future expected losses.

An interesting fact from Ritter, Mellor, Chalmers, Sunderland, and Lancaster (2019) was that spontaneous remission rates are difficult to calculate since past studies varied between 24% and 74%. They concluded that the definition of treatment and the meaning of severity affect the rate of spontaneous remission so that if self-help programs are considered a treatment, the

spontaneous remission rates would be reduced. In conclusion, Heather et al. (2018) reported that spontaneous remission is proof that the brain disease model's argument and its dependence on lack of choice are only possible in the most severe SUD cases. Substance abuse cannot be separated from the biopsychosocial and cultural contexts so that SUD cannot merely be a physiological phenomenon.

The information in this section, when integrated, pointed to the importance of a SUD definition when studying effective interventions. The SUD definition that affects and informs the intervention's performance had implications for treatment modalities discussed in this qualitative systematic literature review. The semantics affected outcome measures. It was necessary then to apply the same standards to all modalities that are studied.

SUD Diagnosed

According to Boscarino, Hoffman, and Han (2015), continuum descriptors in the DSM 5 that improved upon the previous diagnostic manual refined SUD diagnosis. The diagnosis was juxtaposed against earlier DSM IV models of diagnosis. The inclusion of historical data allowed for a better understanding of SUD diagnosis. One change in the diagnosis was to remove tolerance and withdrawal symptoms for persons who were taking opiates under managed care because these symptoms were iatrogenic rather than psychopathogenic. The diagnosis from this same study also looked at significant associations with SUD, such as poor health status, depression, anxiety disorder, certain personality disorders, and exposure to trauma. The design of the ability to diagnose predicted the severity of SUD diagnoses. It appears that many factors would need consideration to be the most accurate (Boscarino, Hoffman, & Han, 2015).

Denis, Gelernter, Hart, and Kranzler (2015) continued to describe the changes from one DSM to another, the first of which used categorical criteria for diagnosis to the latter based on

continuum diagnosis. Some of the new changes included removing the criterion that included illegal acts and added the important physiopsychological component of cravings. Changes matched the International Classification of Diseases (ICD) diagnosis tables. It did not provide additional information in context but can be a valuable predictor for relapse. The removal of illegal acts came about due to low endorsement rates and not being a proper diagnosis criterion. What used to be abuse and dependence was combined to show severity levels of moderate, mild, and severe, provided by looking at the number of criteria by which a person with SUD is scored.

Sayette (2016) discussed cravings that are part of the criteria for diagnosis and posits that they are a central part of the diagnosis. Cravings were a predictor of relapse and should be brought to the person diagnosed with SUD to increase awareness to ameliorate the effects. Since cravings bring about their diagnostic issues, it was necessary to discuss further to gain insight into context toward a diagnosis. Von Hammerstein et al. (2019) defined cravings based on a model known as the elaborated intrusion theory of desire (EIT). Craving is a process with both physical and psychological components. It begins as the desire for a specific action of a substance. The expectation of this target overwhelms the person and focuses the attention. It is resultant from perseverating thoughts brought about by other internal cues like emotions or external environmental variables but is part of a continuum. For example, if a person in SUDT believed they needed to discharge early from treatment that placed them in a high-risk situation that was unsafe due to relapse risk, this could represent the beginning cravings on a lower end of the continuum. SUD can be viewed as a maladaptive behavioral strategy to control emotions and thoughts. Craving triggers such as negative affect or thoughts placed on the continuum can be seen as something that can quickly ricochet to the anticipated reward (Von Hammerstein et al., 2019).

Takahashi et al. (2017) discussed the criteria for the DSM 5 diagnosis. There were 11 criteria, described in the DSM 5, used to diagnose a SUD. The first three are tolerance, withdrawal, taking substances in larger amounts, and longer than intended. Next is a desire to quit with unsuccessful attempts to cut down. Important activities are given up for continued use, while replaced with activities that surround using the substances. Another factor is that the subject continues to use the substance despite psychological and physical problems. The subject has cravings for the substance and uses substances in physically hazardous situations. Their use causes a failure to fulfill roles at work, school, and home that is part of the last criteria, which is the persistence of interpersonal and social problems.

To properly diagnose this disorder, Crockford et al. (2015) discussed that a therapist must have knowledge and skills in identifying the disorders. Skills include the ability to elicit accurate historical information that indicates the disorder. This must be combined with the awareness of signs and symptoms. This diagnosis would often be performed using such testing methods like Assessment for Drug Dependence and Alcoholism (SSADDA), as described in Denis, Gelernter, Hart, and Kranzler (2015).

McCabe, West, Jutkiewicz, and Boyd (2017) considered a purpose for improved diagnoses. It is more important than ever to carefully diagnose SUD since the type of diagnosis by substance has changed from primarily alcohol-related to polysubstance use. This includes polysubstance diagnosing. The disorder's consequences have become more severe in those who have become enmeshed with multiple substances. Having the ability to diagnose with a continuum and to look at more than single substances for diagnosis provide important implications for clinical interventions for treatment and further studies. Adults with SUD are

more likely to report polysubstance use, and those with polysubstance reporting have more difficulty in extinguishing patterns of behavior (McCabe, West, Jutkiewicz, & Boyd, 2017).

There is not a consensus for SUD diagnosis based on the DSM-5 criteria. This type of diagnosis is criticized by some authors who disagree that nosological systems are the correct way to diagnose SUD. According to Markon (2013), although classification systems have value for nonscientific purposes or specific scientific purposes, they impede scientific development by blocking competing discourse. Markon suggested that it would be more prudent to rely on a valid measurement process than to diagnose based on identified constructs such as the DSM criteria or clinical descriptions that constitute the domain of psychopathology. Young, Winstanley, Brady, and Hall (2017) discussed an alternative to DSM psychiatric nosology known as the Research Domain Criteria (RDoC) from the National Institute on Mental Health. RDoC definitions of psychopathologies are based on specific behavioral dysfunctions that eschew the categories defined in the DSM 5.

Young et al. pointed out that RDoC was created due to overlapping category symptoms in different disease states and because DSM criteria are not based on underlying biological mechanisms. Lilienfeld and Treadway (2016) stated that the RDoC views pathologies as a dysfunction of neural mechanisms. It is based on markers of psychobiological systems linked to adaptive or maladaptive functions or behaviors. Lilienfeld and Treadway's criticism of the DSM was that overlapping diagnoses are both a red flag that does not work correctly and a fallacy known as the jangle. The jangle fallacy means that solely because a disorder has two different names, it is a distinct disorder or that identical conditions are different because they are labeled differently. This implies that the overlaps in diagnosis are the same diagnosis with another name. Cosci and Fava (2016) took this argument a step further, writing that the DSM criteria capture

only a narrow part of the necessary information, neglecting features such as medical conditions that affect psychology. They suggested a transdiagnostic assessment of illness-related behaviors. Zambrano-Vazquez et al. (2017) test the RDoC by using evidence-based treatments with 85 participants who attended residential SUDT and had reported PTSD. The study aimed to understand SUD comorbidity from an RDoC framework through pre and post-treatment outcomes on the RDoC systems of cognitive, Negative Valence, and Arousal/Regulatory. Post-treatment measures showed significant decreases in pathologies within the systems providing evidence that the system could be used effectively in clinical applications.

SUD's current mainstream diagnosis mechanism is a categorically based typology performed, at least in the United States, using the criteria in the current version of the DSM. There may not be a consensus about its use or proof of its overall effectiveness in a complete overview of SUD or any other mental health diagnosis. This does not diminish that this manner of diagnosis is widely used and is a way in that practitioners have a common language to discuss mental health. The implication for effectiveness outcomes about the modalities discussed in this qualitative systematic literature review is that in both the mainstream diagnosis and an alternative posted, there are behavioral components that must be addressed, and their diminution will indicate efficacy outcomes

SUD and Co-occurring Mental Health Issues

Over the last 25 years, global awareness of mental health and substance use disorders has become more focused due to this economic burden. Baingana, Al'Absi, Becker, and Pringle (2015) noted that co-occurring disorders or dual diagnosis (DD) have a high burden economically for society, more so than SUD diagnosed alone. A downward adjustment of lifespan evidences the importance of this due to disability and with persons diagnosed with co-

occurring disorders having to live for more years with the disability not being in remission. The authors mentioned that the majority of DD contain SUD and depression or dysthymia. One issue that comes about for DD is the added challenge of dealing with the problem using clinical interventions. Even using the most effective interventions, the risk for relapse is higher in this population and applies to relapse for either disorder. This issue becomes more critical when looking at statistical projections that predict increases in dual diagnosis and is compounded by prevalent societal stigmas toward mental illness that have been shown to increase social vulnerabilities (Baingana, Al'Absi, Becker, & Pringle, 2015).

Chiu et al. (2018) reported that DD's prevalence rates for mental disorders with any SUD are up to 53% for persons diagnosed with a SUD other than alcohol. Both disorders' co-occurring rates are far greater than average when they have either diagnosis for mental illness or SUD. Another critical point for treatment is when mental disorders are diagnosed at a younger age; SUD's risk is even greater. Chiu et al. (2018) waded in on the debate over that disorder promulgates the other, pointing to studies showing that when a person is susceptible to mental health problems, they are far more likely to develop a SUD. The reasoned hypothesis for this suggests underlying vulnerabilities, such as difficulty with emotion regulation, that are causal to repeated administrations of substances of abuse to control those emotions, and that then leads to SUD diagnosis. The illnesses that are intertwined influence each other in a bidirectional way. This duality ramps up risky behavior and makes it more difficult for treatment adherence. One solution is to increase care so that integrated co-treatment addresses both disorders (Chiu et al., 2018).

Dauber, Braun, Pfeiffer-Gerschel, Kraus, and Pogarell (2018) discussed that SUD often occurs with other mental and physical problems. With up to two-thirds of persons who suffer

mental health issues having a co-occurring SUD, lifetime prevalence rates for developing a SUD are as high as 90%. These co-existing disorders create interference with the treatment of both the SUD and the second disorder. There is a greater severity of psychopathology, higher relapse rates, and substandard clinical treatment outcomes. The prognosis for individuals who suffer as such is poor.

Dauber et al. (2018) indicated engaging in adequate treatments that are most effective at dealing with DD and integrated to provide holistic treatment. The difficulty remains for SUDT that despite the knowledge that treatment integration is most effective, mental health and SUD care remain bifurcated. This separation creates additional barriers to recovery and causes a delay in the implementation process that can only be overcome with proper treatment to assist persons with their multiple problems.

Gold et al. (2018) pointed to co-occurring disorders, increasing mood-related episodes' frequency, and greater severity of both illnesses. Also, there are more suicide attempts and difficulties with treatment non-compliance. The DD for bipolar disorder (BD) and SUD correlate with a greater number of repeated hospitalizations and greater costs due to the difficulty of treatment and the length of time needed for treatment. Additional data suggested that 60% of persons diagnosed with BD have a co-occurring SUD diagnosis. This increased burden provides the impetus for better clinical interventions and responses. However, the previously mentioned separation between what appear to be two types of treatment for two different disorders once again occurs. Most studies looking at BD make SUD an exclusionary factor so that with this particular combination, there is limited information, and it becomes more difficult to guide the most efficacious treatment.

One mental health disorder strongly associated with SUD, mentioned in Gilpin and Weiner (2017), is post-traumatic stress disorder (PTSD). Subjection to trauma can bring about a wide range of enervating symptoms that endure. Although this disorder is in civilian populations, the hardest hit is military service veterans who have experienced combat. When studied, there are more instances of SUD, but when combined with the much higher rates of PTSD, the co-occurrence of these disorders is more prevalent. This co-occurring problem shows neural correlates related, positing that these diagnoses happen together due to the similar physiological issues inherent in both (Gilpin & Weiner, 2017).

Conway et al. (2017) looked at DD through the lens of co-occurring polysubstance use and mental health issues. In this study, the secondary substance is nicotine. The rates of DD are greater with persons who use nicotine. There are higher rates of binge drinking and substance use, as well as other mental health issues. From a treatment perspective, McKelvey, Thrul, and Ramo (2017) incorporated studies that pointed to a 25% increased likelihood of long-term recovery from SUD when persons discontinue nicotine simultaneously. Considering that persons who use nicotine show greater rates of SUD and mental illness diagnoses, it would be plausible to suggest that treatment for nicotine use cessation might address problems with DD simultaneously. This also corresponds that allowing nicotine use to go unaddressed will result in less effective treatment outcomes.

So how does DD interact with the mechanisms of actions discussed in this qualitative systematic literature review? Baingana et al. (2015) pointed to the burden of economics with persons who have DD. Chiu et al. (2018) provided evidence for DD greater than 50% in patients with SUD. Data from Dauber et al. (2018) yielded SUD lifetime prevalence rates of 90% when a person has a diagnosis of mental or physical problems. Gold et al. (2018) implicate DD as

increasing the severity of both disorders with more hospitalizations and suicide attempts. Gilpin and Weiner (2017) made a case for physiological correlations at the heart of DD, and evidence from Conway et al. (2017) suggested that the physiological correlations are integral in polysubstance issues and that simultaneous treatment is effective. These ideas are important in that to be most effective, the mechanisms of action of treatment and the how and why a treatment works should address multiple issues as they co-occur.

Association between SUDT with EB Practices and Outcomes

There are many ways in which evidence for effective treatments is measured through scientific study to produce empirical data. Hepner et al. (2017) looked at patient quality care perceptions to determine the best evidence-based care. It posited that if studies began to look at outcomes in this way rather than on typical ability to predict outcomes for treatment, programs could have more effective designs. However, the basis is still that best practices would be dictated through evidence showing that programs brought about greater perceived quality in care.

Sharbafchi and Heydari (2017) examined evidence by combing through literature. It concluded that SUDT should be performed through prevention, screening, and referral to proper diagnosis and treatment services. The basic programs should contain urinalysis programs. The ideal treatment would target both individuals, the environment, and families. Prevention strategies should bring about awareness and increase protective factors while decreasing risk factors. EB and psychosocial interventions and a combination of medication-assisted treatments have all been shown to be somewhat effective.

Houston and Schlienz (2018) took a cognitive neuroscience approach to discuss how and why treatment might be effective rather than what outcomes happen. Though there is some evidence of efficacy, none is better than others, so new ways of gathering evidence must be used.

Houston and Schlienz accomplished this task by indexing changes in cognitive and reinforcement processes combined with substance use changes by measuring functional brain activity to ascertain that changes occur through interventions. Studying the “how and why” of treatment efficacy will allow for developing new treatments while making existing therapies more effective. This study’s premise was that the basic representation of SUD based on current diagnostic symptomology must be placed in context with functional changes to remediate treatment that continues to provide results that do not show greater efficacy when compared (Houston & Schlienz, 2018).

Another study, Hien, Lopez-Castro, Papini, Gorman, and Ruglass (2017), investigated the relationship of how emotion dysregulation reduced the benefits of previously empirically validated interventions. Some cognitive-behavioral interventions required prolonged exposure to intense emotional memories. The evidence prompted the creation of treatments that addressed deficits before treatment exposure and phased exposure with longer treatment titration, resulting in less treatment drop out and a significant reduction of symptoms. Marchand et al. (2019) provided evidence for improving treatment by using trauma-informed and culturally competent, responsive, and appropriate interventions based on client choice. That choice would be informed by patient-centered care (PCC), which includes evidence-based interventions shown through empirical data and chosen by the recipient.

Karyn et al. (2019) used the qualitative method to study perceptions and beliefs regarding benefits and barriers to adopting EB practice. This study looked at individuals who had completed treatment and who were in recovery. Group discussions based on a theory used in public health research guided questions regarding the SUD treatment, perceptions of the therapeutic relationship, and both barriers and benefits of the model. Therapists led the groups.

The evidence gathered was used to provide interventions that were standardized and performed by therapists who could show empathy. A secondary benefit was to inform future randomized controlled trials with SUD populations to look at more efficacious measures. The specific measures used to look at outcomes were measures of perceived benefits that needed to outweigh the costs of adopting the program based on an overarching view that fear motivated treatment and that there was something to be gained by engaging in the therapy (Karyn et al., 2019).

Perlman and Jordan (2017) hypothesized using a model known as the continuum of care to treat SUD. The model has been successfully used to treat major health problems such as HIV. The continuum intervention strategy uses a stepped approach, starting with the prevalence of misuse, screening, identification, evaluation for treatment, timeliness, engagement in evidence-based treatment, retention in treatment, measuring the degree of engagement in evidence-based interventions to prevent relapse. The delivery of services would encompass both a general and high-risk population, and screening would measure from misuse to diagnosable SUD using self-report measures. The screening process would look at those who may be susceptible to SUD or those who need formal treatment. Providing evidence-based treatments would include efforts to measure relapse prevention interventions and link to continued care due to the disorder's chronic relapsing nature. Perlman & Jordan (2017) noted that passive referral to treatment yielded inferior outcomes in linking with care so that the system should actively promote the proper continuum.

Harvey, Hunt, and White (2019) used a systematic review of outcomes to look at the changes in clients' ability to regulate emotions after DBT interventions. The review was a metanalysis of several comparison studies that looked at results from treatment with DBT versus treatment as usual (TAU). The outcomes were inconclusive and provided inconclusive evidence

regarding the effectiveness of DBT in treating ER difficulties. The methods used could not gather enough evidence for comparison due to contextual problems with treatment settings across many studies. This points to the need for more research with longer follow-up of outcomes to provide better EB practices.

Defining Outcome Measures

Many studies attempt to look at EB practices and their efficacy in several interventions for SUD. First, measures would define the what and how of a study in this area. Hepner et al. (2017) indicated that there is still a lack of ways to measure assessments for quality of care (QOC) of persons who have had SUDT. Quality measures have been studied mainly with the treatment of mental health concerns. In most cases, these types of measures come from clinical intervention guidelines and assess to what degree a recommended level of care was received. The measures often focus on the process and types of care received. This is easily measurable and actionable. For SUD QOC measures, most studies look at whether servicers begin and whether the clients remain engaged. They do not look at the use of EB treatments. The Hepner et al. study assisted in designing and testing methods to measure QOC. The process design developed a list of measures that looked at validating EB practices for primary and specialty care for SUD by using a panel of experts that convened to develop the set of measures that were targets for future development. This was accomplished by creating a specification for the measurement and actively implementing those measures in studies looking for feasibility, reliability, and validity (Hepner et al., 2017).

McKay (2017) discussed that research methods have improved while progress is modest regarding longer-term outcomes. Once established and studied, evidence can lead to improving outcomes for treating persons with a SUD. Treatments should focus on more than eliminating

substance use to achieve better rates. Treatment should target greater access to experiences that will be enjoyable or otherwise rewarding to clients. There are significant problems with reward salience that occur due to the brain being hijacked by SUD. Simple pleasures become an afterthought once executive functions are impaired. Treatment must be enjoyable and go beyond the reduction or elimination of SUD to compensate for salience issues. This should be combined with incentives to make treatment and recovery worth it (McKay, 2017).

Prinsen et al. (2016) identified an issue with consensus regarding that outcome measurements should be used in clinical trials. Due to a lack of consensus, clinical trials end up with different reports that are inconsistent and difficult to compare and combine. This study's suggestion amounts to clearly defining a set of standards that are determined to be the most valid and reliable and then using those standards to further study intervention outcomes. Another suggestion was to standardize the outcome measurement instruments because different instruments would result in comparison difficulties. The data from Prinsen et al. (2016) suggested using the literature search to identify which types of measures could be used across all studies, what should be measured, and agree to consensus for a minimum set of outcomes that should be measured in all clinical trials for specific diseases or trial populations. This consensus would then be compared to determine if the selection process of measures and instruments for specific studies could be generalized to use similar methods.

Klimas et al. (2018) utilized typical standards of comparison. The article included a randomized controlled trial study that differentiated psychosocial interventions with other psychosocial treatment or TAU. It contained several of the current brief interventions for helping persons with SUD. Klimas et al. defined the studies' parameters by using primary outcomes as reducing or stabilizing the use, retention, and completion of treatment and reducing the

psychological and physical harm that results from SUD. Previously mentioned studies discussed means of identifying best practices through evidence by designing and defining the studies. Klimas et al. defined the measures they included in their study and conducted an exhaustive literature review and meta-analyses. The results in Klimas et al. (2018) contained no reliable conclusions and provided that none were more effective for this particular program. Although the outcome measures had been defined to perform the study, they were not enough to show statistical significance. KIimas et al. concluded it is important to conduct randomized controlled trials with robust methodology, further defining outcomes.

Hamilton et al. (2015) assigned parameters for their study by looking at a specific person's specific behavior as a barrier to change and how this can be reduced throughout treatment. The choice impulsivity (CI) measure was studied using preclinical and clinical task assessments to measure its outcomes. The definition of the measures came about from a meeting of the International Society for Research that spent time discussing impulsivity because evidence showed that impulsive behaviors were problematic in and prominent features of many psychiatric problems. This study examined these specifics before, during, and post-treatment. The purpose of defining this outcome came about due to CI being a reliable and elevated measure in many populations. It was unique because CI can be differentiated from other types of impulsivity. This allowed the construct to be used as a measure to inform clinical interventions in the treatment of psychiatric disorders. Hamilton et al. (2015) provide an opportunity to look at the definition of measures using a consensus from individuals to inform outcomes.

What should is important to know about outcome measures? Outcome measures for SUD define the entire process of a study. Outcome measures are the “what” that guide the process of any study. When studies about a particular outcome are few, it is important to create

specifications for the measurement and implement those measures in studies (Hepner et al., 2017). Once outcome measures are established and studied, evidence can lead to interventions that improve outcomes for SUD treatment. McKay (2017) states that although research methods have improved, progress for longer-term outcomes has been modest. The real debate is whether elimination of substance use is a true measure of success since, as Mckay suggests, treatments must focus beyond this one factor. There is also a lack of consensus about outcome measures. This lack of consensus produces studies that are inconsistent and not easily compared (Prinsen et al., 2016). Thus, there is a need for defining a set of valid and reliable standards to use in further study of intervention outcomes. These standards will help improve the quality of treatment by identifying measurable constructs such as behaviors studied in Hamilton et al. (2015).

Guidelines for Identifying which EB Practices should be used in Treatment

Several studies looked at types of treatment modalities that are effective and that are EB practices. One aspect of the measure of effectiveness is determining how and which EB practices will be part of SUD treatment. This section will provide studies that look at EB's types of treatment modalities and how they are determined to be used for SUDs.

Miller and Moyers (2015) asked what it would be like in the world of SUDT if practitioners did not pay much attention to research, did not read scientific-based journal articles, and practiced interventions based only on instinct. Looking at ethics in SUD treatment practice, it is critical for practitioners to maintain education and understand the most effective treatment for their clients. Allowing practitioners to provide any type of service they felt like is akin to the wild west. The expectations from trends in SUDT bring about providing for interventions with a scientific evidence base. Trends include at least a minimal use of EB treatment. Treatment should be integrated with general health care because patients in SUDT often have associated

medical or psychological issues. The integration will provide accountability because providers will be expected to hold to standards-based upon evidence of efficacy. In this way, interventions will be better understood, operationalized, and readily implemented with tested measures. Part of the integration that should occur will include relational factors such as therapeutic relationships and pharmacological interventions (Miller & Moyers, 2015).

Implementation is one of the guiding issues that must take place. Bauer, Damschroder, Hagedorn, Smith, and Kilbourne (2015) defined this as studying methods to promote EB practices and produce adoption and acceptance of those practices to improve service quality and efficacy. Studies to bring about implementation should look at a broad range of topics that should focus on delivery by the provider and the organization. The study of implementation should bring biological, social, economic, and psychological considerations to the table and focus on quality improvement that tackles specific problems, leading to a better design to bring about best practices. The focus must remain on implementation that takes underutilized methods and assists with their adoption through developing standardization, generalization, and wide application. It is not enough to gather data. The data must be systematically used for intervention so that the adoption of EB practices takes place (Bauer et al., 2015).

One of the specific measures from research questions in this qualitative systematic literature review looks at efficacy with reducing symptoms rather than days of abstinence alone. Kang, Fairbairn, and Ariss (2019) studied the result of interventions on emotion outcomes to identify efficacious interventions. It started with the premise that emotion dysregulation and its avoidance is a causal attribution of SUD. Avoiding emotion is a primary factor in relapse compounded by removing substances and a limited behavioral repertoire. Although many SUD studies acquiesce to the role of emotion, few focus on the efficacy of interventions in reducing

distress. Successful interventions can be designed by quantifying how much an intervention addresses reducing factors that are underlying mechanisms of the SUD beyond simple use. An interesting finding then from Kang, Fairbairn, and Ariss (2019) was that certain classes of CBT type interventions produced a statistically significant reduction of anxiety and stress and provided clients with tools to better handle these strong emotional states. The previous was contrasted with the promotion of positive emotional states that were not shown to be a factor in the results. In most cases, the best interventions included modules that helped target emotional distress rather than promote positive emotions. This makes sense considering the nature of SUD.

Day et al. (2018) identified that bringing EB practices so that they are implemented properly should be achieved by training staff to use the interventions. Treatments that promote reinforcements that make abstinence appealing are another factor. Treatments need to extend beyond the client to encompass family, be EB, and be used during routine care even when there is no intervention package. This indicates providing brief but effective treatments attached to contingency management or token economies to address reward salience and increase treatment length.

According to Wendt and Gone (2018), there is a mismatch in treatment modalities that impedes the use of the most efficacious and appropriate modalities. The mismatch occurs because most SUDT is performed through a group process, while many of the studies that look to prove efficacy draw from one-to-one sessions. An important implication of this study is that the most effective clinicians tend to have some freedom or flexibility in facilitating groups. They could use their group process and adapt and accommodate the delivery to what they preferred. This flexibility was prominent when using EB practices.

An issue that was found with the delivery of group therapy, according to Wendt and Gone (2018), was the clinician's difficulty in dealing with complex group dynamics, limited exposure to group therapy with a lack of training and experience with this genre. Reliance on educational groups allowed them to avoid these issues despite evidence that education is not an effective intervention. It appears likely that organizational barriers, clinician attitudes, and beliefs, such as doubt, can get in the way of delivery of EB practices. The best treatments would be process-like with less reliance on didactics, while organizations would improve counselors' skills and incorporate skills practice alongside delivery (Wendt & Gone, 2018).

The importance of identifying that EB practices should be used in treatment is clear. Ethics in SUDT dictate that practitioners maintain education and understanding of the most effective treatments. Clinicians and entities should promote the use of evidence-based practices to improve efficacy. EB's interventions should address biological, social, economic, and psychological issues while extending to include the family in treatment. Treatments should bring appeal to recovery and if abstinence-based should make it appealing. Last, treatment should include routine care for medical health and address the whole person.

Discussion

EB interventions are critical in improving treatment outcomes. Advances in treatment have been assisted in using EB practices. The ethical course for clinicians to take in SUD treatment is to provide information to clients regarding treatment outcomes based on the EB treatments they will encounter. Treatment providers must be educated and qualified to deliver evidence-based practices. SUD must be defined to study the efficacy of EB treatments. The SUD definition affects and informs the performance of the intervention, and definitions affect outcome measures.

The mainstream diagnosis mechanism for SUD is a categorically based typology from the DSM 5. There is no consensus in its effectiveness; however, it is still the most widely used method to diagnose in the United States. No matter the method for diagnosis that is used, the treatment should provide amelioration of symptoms. To be most effective, the mechanisms of action of treatment should address multiple issues. The design of programs for SUDT should be seen through patient quality care perceptions for them to be designed more effectively. It would be best for study processes to be based on outcome measures that have been standardized and that are valid and reliable. From a study standpoint, the same standards must be applied to all modalities that are studied. Evidence from studies can lead to interventions with improved efficacy, as evidenced by decreases in pathologies, such as ineffective behaviors. Clinicians and entities should promote the use of evidence-based practices to improve efficacy. EB's interventions should address biological, social, economic, and psychological issues while including social circles in treatment. Treatments should bring appeal to recovery while being holistic and addressing the whole person.

Current Treatment Models from the CBT Lineage

General Principles of ACT: A Discussion of the Theoretical Framework

This section described ACT as a method of treatment. It discussed the theoretical underpinnings of the interventions.

ACT is one of three therapeutic interventions or modalities analyzed in this qualitative systematic literature review under the umbrella of cognitive-behavioral therapy. According to (Graham, O'Hara, & Kemp, 2018), ACT is a newer form of cognitive behavior therapy. It evolved as a clinical intervention based on a language theory that influences behavior, known as relational frame theory (RFT). It is a theory that allows one to understand how thinking affects

behavior. Assaz, Roche, Kanter, and Oshiro (2018) note that RFT is the functional account of language that states that human language is based on arbitrarily applicable relational responding (AARR). RFT offers a theoretical account of human language and cognition (Singh, Starkey, & Sargisson, 2017). Relational responding is enacted when a response is generated not by a stimulus and its related functions but by relations between stimuli. Arbitrariness applies when the stimuli in the relationship do not share formal characteristics. The individual learns from the social environment through reinforcement that is differential and comprises several sets of stimuli such as trees or cars, and various physical properties such as color or size (Assaz et al., 2018).

A simple example of this phenomenon is that of a child who learns to tell a lie. They see others who get into trouble when they tell the truth. For instance, if another child breaks something and tells the parent they did so, they may be punished. Without knowing lying behaviors, the child can arbitrarily learn that punishment can be avoided if he does not tell the parent that he broke something even after they did it. This can increase the probability that the response can transform into other behaviors like overtly denying when there might be a consequence of punishment. The two behaviors were unrelated except for an arbitrarily applicable relation, and those relations were all from a verbal event. This learning and logic can become complex and even pathological. The stimulus is now any situation in that a person may be found at fault and punished. The discriminative response is that the person can gain the reward of not being held accountable by lying. This can now be generalized to any number of other situations.

Assaz, Roche, Kanter, and Oshiro (2018) discuss the pathology that may come from these relations. Since the arbitrarily applied relations come from verbal relations or cognitions, those

relations dominate over non-cognition related reinforcers. In other words, thoughts of or thinking about actual or possible consequences become more reinforcing than real consequences. Through this learning, many stimuli gain function through relations that are only made through cognition. Yu and McCracken (2016) note a downside to this type of learning and response. Experiences can become aligned with self. This is much like a person thinking something about themselves or situations and then believing it to be true. It could also be the case that self-association blocks healthy functioning. The experiences might appear emotionally painful. In the case of SUD, the relations derived from the SUD are that the use of a substance can avoid a painful experience that generalizes to other experiences, and the cycle of SUD begins.

Rolffs, Rogge, and Wilson (2018) discussed ACT interventions based on the theory of RFT. Psychological Flexibility (PF) is a concept that provides several ways that a person can change their relationship with thoughts, feelings, and events. These interventions are proposed as a six-point model known as the hexaflex. Each of the points or interventions juxtaposes against six corresponding points of psychological inflexibility (PI) at the root of psychological pathologies. Bardeen and Fergus (2016) described the six components of PI as experiential avoidance, lack of contact with the present moment, self as content (judging and believing in an experience that limits an understanding of self), fusion (perseveration or being hooked into unwanted internal experience while believing the literal meaning of thoughts), inaction, and lack of contact with values. While Rolffs et al. (2018) described the six interventions of PF as acceptance, contact with the present moment (being in touch with and aware of one's moment to moment experiences both internally and externally), self as context (the objective perspective of self within internal and external experiences), defusion, committed action (prosocial behaviors that move on toward important and rewarding aspects of life) and values. The general model of

interventions is to provide information about both PI and PF so that a person can change their relationship with internal events such as thoughts and emotions rather than continue to avoid or battle with those states though ineffective and pathological means (Rolffs et al., 2018; Bardeen & Fergus, 2016).

So how and why does ACT work? In an early paper, Hayes and Wilson (1994) discussed the mechanisms of ACT. ACT theory assumes that verbal events, i.e., thoughts or emotions that control behavior, are the root of pathologies. Thoughts and the belief that thoughts are literal arbitrarily establish the specific relation between words and behaviors, which is the context of literality. Hayes and Wilson go on to establish that this literality is an effective tool in many cases. Outcomes can be established from previously unknown items or events. For instance, if someone is told “do not drink that bottle, it contains poison, and it will kill you,” allows that person to establish adaptive behaviors that would be difficult or impossible to acquire through direct contact with the contingency item (Hayes & Wilson, 1994). This relation, that verbal antecedents can promote proper behaviors, can now arbitrarily be generalized to other instances that may be ineffective or even cause pathology due to being less adaptive. An example would be if a person were told, “ Stop feeling Sad,” “Forget about that person,” or “just don’t think about it.”

ACT techniques form a behavior analytic derived psychotherapy approach that can lead to being psychologically flexible (Hayes & Wilson, 1994). This is accomplished when the context that supports literality is changed, and the link between private events and overt action can be reduced. Even in the presence of thoughts such as “I will never finish this doctoral project,” attention can move from manipulating emotions (“stop feeling sad) or thoughts (“just forget about it”) to paying attention to the consequences of overt action. In less formal terms,

behave in ways that work, rather than basing behavior on thoughts and emotions. This behavior change is accomplished by noticing the thought, allowing it to be, while not acting on the thought, and taking appropriate action. It is the change of acting prosocially despite the way one feels or thinks, which is also known in ACT as psychological flexibility (PF) (Hayes, Pistorello, & Levin, 2012). ACT tools are used to disrupt these relations to contact alternative sources of reinforcement. In a sense, it could be said that it is looking at thoughts rather than from or through thoughts that are akin to thinking the thought, "I am going to have a drink" and not drinking. This is accomplished by providing an alternative context for thoughts and emotions. An example of this as an intervention might be asking the question, "on a scale of one to ten, how possible is it to think the thought that you will never finish this doctoral project, yet still finish it." The newly proposed language provides a different context for the thought, arbitrarily applied to the situation that results in looking at the thought.

General Principles of DBT: A Discussion of the Theoretical Framework

This section will describe DBT as a method of treatment. It will discuss the theoretical underpinnings of the interventions.

Linehan and Wilks (2015) discussed the theoretical underpinnings of DBT. Marsha Linehan is the creator of DBT. She described her efforts to help patients with high suicidal ideation. The method was created through direct clinical intervention from trial and error methods and was aided by federal grant funding. Due to the funding, all clients had to have a diagnosis for mental illness, and borderline personality disorder (BPD) was chosen. The overarching premise for DBT is to assist clients in building a life worth living. As a Behaviorist, Linehan believed she could work with highly suicidal clients using behaviorism techniques combined with social learning theory skills (Linehan & Wilks, 2015). At the time of DBT's

inception, behaviorism was focused on changing perceptions of distressing experiences rather than teaching clients to tolerate them. Presenting BPD clients with problem-solving skills to change behavior quickly became a problem. The nature of BPD is characterized by persons who show extreme sensitivity to perceived interpersonal slights and have an unstable sense of self with intense emotional volatility (Gunderson, Herpertz, Skodol, Torgersen, & Zanarini, 2018). Clients felt invalidated by interventions that pointed to them as being at fault in any way for their behavioral issues. Clients would lash out at therapists and quit treatment (Marsha Linehan, 2017). Linehan adopted an opposite strategy using radical acceptance, sat with clients listening to them without judgment, and helped them change without adding new behavior change skills. Clients became frustrated with this new method because they believed it was not helping them solve their problems. According to Marsha Linehan (2017) and Linehan and Wilks (2015), there was an immediate need to meld these two opposite stances and bring about techniques that encompassed problem-solving and validation or pushing for change combined with acceptance of and by the client. Due to emotional volatility, it was necessary to work at the moment and fluidly to respond quickly, work with slow and episodic change, and perform the modality with humility to see that this change was transactional and done by both client and therapist. Thus, DBT was born out of a need to act through opposing forces to bring about objectivity. Linehan and Wilks (2015) describe this as a synthesis where acceptance of the current internal state and a push for progress meet. Acceptance became an agreement between parties of what each person must accept about past, present, and realistic limitations and progress meant teaching skills to tolerate distress and change behavior.

Landes et al. (2017) defined DBT as a complex EB practice. It consists of several treatment modes that include weekly individual therapy, weekly skills groups, weekly therapist

consultation team meetings, and phone coaching at any time that it was needed. Phone coaching was to reduce suicidal behavior or dealing with crises, maintaining therapeutic relations, and generalizing newly learned skills. True DBT therapy takes about one year and is an effective treatment to remediate BPD problems, reduce suicidal ideation, reduce drug use, and several other pathological behaviors. This result is accomplished through lessening emotion dysregulation in many types of clients. Coyle et al. (2019) note that although DBT was originally designed to treat multi-problematic individuals, its core belief is that emotion dysregulation, the inability to tolerate or modulate internal emotional experiences, is the main barrier in a client's ability to live a meaningful life.

In many cases, clients who come to DBT have encountered several treatments that have been unsuccessful and ineffective. Due to SUD's nature and its chronic relapsing manifestation, this is also true with this population. Treatment with formal DBT is not for everyone. Thus, DBT begins with a pretreatment stage designed to see if the modality will be useful with a particular client. The first sessions set the foundation for treatment (Coyle et al., 2019). If used in its entirety as a modality, this will create difficulties with today's SUD treatment. Most recognizable as a barrier to the use of DBT in this setting is the year plus treatment that was suggested in Moore et al. (2018)

Much like the fluid changes made to the program in its early stages, Nyamathi et al. (2017) addressed these translational difficulties by modifying the program and adopting DBT tools, taking modules or sessions, and teaching clients the skills sets from DBT in SUD treatment. This method leads to training that showed clients how to avoid and reduce cues to use; used the DBT technique of burning bridges to substance use; defined what a life worth living might look like; noticing urges; adaptive denial; and alternative rebellion combined with a

review of previous homework and the use of diaries. It was designed to teach those clients how to dialectically think through and problem-solve during emotionally charged situations through four core tools. These tools are mindfulness, interpersonal effectiveness, distress tolerance, and emotion regulation that can provide for a change in emotions and cognitions, to assist with prosocial behaviors and improved thinking patterns that assist in the prevention of pathological behaviors that accompany a SUD diagnosis (Nyamathi et al., 2017). Cavicchioli et al. (2019) further discussed the modification of DBT for SUDT by using it as a stand-alone intervention for several clinical conditions that include SUD. The four main skill modules noted previously were also carried out in treatment to help clients substitute anti-social behaviors with goal-oriented prosocial replacements. These skills were provided in a group setting similar to the groups provided in the unmodified version of DBT.

Stotts and Northrup (2015) highlighted the specific adoption of DBT for SUD in its study on improving this modality's efficacy once modified. There were many similarities between the original formulation of DBT and some new methods that included using a dialectic stance toward SUD. This modified version held the necessity of immediate and permanent substance use cessation as a behavior change while maintaining the acceptance that relapse is real, does, and can occur. The version linked a non-judgmental harm reduction position by enhancing problem-solving skills with its opposite complete abstinence stance to bring about efficacious results in SUDT (Stotts & Northrup, 2015).

So how and why does DBT work? Linehan and Wilks (2015) provided historical data that showed DBT came about from applied behavior analysis and that applying behavior analysis led to the client's invalidation because it appeared to them that they were doing something incorrectly. This gave rise to the idea that the eastern philosophy of acceptance and mindfulness

could be combined with behaviorism. Dimeff and Linehan (2008) discussed the spirit of DBT as strategically holding opposites to bring about objectivity and self-application of this tool. By teaching clients to hold opposites, they continually look to mediate thoughts and emotions by finding middle ground. This task is accomplished by searching for new truths from contradictory positions. Dimeff and Linehan propose that therapists regularly ask priming questions such as "What haven't we considered?" or "What is the synthesis between these two positions?" to enhance the skill.

When the skills are combined with SUD treatment, Dimeff and Linehan (2008) noted that the treatment begins with asking for a period of attainable abstinence such as a few hours a day or even five minutes, and once attained, the commitment is renewed to string together abstinence and teach that it is possible. This is followed by skills acquisition of anticipating potential cues to relapse and burning the bridges to their drug-abusing past. While pushing for abstinence, there is an acceptance of relapse by both therapist and client. A relapse becomes a problem to solve, rather than evidence of inadequacy or failure. The therapist assists the client in behavioral analysis of the events that led to relapse to learn and apply what is learned to help with future behaviors (Dimeff & Linehan, 2008). Consistently reassessing one's own internal and external situation permits the maintenance of present focus while allowing the person to contact positive self-reinforcing behaviors that will then be repeated.

General Principles of REBT: A Discussion of the Theoretical Framework

This section will describe REBT as a method of treatment. It will discuss the theoretical underpinnings of the interventions.

Obi-Nwosu, Baleguel, Nwafor, and Onyemaechi (2019) noted that Albert Ellis first developed REBT in the late '50s. The theory of this model is that unhealthy behaviors like

substance use result from irrational beliefs. Eliminating irrational beliefs by becoming more objective, gaining insight, and providing oneself with the ability to appraise external events more clearly can allow for engagement in adaptive responses that can lead to a fulfilling life. The therapy aims to assist with behavior change and modify thinking patterns.

Sharma and Lakhan (2019) showed that REBT had originally been called rational emotive therapy. Its design was to dispute irrational thoughts to help the client adopt logical and objective thinking patterns based in reality. The theory behind REBT is that negative behavior originates from dysfunctional thinking processes. External events, known as activating events in REBT, are the catalyst for challenges. The events can come from work pressures, relationship difficulties, and any other situation that may provoke intense emotions.

Emmanuel and Funmilola (2015) stated that REBT is a technique used in counseling. It is designed to increase satisfaction in life while reducing anxiety and panic. It helps reduce or avoid negative emotions that increase addiction relapse when used to treat substance use disorder. In general, REBT moves to allow for greater happiness in a person's life. It allows persons to use disputation techniques in real-world situations.

Turner (2016) pointed out that the REBT stance is that rather than actual events being the direct cause of emotions and behaviors, the beliefs or perceptions of those events lead to emotional and behavioral outcomes. There is a difference between rational and irrational thoughts. When one encounters failure or mistreatment or any negative event, they can react with healthy or unhealthy emotions and behaviors. Irrational beliefs lead to an unhealthy set of emotions and maladaptive behaviors and are believed to cause many pathological conditions and mental health issues. Designed by Albert Ellis in the 1950s and inspired by stoic philosophy,

REBT contributed to psychology. He believed that there needed to be more effective psychotherapy that dealt with psychotherapy defects (Turner, 2016).

The event, belief, consequence framework that REBT espouses is demonstrated in the representation of the ABC model. Sharma and Lakhan (2019) showed this as the ABCDE technique. ABCDE is an acronym of A as the activating event. B represents the belief or perception. C is the consequence or thoughts and emotions that result from the perception. D is the disputation that one can use to become more objective in thinking, and thus E is the effect produced by a more objective outlook. In other words, using the technique of disputation can ameliorate the emotional and behavioral consequences of rigid or distorted thinking (Sharma & Lakhan, 2019).

This model has been shown as valid through empirical scientific evidence. It is also a simple method for clients to remember the link between thoughts and outcomes. Most importantly, REBT is designed simply so that clients realize it is not the events that are the cause of dysfunction but how they view it that reminds them that they can control the response and outcomes to bring a measure of autonomy (Turner, 2016).

Omeje et al. (2018) discussed that Ellis postulated when people experience unwanted emotional and behavioral consequences that result in pathology, positive outcomes will be the result once irrational and ineffective perceptions of events are replaced with effective and objective beliefs.

Dembo et al. (2016) looked at REBT from a brief intervention standpoint. This study used the introduction of REBT to promote stronger coping skills and stronger resistance to drug-using behavior. The study was performed by assisting the study participants with changing their

thought patterns. REBT, in this case, looked at drug use as a learned behavior related to negative cognitions.

Nurul, Abdul, and Mastura (2016) studied REBT looking at outcomes through the lens that cognitions, emotions, and behaviors are interrelated. This interrelation influences all aspects of life for humans. When that relationship is not in synchronicity, there is pathology. REBT is the modality that can help people pay attention to the way they think. With this method, persons who suffer can notice when they are experiencing irrational thinking and use the techniques they are learning to stop and change emotions and behaviors. REBT's main objective is that emotions and behaviors do not exist in or from the event but from a mix of cognitive, affective variables that result in ineffective coping strategies. The way to change that through REBT is to change the way events are appraised (Nurul et al., 2016).

David, Cotet, Matu, Mogoase, and Stefan (2018) began discussing REBT with historical background. REBT was originally called Rational Therapy by Albert Ellis. Ellis realized that there was an emotional component to the theory and wanted to emphasize changing emotional outcomes, so changed the name to rational emotive therapy. By the 1990s, Ellis began to see that this work's true outcome was to change behaviors while reducing emotional consequences. He then changed the name of his therapy to REBT. It is one of the core modalities in the CBT genre.

So how and why does REBT work? The REBT mechanism of pathology was considered in David et al. (2018) as irrational beliefs being causal to emotional distress. Thus, REBT provides a skill to change the irrational belief. An example of an irrational belief would be the thought, “I cannot control my anxiety without a drink,” which leads to more anxiety if no drink is taken and possible relapse.

Knowing why an intervention works are equally as important as knowing if it is effective. David et al. further understand the how and why behind REBT by stating that the change in irrational beliefs leads to a change in dysfunctional emotions and maladaptive behaviors. Obi-Nwosu et al. (2019) showed this to eliminate irrational beliefs by becoming more objective. Sharma and Lakhan (2019) provided discourse that disputing the irrational thought helps that client adopt logical and objective thinking patterns based in reality and promoting proper behavior. This tool can appraise external events appropriately that will allow for adaptive rather than pathological responses. Emmanuel and Funmilola (2015) noted that this self-appraisal reduces negative emotions, decreasing the relapse rates. Furthering the above thought example of not being able to control anxiety without a drink, one might be led to consider that they have not drunk and handled their anxiety in the past. This consideration, in turn, could help to modify the thought to, “Although it might be difficult, I have controlled my anxiety in the past without a drink.” This modified thought could lead to the regulation of emotion and behavior that does not include taking a drink.

Discussion

The previous section is a primer on the theoretical framework for each of the CBT modalities, ACT, DBT, and REBT, that are the focus of this qualitative systematic literature review. This included information regarding the mechanisms and tools used in each of the modalities and an explanation of how the interventions provided within the modality affect the pathology of SUD.

ACT is a behavioral-based modality that uses a language theory known as RFT to change the contextual relationship between a person and their thoughts and emotions. This change enables a person to engage in behavior not based on those antecedents but instead on reinforced

consequences that are not pathological. The change in context is accomplished using six core processes that form the whole of ACT.

DBT is a behavior analytic based modality that comprises teaching tools to provide the user with the ability to continuously reappraisal thoughts and emotions. This reappraisal is combined with teaching new skills that can be used by the person with SUD to prevent relapse and is accomplished by teaching the client to hold a dialectical stance that two opposing thoughts can be true at the same time to engender objectivity.

REBT is a CBT based modality that uses cognitive disputation to change the irrational thoughts that a person uses to appraise situations. The tool of disputation helps the client regulate emotion and behave in ways that match the newer, more rational thinking patterns that emerge from the tools use. This is accomplished by teaching the client to use the tool when events occur that result in strong emotional content or that could result in pathological behaviors.

Reduction of DSM 5 Symptoms

This section discussed the efficacy of ACT, DBT, and REBT treatment outcomes examined through the lens of a reduction of DSM 5 criteria symptoms, and that has been shown through the literature review. The reduction of DSM 5 criteria symptomology was interpreted to include that interpersonal problems will also mean psychological issues such as depression and anxiety that are directly related to SUD

Efficacy of ACT Based on a Reduction of DSM 5 Symptom Criteria for SUD

According to Gonzalez-Menendez, Fernandez, Rodriguez, and Villagra (2014), ACT appeared to be useful as a treatment option for addiction behaviors and co-occurring disorders. This study compared ACT versus cognitive-behavioral therapy (CBT). The outcome measures

were used for this qualitative systematic literature review to examine the efficacy of ACT related to the reduction of DSM 5 symptomology criteria for SUD.

Gonzalez-Menendez et al. (2014) vetted 37 polydrug incarcerated female participants with an ad hoc interview. Each was provided with structured interviews to collect data for a measure of efficacy. The Addiction Severity Index-6 (ASI) is a 257-item measure that looks at patterns of substance use and accompanying severity that takes account of medical, employment, alcohol and drugs, legal, family, and psychiatric 10-point scale. The legal area was not used in this test. The Anxiety Sensitivity Index (ASI) that is a 16-item measure using a Likert scale was used to measure somatic, cognitive, and social issues that pertain to SUD (Gonzalez-Menendez et al., 2014). Two other scales, The Acceptance and Action Questionnaire-II (AAQ-II) and the Mini International Neuropsychiatric Interview (MINI), were used. The first was used to assess experiential avoidance and psychological acceptance levels that correspond with DSM 5 criteria such as cravings and continued use despite psychological problems due to using. The second interview was used to explore Axis 1 psychiatric disorders such as anxiety disorders, panic disorder, social anxiety disorder, and post-traumatic stress disorder that often accompany SUD and are reflected within the criteria for diagnosis (Gonzalez-Menendez et al., 2014; American Psychiatric Association, 2013).

This study found statistically significant effects within post-treatment measures on the ASI in the areas of drug, psychological, cognitive, and family domains that indicate an improvement of DSM 5 diagnosis criteria. When assessing post hoc efficacy for the AAQ-II, Act scored improvements from baseline measures. Last, there were significant improvements in lessened psychopathology from depression, panic, and anxiety disorders, with a particular reduction in anxiety issues (Gonzalez-Menendez et al., 2014).

Lee, An, Levin, and Twohig (2015) noted that ACT could effectively target psychological problems, including anxiety and depression that accompany SUD. One area reflected in the limited behavioral repertoire noted in the DSM 5 criteria is psychological inflexibility that can be seen in the areas such as anti-social behaviors resulting from the SUD. This study used a quantitative review meta-analysis and screened 55 articles, excluding 44, that did not meet the criteria to determine the efficacy of ACT in SUD. The remaining 11 articles were analyzed and provided results to show that ACT is effective in treating SUD. This study suggests pushing for more randomized controlled trials (RCT). The meta-analysis found a significant but small effect at post-treatment for ACT versus controls. This effect appeared to increase over time but could point to the effects of treatment lasting longer. Some of the trials included in the study also looked at psychosocial functioning, indicating that improvements from the course of treatment correspond with an improvement in the DSM 5 criteria (Lee, An, Levin, & Twohig, 2015).

Davoudi, Omidi, Sehat, and Sepehrmanesh (2017) used the Structural Clinical Interview (SCI), the Beck Depression Inventory (BDI), and the Beck Anxiety Inventory (BAI) to assess ACT usefulness in the treatment of SUD in a 70 person two-group pre-test-post-test randomized controlled trial. The SCI, a semi-structured interview that includes some interpretation from the interviewer, was used to determine a co-occurring diagnosis for psychiatric problems. The BDI was used to look at the severity rating of depression that accompanies SUD. It was used to look at common attitudes and symptoms of persons who suffer depression. The BAI is an inventory that uses a Likert-type scale from 0-3. It measures the patient's subjective, somatic, and panic manifestations of anxiety and looks at the severity of anxiety (Davoudi et al., 2017).

The results in Davoudi et al. (2017) pointed to positive outcomes that have significance related to efficacy in the treatment of SUD. Persons with SUD showed lower levels of depression and anxiety while reducing consumption. This study also highlighted results from other trials that pointed to similar outcomes suggesting that psychological states that correlate with pathologies and that accompany SUD can be managed using the tools of ACT. These tools can strengthen behavioral repertoires that keep clients from the cycle of SUD (Davoudi et al., 2017).

Levin, Pistorello, Hayes, Seeley, and Levin (2015) provided assessments to 82 student clients using ACT at counseling centers. Many of the students reported issues with substances and had other mental health issues. This study used several scales to assess pathologies. The Depression, Anxiety and Stress Scale (DASS) is a 21-item Likert type scale recording from 0 to 4 to assess depression, anxiety, and stress. This study also used the AAQ-II to look at students' psychological inflexibility and notes that the AAQ-II has been previously shown to be a valid measure or ACT interventions. Two other measurement tools, the Five Facet Mindfulness Questionnaire (FFMQ) and the Personal Values Questionnaire-Education Subscale (PVQ) were used to assess mindful awareness of behaviors and being nonjudgmental and student’s ability to behave prosocially regarding the school or acting consistently with their values, respectively. The analysis of data measured through paired t-tests noted post ACT treatment outcome and process changes. The AAQ-II used post-treatment change scores measured against pretreatment baselines. The paired t-tests indicated significant positive changes in outcome and process measures correlated with the use of ACT. This was specific to reductions in Psychological Inflexibility (Levin et al., 2015).

George and De Guzman (2015) studied 32 males who had been diagnosed with alcohol use disorder and who had been treated using ACT. This study used The Alcohol Use Disorders

Identification Test (AUDIT) to look at the SUD severity. The AUDIT was used in conjunction with the Perceived Stress Scale (PSS) to identify the participants' perceived stress levels. The study used a control group and a treatment group and measured both tests for pre- and post-treatment outcomes. The research had demonstrated high levels of perceived stress and difficulty in emotion regulation before administering the intervention for all participants. Using comparisons of these assessments showed that the effect size for change was statistically significant. The intervention was shown to have provided an increase in the participants' ability to regulate emotions and reduce stress perception. This effect only occurred in the group that received treatment and not in the control group (George & De Guzman, 2015).

Bahrami and Asghari (2017) created a semi-experimental study of pre-test And post-test design and with a control group. Using the Addiction Severity Inventory (ASI), this study examined whether ACT would reduce the severity of the current SUD for 30 participants. The ASI is a 116 item semi-structured interview conducted to measure problems in medical conditions, occupational status, substance and alcohol use status, legal status, familial status, and psychological condition of the participant. It measures problems in the past 30 days, the past year, and over a lifetime. This assessment was administered at the beginning of treatment and every 30 days for all participants. When results were compared to pre- and post-treatment, the between-subjects effects showed significant statistical differences on all addiction severity subscales in the ACT and control conditions. There was a significant difference between control and intervention recipients in terms of medical conditions, occupational status, alcohol use status, substance use status, legal status, family status, and psychological condition (Bahrami & Asghari, 2017).

Efficacy of DBT Based on a Reduction of DSM 5 Symptom Criteria for SUD

Cannaday (2015) conducted an exploratory, descriptive study using data collection methods. It was a mixed-method and occurred on the site of a residential treatment facility with participants entering into a 45- or 90-day treatment program. The staff was educated and trained on DBT interventions for six weeks before the study implantation. DBT was studied versus treatment as usual (TAU). Three distinct study areas were used due to gender-separate treatments. Study participants were either male or female and made up only part of the whole treatment population. Different populations were used for different treatment periods. TAU was given at times to both genders, and DBT was provided at another time to both genders so that one set of participants was not receiving both treatment methods. The study was designed to explore the effectiveness of DBT over TAU, comparing 15 male participants during the TAU assessment period and seven males during the DBT assessment period. There were six female participants during the TAU assessment period and six during the DBT assessment period. The Cannaday (2015) study was designed after a 12-month study that explored DBT treatment effectiveness versus TAU in a population of clients who had received previously unsuccessful treatment for SUD.

When compared to baseline levels, all treatment participants showed a reduction of levels in pathology that provided that DBT as an intervention was effective. The Data collected for the Cannady study were three-pronged. First was the prevalence of incident reports being received by participants; the second was daily diary cards that described DBT interventions and their effectiveness through self-report. The third was treatment goal progress. Collected data was synthesized through statistical analysis to provide quantitative results. Increased effectiveness was shown in the use of drugs and alcohol, mental health, relationships, and skills to reduce

aggressive attitudes and behaviors with progress in overall treatment goals. The treatment goal progress improved by 9.4% while skills acquisition improved by nearly 30% (Cannaday, 2015).

Abdelkarim, Molokhia, Rady, and Ivanoff (2017) performed a non-randomized controlled trial to study DBT's effectiveness with 40 persons who had a co-occurring diagnosis for borderline personality disorder and SUD. This study was used to replicate results from previous studies that showed this treatment to be efficacious in several areas. The study assigned 20 participants to a DBT program and 20 to TAU and then compared the two. One set of participants was provided TAU that was a psychotherapeutic treatment; the other set of clients were treated using DBT. Patients were assessed at baseline and follow-up at 4, 8, 12, and 16 months. After one year from treatment, results showed that those clients who had received the DBT intervention showed significant improvement over those who received TAU. Of note to this section of the qualitative systematic literature review, clients in the Abdelkarim et al. study showed improvement in scores of the difficulties in emotion regulation scale (DERS).

According to Hallion, Steinman, Tolin, and Diefenbach (2018), the theory guiding DERS is derived from third-wave behavioral models of CBT. It was created using the lens of experiential avoidance, defined as the ineffective use of maladaptive behaviors to tolerate emotions and thoughts, thus providing for the pathologies that result from SUD. When a person can be flexible in their behaviors, meaning they can reach goals despite experiencing intense emotions or thoughts, the proper emotion regulation can occur without harmful behaviors. The DERS then provides a measure to look at impairment or dysregulation of emotions over time and post-treatment. Abdelkarim et al. (2017) results showed DBT recipients had significant improvement over TAU recipients in areas of lessened drug use, lowered hospitalization rates, non-suicidal self-injury, and better scores on DERS over TAU participant concerning the ability

to tolerate aversive emotions an thoughts and behave prosocially despite those emotions and thoughts.

Robison and Luczakowsky (2015) used self-report measures to inquire about the perceived effectiveness of DBT with 13 individuals who had been in treatment that used DBT. This study argued that DBT was effective in several mental health situations and that when symptoms of SUD and other mental health concerns were compared, there were myriad overlapping clusters of results. Differential diagnosis is made more difficult due to this problem. DBT was initially designed to target borderline personality disorder (BPD). This disorder had shown overlapping symptoms with SUD in four categories that affected relationships due to deficits with social skills, problems with identity and self-esteem, self-destructive behavior, and distortions in cognitions with emotion dysregulation. Robison and Luczakowsky provided participants with a 20-item group rating form. This form had items that evaluated DBT processes using a 4-point Likert type scale. Analysis of item selection identified 14 items that corresponded to 4 overlapping features of SUD and BPD. 85% of the respondents reported that DBT had been very helpful or extremely helpful in reducing all 14 items in the four categories. The analysis showed high means scores and low standard deviations that pointed to the overall perception of helpfulness with lower variability in answers that concludes that a DBT facilitated treatment is useful in reducing addictive behaviors and attitudes (Robison & Luczakowsky, 2015).

Maffei, Cavicchioli, Movalli, Cavallaro, and Fossati (2018) studied 244 participants in a SUD DBT treatment program using a three-month treatment period over three years. The study looked at four factors in treatment that included changes in the treatment participants' ability to regulate their emotions and how those changes relate to outcome measures. The DERS scale was administered to the participants. This scale is used to measure one’s ability to understand and be

aware of emotions. The DERS includes a measure that looks at respondents' ability to accept emotional states and whether they can engage in prosocial behavior despite feeling and thinking aversively. Also, this scale is used to determine the availability and use of emotion regulation strategies. Higher scores equate with a greater inability to regulate emotions. The study measured baselines of variables from pre- and post-treatment. The Maffei et al. study indicated large increases in continuous abstinence and large reductions in the lack of ability to accept emotions and engage in behaviors to control emotions following DBT treatment.

Köck and Walter (2018) studied several interventions by conducting a narrative review of 339 papers extracting and analyzing relevant data to examine those interventions that have been used in the treatment of co-occurring SUD and personality disorders. This study noted that these disorders commonly occur and that half of all patients in treatment can be diagnosed as such. In most cases, clinical results for these co-occurring disorders are poorer. Of the three psychotherapy treatments that have shown superior outcomes for treatment, one of them is DBT. In this case, positive results showed decreased substance use, a reduction in psychopathological symptoms, lessened anxiety and depression, and improvements in psychosocial functioning (Köck & Walter, 2018).

Cavicchioli et al. (2019a) attempted to replicate a previous 3-month DBT study that looked at DERS scores. This study extended the original study and looked at treatment episodes both in and out of treatment. The investigation aimed at determining changes in emotional avoidance. It used the addiction severity index, the DERS, and AAQ-II to gather data from a sample of 171 individuals who voluntarily sought treatment. The study aimed to look at the dimension of changes in emotional avoidance (EA) as a predictor for treatment completion. The AAQ-II uses a seven-point Likert scale with higher scores indicating greater levels of being

psychologically inflexible and engaging in pathological behaviors in service of EA. The DERS was correlated with levels of EA. Pre and posttest measures were taken for both difficulties in emotion regulation (DER) and EA. The results supported using DBT for treatment with fewer dropout rates, better treatment attendance, and longer abstinence while showing a reduction in DER and increased positive skills used to deal with EA.

Hadland (2019) studied the use of DBT that has been modified to deal with clients who suffer SUD. The treatment was used to target decreasing substance use, reducing acute withdrawal symptoms, bringing about skills to avoid opportunities for use, reducing behaviors conducive to use, and increasing community reinforcement of healthy behaviors. This study utilized an uncontrolled pre- and post-treatment design to determine the effectiveness of Dialectical Behavior Therapy. The brief addiction monitor (BAM) 17 item self-report measure was used to examine 28 participants' responses on three subscale scores: protective factors, risk factors, and substance use. The BAM has been used in some studies that are primarily performed with a veteran population. The DERS was used to look at EA behaviors. Although there was no control group or randomization, there were measures of pre- and post-treatment. This study indicated some improvements in scores of the DERS that could indicate improvement in areas a DSM 5 diagnosis for SUD; however, the BAM scores showed no improvement in reduction of SUD behaviors at the group level, or, for the most part, at the individual level. There was an improvement in two cases, while in three other cases, there was an increase in SUD using behaviors.

Further analysis using the reliable change index indicates that changes cannot be accounted for any greater than a measurement error and showed that these measures were not reliable. The study had a small response size and was underpowered. One null hypothesis was

that no change would take place in emotion dysregulation. The null hypothesis was rejected through statistical analysis, indicating that emotion dysregulation decreased (Hadland, 2019).

Efficacy of REBT Based on a Reduction of DSM 5 Symptom Criteria for SUD

Oltean and David (2018) pointed out that REBT assumes rational thoughts correlate with emotion regulation and functional behaviors. Psychopathology results from ineffective perceptions of events that occur. The perceptions are then causal to aversive emotional states and antisocial behaviors. This study looked at how rational thinking interacts with psychological distress and disorders. Oltean and David was a meta-analysis that looked at data from 26 studies that met criteria that included REBT in mediating the effects of distress. There was a total number of 5,247 participants with a weighted mean age of 29.72, with 26.9 percent being male. Results from the data, when analyzed, showed a medium negative correlation between improved rational beliefs and psychological distress and a stronger association between unconditional acceptance of beliefs and distress. Not only did these results point to a strong link between rational beliefs and reduction in symptoms of distress, but it also shows that this problem exists for a range of psychological issues. This added to the data that REBT is effective based on its underlying theoretical assumptions. Further, the analysis showed that distress type and its' strength were not factors in outcomes that show that the effectiveness cuts across different types and strengths of aversive emotions (Oltean & David, 2018).

David, Cotet, Matu, Mogoase, and Stefan (2018) performed a systematic review and meta-analysis of 82 studies that spanned from the introduction of REBT 50 years ago. Due to the study's time frames and the many types of REBT interventions, the data was parsed out so that outcomes were set in different measures for more careful interpretation and clinically valid outcomes. The comparison of REBT against a control group effect sizes was large and

significant for reducing distress and improving behaviors and health. Medium effect sizes were captured overall when looked at based on follow up. This measure included effectiveness on anger, behavior, depression, emotions. There were small but significant effect sizes for outcome measures on follow-up for anxiety and cognitive issues. One important area of high effect size was psychophysiological outcomes pre-follow-up that could point to a reduction in symptoms such as cravings (David et al., 2018).

Omeje et al. (2018) studied the effectiveness of REBT in dealing with alcohol use disorder (AUD) in 124 participants who reported the highest severity of the disorder and who had been previously diagnosed with human immunodeficiency virus (HIV). Using REBT qualified counselors, REBT was delivered in 20 sessions of 50 minutes over ten weeks. The treatment process was based on the Treatment Manual for Alcohol Use Disorder based on the REBT treatment Manual for Addiction. A waitlist control group was used to measure outcomes. The control group received services at the end of the study to help with alcohol consumption reduction. The study's assessments included the Alcohol use disorder scale (AUDS), a 12-item instrument that measures alcohol use and experience with symptoms. The study used the alcohol-related Irrational Beliefs Scale (AIBS), a 13-item assessment to measure irrational beliefs regarding alcohol, that is associated with AUD symptomology to look at REBT specific measures. Measures were taken at two weeks follow-up that pushed for termination at six months with a follow-up assessment at that time. The study findings based on a reduction in scores from the AUDS and AIBS showed significant decreases in alcohol use and symptoms with significant reductions in the frequency and amount of psychological or behavioral issues in clients exposed to REBT. This effect was maintained in the follow-ups (Omeje et al., 2018).

Boswell, Cain, Oswald, McAleavey, and Adelman (2017) demonstrated that research has shown that specialized SUD residential treatment services using REBT positively impact problematic substance use and other mental health symptoms and functioning domains. This study used no treatment control groups and showed effect sizes as medium to large and significant. In many cases, those with more severe cases present with better outcomes. Boswell et al. focused on treatment that dealt with interpersonal and relational factors that are part of SUD diagnosis. This focus was chosen because interpersonal problems appear to be heterogeneous among disorders. Self-report measures of symptom and functioning outcomes and interpersonal problems were presented to 100 participants in a residential program with the treatment outcome packet (TOP) and the inventory of interpersonal problems IIP-64. The TOP contains scales that measure impairment in SUD and cognitive issues and several other scales. The IIP-64 assessment measures interpersonal functioning across eight scales that include interpersonal stress from cognitive distortions. Over time, an effect size was indicated by improving TOP scores from the interventions that pointed to an initial improvement in symptoms and functioning during treatment (Boswell et al., 2017).

Thylstrup, Schrøder, Fridell, and Hesse (2017) utilized the Mini International Neuropsychiatric Interview (MINI) to assess DSM criteria diagnostics. The Anti-social personality disorder module (ASPD) was used to assess several functional problems that included substance use issues. The ASI was also used at baseline and follow-up to determine SUD changes. Two groups of 176 patients were randomly allocated TAU (n=80) or TAU plus a psychoeducation REBT based program known as Impulsive Lifestyle Counselling (n = 96). Comparisons were made at the beginning of the interventions as well as at three- and nine-months follow-ups. The treatment outcomes showed an effect size that improved SUD issues in

those who had some form of anti-social personality disorder with co-occurring SUD. The study used control of treatment as usual measured against treatment groups receiving some form of REBT. A sampling of alcohol and drug scores was reduced significantly at the 9-month follow-up (Thylstrup et al., 2017).

Emmanuel and Funmilola (2015) studied senior secondary students who had substance use issues. This study randomly selected 120 individuals from three randomly selected schools. They were provided with the Drug Abuse Rating Scale (DARS), a 20 item 5-point Likert format test measuring drug abuse behavior. The students were exposed to treatment using REBT. The control group was student waitlists who did not receive treatment. The measures were given at pre- and post-treatment exposure. There was a significant reduction in drug abuse scores in outcomes when the control group and treatment group were compared. The implication is that the students in the experiment benefited from the treatment, as evidenced by the ability to discontinue use. The study showed that REBT therapy was effective in making a positive change in drug-using behavior.

Acosta et al. (2017) studied REBT's efficacy when delivered to veterans who had been diagnosed with post-traumatic stress disorder and subthreshold PTSD and who exhibited hazardous substance use. This study created a web-based self-management system that delivered REBT to veterans in VA primary care. Randomization of 162 participants was provided by placing half the treatment group into TAU (n=81) and a half into TAU plus the web-based intervention (n=81). The assessments used in Acosta et al. were the MINI that was used to examine current alcohol or other drug abuse or dependence, the AUDIT that screened for hazardous alcohol use at baseline. This study also used The Drug Abuse Screening Test-10 (DAST-10) to look at hazardous drug use and the Coping Strategies Scale (CSS) that assessed

change processes and skills taught in coping-skills treatment such as problem-solving and dealing with urges to use substances. These measures were used at pre- and post-treatment. The results showed that this REBT based intervention reduced alcohol use that pointed to a harm reduction that corresponded with a reduction in problems in other areas. This intervention also showed positive changes in the ability to cope and increased social support.

Discussion

The previous section utilized a systematic literature review to examine the efficacy of ACT, DBT, and REBT treatment outcomes based upon reducing DSM 5 criteria symptoms. The DSM 5 criteria symptomology was interpreted to include interpersonal to mean depression and anxiety.

ACT evidence provided for statistically significant effects for improvement in psychological, cognitive, and family domains. Additional studies showed significant improvement in psychopathology from depression, panic, and anxiety. There were differences provided showing significant effect from ACT over TAU. Although some effects initially appeared small, they increased over time that provided evidence that the use of ACT tools increased outcome measures post-treatment. This was not found in other modalities. Other ACT studies showed that the target product of ACT, PF, was increased through an increase of emotion regulation, reduced stress, and use of substances and a psychological condition in many areas.

DBT evidence indicated that DBT reduced pathology overall. DBT assisted with the reduction of substance use, improve mental health and relationships. Outcomes showed improved relationships, aggression reduction, and increased behaviors that allowed for progress in treatment plan goals. These improvements were shown to be significant when compared to TAU. One area that came up in several of the studies was the decrease in difficulties in emotion

regulation. This was correlated with reduced hospitalization rates, lessened anxiety and depression with improvements in psychosocial functioning and lower incidents of suicidal ideation.

REBT evidence indicated a negative correlation with medium effect size between improved rational beliefs and psychological distress. Large significant effect sizes were seen in reduced distress and improving overall health behaviors, but medium effect sizes were captured overall when looked at based on follow-up. Some improvements were seen in anger, behavior, depression, emotions. There were small but significant effect sizes for outcome measures on follow-up for anxiety and cognitive issues. Scores for substance use showed a reduction in alcohol use and reductions in the frequency of psychological or behavioral issues. One study pointed to the effectiveness of improved SUD issues in persons with an anti-social personality disorder. One area of note in the REBT studies was a reduction in alcohol use, considered a type of harm reduction correlated with improvement in social problems.

Improved Quality of Life

This section of the material provided an in-depth look at and compared improved quality of life from the administration of each of the modalities studied in this qualitative systematic literature review. The comparison looked at which treatment modality has been associated with the highest level of evidence of improved quality of life as defined by improvements in health and wellness, increased social networks, improved emotion regulation, and reduction in irrational thinking.

Efficacy of ACT Based on Improved Quality of Life

This section discussed findings from the literature review that look at improvements in quality of life (QOL) from the use of ACT as an intervention for SUD.

Lee, An, Levin, and Twohig (2015) provided information on the use of ACT from a meta-analysis. This study measured ACT efficacy as compared against other treatments that dealt with substance use outcomes. This study used a quantitative review meta-analysis and screened 55 articles, excluding 44, that did not meet the criteria to determine the efficacy of ACT on QOL in SUD. The remaining 11 articles were analyzed and provided results to show that ACT is effective in treating SUD. This study pointed to lacunae in the literature regarding change mechanisms of psychological flexibility (PF).

In many cases, ACT studies measure PF that has been correlated with improved QOL. When SUD studies were analyzed, sixty percent did not use PF as part of the studies. This was shown to be difficult in studies in this area because it does not allow for the study of improvement over time and points to areas of need for further study. An additional barrier encountered while writing this qualitative systematic literature review is reflected in Lee et al. study that uncovered evidence that only 30% of the studied trials included measures for QOL or psychosocial functioning. This is not in line with one of ACT's goals to improve overall functioning levels by encouraging clients to engage in valued behaviors. Research on ACT should assess secondary outcomes like QOL to provide better data (Lee et al., 2015).

Meyer et al. (2018) studied veterans who had PTSD and alcohol use disorder (AUD) and the efficacy of treatment using ACT. Participants in the study were referrals (n=43) from the Veterans Administration in an uncontrolled pilot study. The study consisted of the delivery of 12 weeks of individual outpatient sessions of ACT. Lessons were daily mindfulness practice worksheets to guide participants in engaging ACT processes of practicing values-based behaviors. The measures for QOL were designed into the program using pretreatment baseline testing and follow-up measures. The world health organization (WHO) QOL scale was used to

test changes in quality of life measures. This is a 24 item Likert type scale from 1-5 that and measures global QOL. The AAQ-II scale was used to assess levels of psychological inflexibility. The 15-item Brief Experiential Avoidance Questionnaire was used to assess experiential avoidance that is also the ineffective use of behaviors to control emotions and thoughts. Functional impairment from the SUD was measured using the World Health Organization (WHO) Disability Assessment Schedule 2.0 (WHODAS 2.0. When post-treatment follow-up was compared to baseline and the control group, the ACT treatment correlated with improvements in PTSD and AUD symptoms, functional impairment, QOL, and reduction in depressive symptoms at post-treatment follow-up. In addition, total drinking, heavy drinking days, and functional disability further improved between post-treatment and follow-up. This points to an increase in efficacy due to possible practice from using ACT interventions (Meyer et al., 2018).

Davoudi, Omidi, Sehat, and Sepehrmanesh (2017) assessed psychiatric disorders, depression, anxiety, and smoking cessation. This study looked at male smokers and smoking cessation treatment using ACT protocols. Participants (n=70) were split into two groups for control (n=35) and intervention (n=35) with pre and posttest randomized controlled trials. Study data were collected using the structured clinical interview (SCI) for DSM-IV disorders, the Beck depression inventory (BDI), and the Beck anxiety inventory (BAI). The BDI is a 21-item inventory that measures levels of depression. The BAI also has a 21-item Likert scale inventory used to measure functionality levels due to anxiety. Some of the items on the scales point to anxiety and depression that compromises QOL. The study looked at mean assessment scores at three points during the treatment. The results showed a significant between-group difference

between the act and control group. This indicated that those persons who had been treated with ACT had lowered levels of depression and anxiety (Davoudi et al., 2017).

Levin, Haeger, Pierce, and Twohig (2017) provided data on the use of ACT from a study using a web-based self-help ACT treatment for college students (n=79) who presented with a broad range of psychological issues that also included problems with alcohol. The study was designed as a randomized control study that randomized participants into two groups for control (n-39) and ACT treatment (n=40). The study was conducted over two cohorts from the fall 2014 (n = 30) and spring 2015 semesters (n = 49). Those in the treatment group were provided with ACT sessions and asked to complete six self-help sessions within four weeks. The control group was left on a 4-week waitlist to enter treatment. Assessments used were the Counseling Center Assessment of Psychological Symptoms (CCAPS), a 34 item scale to assess a range of psychological symptoms, and the Mental Health Continuum–Short Form (MHC-SF) that is a 14-item assessment used to measure positive mental health, by assessing emotional, psychological, and social well-being, both of which provide scores for mildly severe and clinically significant problems that included alcohol. The latter scale also measures life satisfaction, personal growth, and purpose in life. As a secondary measure, the AAQ-II was used to measure psychological flexibility. The Valuing Questionnaire (VQ) is a 10-item measure of values that provide an assessment to look at progress toward valued living. Although not all measures showed improvements, several processes did have a significant improvement that mediated treatment outcomes. Compared to waitlist participants, those that received ACT treatment improved distress, general anxiety, social anxiety, depression, and positive mental health (Levin et al., 2017).

Thekiso et al. (2015) treated patients with a dual diagnosis for AUD and depression or bipolar disorder using an ACT protocol. A total of 52 patients were included in the study. Twenty-six patients with AUD and either depression or bipolar disorder received ACT group therapy in parallel with TAU and were compared with a control group of 26 patients who had received TAU alone. Assessments included the BDI and BAI and the obsessive-compulsive drinking scale (OCDS) and the Young Mania Rating Scale (YMRS). The OCDS is used to look at alcohol cravings, and the YMRS assesses mania, sleep issues, and irritability. The study was composed of a control group that received TAU and the ACT group that received a 4-week manualized ACT group therapy for dual diagnosis. Assessments were taken at baseline, discharge, and three and six months follow-ups. Clients assessed at those points in the protocol had shown improvement for fewer depression and anxiety symptoms that correlate with improvements in QOL (Thekiso et al., 2015).

Efficacy of DBT Based on Improved Quality of Life

This section discussed findings from the literature review that looked at improvements in quality of life (QOL) from DBT as an intervention for SUD.

Flynn et al. (2019) is a mixed-methods study that contained both quantitative and qualitative data to determine the efficacy of DBT as a treatment. The treatment was a six-month DBT SUDT program. Quantitative data was gathered using self-report measures through questionnaires. Participants with a dual diagnosis (n = 64) were recruited from a community-based public addiction treatment service in Ireland. The Five Facet Mindfulness Questionnaire (FFMQ) is a 24-item scale that measures the participant's ability to engage in mindfulness. The Dialectical Behavior Therapy Ways of Coping Checklist (DBT-WCCL) is a 59-item scale that measures participants’ adaptive versus maladaptive coping responses to difficult situations over

the previous 30-day period. The Core Impact of Substance Misuse Scale (CISMS) gathered information about the frequency and severity of substance misuse, and measures emotions and feelings related to substance misuse and participants' perceived recovery on a Likert scale.

Flynn et al. 's qualitative data were gathered from a mixed methods questionnaire administered at the completion of treatment and at follow up. Quantitative questions on the assessment gathered data by asking participants to rate their perception of treatment experience and the skills they learned. The qualitative data was gathered when participants were asked to provide narration by describing their intervention experience. Quantitative data was gathered at baseline, at six months, and twelve months at follow-up. Qualitative data was gathered at six months and at follow up. Results from the analysis concluded significant improvement for the acquisition of mindfulness skills. There were significant positive changes in participants' ability to regulate emotions. The qualitative data were analyzed by looking at themes in the reports. One theme was known as the new lease on life theme. This area was directly related to QOL. Reports indicated that participants had improved in their ability to use DBT skills. This use of tools was directly related by the participants as assisting with dealing with aversive emotions and stressors in using positive behaviors. The report themes included increased confidence/assertiveness and new insights into self and addiction (Flynn et al., 2019).

Cavicchioli et al. (2019a) studied DBT when used in an outpatient setting. The setting used DBT skills training as a treatment for alcohol use disorder over three months. This study was performed by comparing the DBT treatment and its primary and secondary outcomes with the same treatment in a mixed inpatient outpatient format for 171 individuals who voluntarily sought treatment. The study assessed the participant's ability to regulate emotions with prosocial behavior and coping tools and reduce ineffective emotional avoidance behaviors. The AAQ-II

was administered to look at several items from the treatment, but the secondary outcomes became important to QOL. Emotional avoidance behaviors showed a significant decrease from baseline. This implied that the rigidity of previous psychological reactions that superseded other contingencies in behavior had been reduced. The role of DER was studied by looking at difficulties with emotion regulation that were related to emotional avoidance. Demonstrating that the intervention reduced difficulty with regulating emotions provided a better understanding of its role in reducing ineffective control strategies regarding a better QOL. The ASI and DERS assessments also compared outcomes relating to the secondary outcome measures. These items, when analyzed, provided information that supported initial positions that skills acquisitions from the DBT intervention reduced maladaptive behavior and increased the ability to regulate emotions that equated to the ability to function while experiencing highly charged emotional states (Cavicchioli et al., 2019a).

Sahranavard and Miri (2018) was a study described as a quasi-experimental before and after the control study. Female substance abusers (n=30) from Iran were participants in a study that looked at DBT efficacy and reduced their depression levels after treatment for SUD. The screening instrument used was the BDI. DBT treatment skills were delivered while the women were in treatment. There were eight 90-minute sessions. The BDI was provided to the participants per treatment as the baseline and then again post-treatment. The QOL, as defined, would include depression reduction. The study was used to compare outcomes for depression using standard CBT and DBT for SUD treatment. Subjects were selected through the available sampling method and randomly assigned to CBT (n=10), DBT(n=10), and control groups (n=10). Mean depression scores were taken from the analysis of the data at pre- and post-treatment. The conclusion from the data represented a reduction in symptoms of depression in

both treatment outcomes. The effects for DBT indicated that a greater significant percentage of the participant population had remission from depression when compared to CBT. The study concluded that DBT effectively treated SUD depression symptoms (Sahranavard & Miri, 2018).

Hadland (2019) noted that standard DBT had been modified to fit the specific needs of patients struggling with SUDs due to the high rate of SUD in DBTs main target population. This study used a quantitative study with a pretest-posttest within-subjects design to look at treatment for eating disorders comorbid for SUD. There was no control group in this study of 28 participants. While the literature describes a lacuna of studies that target SUD alone, many studies looked at DBT and SUDT with co-occurring disorders, but few looked at SUD alone. Hadland points to the tailoring of DBT for SUD to target behaviors that interfere with QOL. The treatment is performed in the service of reducing maladaptive behaviors. This is designed to decrease use and increase community reinforcement of prosocial behaviors. According to this literature, some of the efficacious interventions are those found in the distress tolerance skills module. This promotes the ability of the person with a SUD to engage in proper behavior despite feeling distressed. The assessments used to test for differences in QOL changes were the DERS. The DERS was used to hypothesize that there would be a reduction in ineffective emotion regulation strategies that would produce better emotion regulation. A statistical analysis of the data confirmed the hypothesis and pointed to a small but significant difference in effect from baseline to post-treatment outcomes (Hadland, 2019).

Cavicchioli et al. (2019) studied pre- and post-treatment differences in SUD severity after treatment with DBT. The study examined a voluntary sample of 108 individuals admitted to San Raffaele Hospital in Milan, Italy, who was diagnosed with SUD for alcohol based on DSM 5 criteria. Participants identified as experiencing co-occurring SUDs such as AUD and opiate use

disorder. The DERS was used to assess the reduction of maladaptive coping strategies. The ASI assessed areas of the SUD problems that were related to QOL. The specific items that this assessment looks at are in the areas of medical, employment, alcohol, drug, legal, family-social, and psychiatric. The DBT-WCCL was used to assess the pre and post clinical use of DBT skills to reduce dysfunctional coping strategies. The study replicated previous trial's efficacy rates with the use of DBT. There were significant improvements in SUD severity from treatment baselines. Cavicchioli et al. identified a large and significant decrease in emotion regulation difficulties equated to this qualitative systematic literature review's values for QOL. It was theorized that the reduction of DER could impact overall SUDT and inform future treatment models (Cavicchioli et al., 2019).

Maffei, Cavicchioli, Movalli, Cavallaro, and Fossati (2018) was a three-month DBT skills training study on efficacy. DBT skills were delivered to 244 participants over 36 sessions that lasted three hours, for a total of 108 hours of exposure to DBT skills training. The purpose of the study was to measure improvement in emotion regulation during treatment. The measures used were provided to participants at pre- and post-treatment. The study used the DERS and ASI to assess changes. The DERS pointed to the participant's ability to accept emotions and engage in goal-directed behavior. Also, it measured the reduction of impulsive and deleterious behavior. Participants who had completed treatments showed a significant improvement in emotional regulation and reduction in impulsive behaviors. There were moderate to large statistically significant changes from pre to post-treatment and indicated the reduction of the ability of the emotional state to diminish the capacity of the participant to take proper action. This included an increase in the ability to use effective emotion regulation strategies while experiencing aversive emotional states (Maffei, Cavicchioli, Movalli, Cavallaro, & Fossati, 2018).

Efficacy of REBT Based on Improved Quality of Life

This section discussed findings from the literature review that look at improvements in quality of life (QOL) from REBT as an intervention for SUD. This area of the literature review provided a few examples.

David, Cotet, Matu, Mogoase, and Stefan (2018) discussed that by 2018 there had not been a rigorous literature review meta-analysis performed on REBT for over 20 years. Even the information that came out of the literature had only two instances where some QOL measures could be seen in the studies. This meta-analysis compared REBT interventions with control groups, and even then, there were instances where the data was not robust due to having only two studies. This Meta-analysis found 83 studies that met its criteria. Sixty-eight studies had follow-up information with between-group analysis and 39 provided data within a group with pre-post or pre-follow-up analysis. The study examined if there was evidence for REBT's efficacy, its mechanisms of change regarding irrational beliefs, and change intervention outcomes (David et al., 2018).

Outcomes measures from David et al. (2018) appeared to be favorable. The different outcomes measured over many studies included large effect sizes for distress when looking at the posttest. Looking at behavioral and health outcomes that can be seen as QOL measures, REBT also posted positive large effect sizes. More specific outcomes for QOL measures for overall emotions like anger and depression showed a medium effect size at the posttest. The study identified a medium effect size for anger, behavioral outcomes, depression, emotional outcomes, health outcomes, and QOL when comparing pre and posttest outcomes. There were high effect size indicators for anger pre- and post-study with psychophysiological improvements pre follow up.

Acosta et al. (2017) conducted a randomized controlled trial that created a web-based intervention using REBT. The intervention was used to target substance use and PTSD. The intervention was presented to 162 symptomatic veterans who were working with VA primary care. The trial randomized combat veterans into primary care TAU (n=81) or TAU plus the web-based intervention (n=81). The interest of the study was to test mechanisms of change from REBT. These mechanisms included positive social support, hope for the future, readiness to change, and therapeutic relationships. These targets have been shown to have associations with treatment outcomes from the view of many different modalities that have shown to be effective for substance use and mental health issues. This study also included looking at the resilience, defined as coping resources that enable the ability to regulate emotions, increase positive social interactions, and provide tools to help cope positively. Participants in the Acosta et al. study were assessed pretreatment, for baseline and again at the fourth, eighth, and twelfth week with one and three months follow up. Assessments included several PTSD assessments that looked at self-reports of the negative effect of symptoms. The specific assessment known as the World Health Organization Quality of Life-BREF (WHOQOLBREF) is a 26-item assessment for measuring domains of physical and psychological health, positive social relationships, and environmental factors. The WHOQOLBREF was administered to measure QOL and personal satisfaction. The coping strategies scale (CSS) was used to assess change in processes involving problem-solving and effective tools to deal with urges. The Connor-Davidson Resilience Scale (CD-RISC) measures resiliency, with 25 items rated on a 5-point Likert scale (Acosta et al., 2017).

The QOL outcomes for the Acosta et al. (2017) varied. The participant's self-reported statistically significant effect on improvements in social and environmental domains during the treatment period. This was dampened by the post-treatment reports that showed that the QOL

domain improvements for social slowed at post-treatment and that there was no significant effect for QOL change over time. Thus, the study failed to find a treatment effect for change in QOL. The study reported that it is possible that the lack of effective change resulted from high baseline reports of QOL.

Discussion

This previous section provided a comparison of improved QOL based on the highest level of evidence elicited from studies that examined improvements in health and wellness, increased social networks, improved emotion regulation, and reduction in irrational thinking.

ACT literature review provided a paucity regarding QOL measures in early studies, while the number of studies that examined these criteria increased in later studies. In one meta-analysis, only 30% of studies mentioned some QOL measures. In those that did, there was a correlation of treatment improvements in symptoms of QOL. One study provided improvement data regarding total drinking, heavy drinking days, and disability and improvement between post-treatment and follow-up, indicating increased efficacy from continued use of ACT interventions. Additional studies showed improved distress, general anxiety, social anxiety, depression, and positive mental health.

DBT results appeared to be more robust due to the DERS scale used in many DBT studies that provide information on QOL. In some cases, the evidence pointed to small but significant improvements in QOL that were accompanied by significant improvement for the acquisition of mindfulness skills. There were significant positive changes in participants' ability to regulate emotions that were an indicator of improved QOL. One study that contained qualitative QOL data yielded improvement data in self-reports regarding a new lease on life.

Other data suggested a significantly improved ability to deal with aversive emotional states. One study compared REBT to DBT, where DBT showed greater remission from depression.

There were only two studies, one of which was a literature review that discussed QOL for REBT. In one REBT study, there was a large effect size for health outcomes with anger and depression reduction measures showing moderate effect sizes. QOL effects varied for REBT, and the data was not robust in this area. The second study failed to find a treatment effect for change in QOL.

Abstinence as an Outcome Measure

This section reviewed the effectiveness of the interventions studied by looking at evidence of abstinence before relapse as a measure of efficacy.

Efficacy of ACT Based on Increased Days of Abstinence Before Relapse

Bahrami and Asghari's (2017) study was an example of the difficulty in finding studies that discuss abstinence as an effect of treatment to measure efficacy. This study used ACT to determine its efficacy with persons who use methamphetamine. The overall findings suggested that ACT decreased symptom severity. This study was a semi-experimental study adopting a pre-test and post-test design using a control group. ACT was delivered in 12 sessions of 45-60 minutes weekly. There were 30 participants in the study. Fifteen were randomly assigned to each of the waitlist control group or an ACT therapy group. The study included the use of the ASI to measure baseline levels of use severity. The main assessment used to measure baseline has items within that are specific to the domain of substance users, according to Ljungvall, Persson, Åsenlöf, Heilig, and Ekselius (2020). The assessment included questions regarding days of substance use and other items that were measured within the domain. Bahrami and Asghari's work showed a reduction in alcohol use status and substance use status from baseline to post-

treatment but did not specify whether the improvements in item measurements were from abstinence or reduction. The study demonstrated significant effectiveness within the domain; however, the study's semi-experimental aspect with the lack of a psychotherapeutic control group prevented all external variables. The participants may have been affected by some conditions out of the researchers' control.

Davoudi, Omidi, Sehat, and Sepehrmanesh (2017) reported a nicotine use cessation study. This was a two-group pre/posttest randomized controlled trial. The study included 70 participants randomly assigned to an intervention (n=35) and a control group (n=35). Assessments included the structural clinical interview (SCI) and a Micro Smokerlyzer carbon monoxide monitor that measures exhale carbon monoxide levels. If the exhale level carbon monoxide levels were shown to remain at six parts per million (PPM), the client was considered a smoker. The study's findings showed that smoking cessation rates were higher in the treatment group than the control group from baseline to post-test. The number of patients in the intervention group who quitted smoking was significantly greater than the control group's number. In addition, greater efficacy was achieved with follow-up results at treatment termination (Davoudi et al., 2017).

Lee, An, Levin, and Twohig (2015) analyzed 10 ACT studies with a meta-analysis using days of abstinence to measure efficacy. There were 1,386 participants included in the ten trials. Five of the studies examined nicotine cessation. Six of the studies contained post-treatment data. Six of the studies included post-treatment substance abstinence data. Three of the studies considered provided data that showed a statistically significant medium effect size in cessation over TAU. Two studies provided positive outcomes but not to statistical significance, while one study showed a small effect size, not to the statistical significance that favored a cognitive-

behavioral intervention. When the five studies that looked at nicotine cessation were examined, the aggregate data yielded a significant statistical effect size favoring ACT over TAU. This study also touched on an item mentioned earlier that reducing substance use may lead to improved outcomes; however, it should not be the only focus of treatment. It can be difficult to parse out data of use cessation since results are mixed (Lee et al., 2015).

Authors of Gonzalez-Menendez, Fernandez, Rodriguez, and Villagra (2014) lead a randomized controlled trial to test ACT's long-term efficacy. It was compared to standard REBT. There were 37 female participants between the ages of 22 and 49 years who were studied. ACT was delivered to participants (n=18) in the experimental group by 16 weekly group sessions of 90 minutes. CBT was delivered to participants (n=19) in the control group by the same number of hours. The participants were incarcerated female inmates who had current substance use problems. The assessments relative to this portion of the project were the ASI and a baseline interview assessment. These assessments were delivered at pre and post-intervention, and follow-ups were conducted at six, twelve- and eighteen-months post-treatment. Data were analyzed using a mixed linear model. Outcome measures for the goal of abstinence were reported in percentages. At Post-treatment ACT, participants registered abstinence at 27.8% at the end of treatment, at six months, it was 42.8%, 84.6 at 12 months, and 85.7 at 18-month follow-ups. The CBT group in Gonzalez-Menendez et al. registered abstinence rates 15.8% at the end of treatment, 25% at 6-month, 54.5% at 12-month and 50% at 18-month. The differences were statistically significant in the comparison. The pre/ posttest of ACT alone showed a strong significant effect size in abstinence rates. There was no data on rates of abstinence before relapse.

Efficacy of DBT Based on Increased Days of Abstinence Before Relapse

Cavicchioli et al. (2019) performed clinical trials on a DBT intervention for alcohol use disorder (AUD) with co-occurring SUD. The study goal was the investigation of pre to post-treatment changes in consecutive days abstinent (CDA). The treatment consisted of a three-month skills training program. There were 36 sessions, each lasting 3 hours. There were 108 participants in the study. The program's intensive phase lasted for one month, with five sessions being taught each week. The post-intensive phase was two sessions a week for two more months of treatment. The Cavicchioli et al. study used the ASI for each client. Clients were assessed at baseline to determine use one month before treatment. During treatment, clients were given two random weekly urine drug screens accompanied by self-reported CDA completed at the beginning of each session. Self-report measures were also administered at baseline for the beginning of treatment, at one month, and treatment termination. The CDA was measured by the urinalysis results that backed the self-reports. When analyzed, the results showed significant moderate to large increases in CDA. To be specific, when baseline to post-treatment levels of CDA was measured, large improvements in lengthier CDA were discovered. This study replicated and extended evidence that had already shown similar empirical results using a stand-alone DBT intervention for treating SUD (Cavicchioli et al., 2019).

Maffei, Cavicchioli, Movalli, Cavallaro, and Fossati (2018) was an initial study of DBT as a stand-alone treatment for SUD. After studying previous evidence that DBT had shown efficacy in treating emotion dysregulation that has been shown to play a role in SUD, Maffei et al. designed a study to test the theory that DBT could increase CDA. The treatment design was a 3-month DBT program. There was a one-month intensive phase of five 3-hour sessions per week, followed by two months of two 3-hour sessions per week. The study used the ASI for each client. Clients were assessed at baseline to determine use one month before treatment. A blood

test was administered that measured Carbohydrate-deficient transferrin (CDT) through capillary electrophoresis as a biomarker for the severity of alcohol use at the beginning and end of treatment. During treatment, clients were given two random weekly urine drug screens accompanied by self-reported CDA completed at the beginning of each session. Self-report measures were also administered at baseline for the beginning of treatment, at one month, and treatment termination. The CDA was measured by the urinalysis results that backed the self-reports. One hundred fifty-seven participants of an initial 244 subjects completed the program. There was a comparison of CDT values at the beginning and end of treatment to support alcohol use reduction using the severity of the biomarker. Of the 157 participants, there was a significant effect size in that 73.2% of the completers achieved abstinence at the end of the program. The results showed that participants improved in the severity of alcohol use. There was a large increase in CDA between the last month before admission to treatment and the end of the program that may have been limited to this study (Maffei et al., 2018).

Flynn et al. (2019) studied the efficacy of DBT for treating SUD by enrolling participants who were recruited from a community-based public addiction treatment service in a mixed-method quantitative/qualitative measures trial. The study included 64 participants who had been dually diagnosed with SUD and borderline personality disorder. The Cork Impact of Substance Misuse Scale (CISMS) was developed for the study to measure SUD changes. Its questions were designed to gather information about the frequency and severity of substance misuse, while also measuring emotions and feelings related to substance misuse using a Likert type scale. Designers of the Flynn et al. study created a mixed methods questionnaire for the research. It was administered after the intervention and at follow-up. Quantitative information was used to rate experience with the program from usefulness to skills acquired.

Quantitative self-report measures examined emotion regulation, mindfulness, adaptive, and maladaptive coping responses and recorded substance misuse. The qualitative component asked participants to describe their experience in the study. Data collection was performed at the baseline or start of the intervention, between six months and the end of the intervention, and at a six-month follow-up. The questionnaire was provided during the intervention and at six months post-treatment. The CISMS recorded intake of any substances 30 days before treatment, at the end of treatment, and at follow-up. The baseline indicator showed that 63% of the participants had indicated substance use in the thirty days before treatment, and 37% reported no substance use. For those persons who completed treatment, 19% reported use in the previous month while 81% reported no use. After analysis, quantitative results indicated reductions in binge drinking and use of drugs. Statistically significant differences were found over time for reported substance use (Flynn et al., 2019).

Nyamathi et al. (2017) performed a randomized controlled trial that compared DBT with another health program in treating SUD. The primary outcome measure was drug abstinence at a six-month follow-up. Secondary measures were alcohol abstinence and abstinence from alcohol and drugs combined at six months follow up. The program was comprised of a six-week group session with one group per week. Each group was 60 minutes with 5-7 persons in each group. The randomized controlled trial studied 130 females (aged 19–64) randomly assigned to each group in either DBT therapy (n=65) group or a health program group (n=65). This was followed by six weeks of one-to-one sessions. The treatment lasted for twelve weeks. Ongoing contact with providers was encouraged each week for up to six months post-treatment. Abstinence was measured by self-report and urine analysis. Any person who reported being abstinent but then provided a urine sample with a positive result was not considered abstinent. Substance

information was captured using a self-reported form, the Texas Christian University Drug History (TCU) form II. This captured frequency of drug use over the last six months. This information was accompanied by data gathered using a 5-panel FDA-approved urine sample collected at baseline before treatment and at 6-month follow-up. At baseline, 67.75 of the DBT group reported using drugs in the last six months while alcohol use was 41.5%. The efficacy of the DBT program showed in the results that compared baseline to 6-month follow-up. 65.5% of the DBT participants reported abstinence that was confirmed by urine samples. Analyzed data displayed a significant effect size in change from use to abstinence (Nyamathi et al., 2017).

Efficacy of REBT Based on Increased Days of Abstinence Before Relapse

Guidelines to review literature were followed to discover and parse out data for REBT efficacy for increased days of abstinence. Few REBT studies provided data regarding the REBT modality and increased days of abstinence.

Acosta et al. (2017) were conducted to discover the ease of applicability of a web-based REBT intervention designed to target persons with SUD who suffered co-occurring disorders for PTSD to reduce barriers to receiving EB treatment. This study was a randomized controlled trial of 162 participants assigned to TAU (n=81) or REBT (n=81). The REBT program was comprised of 24 modules that were self-paced and took approximately 20 minutes to complete. Participants were asked to complete the first 12 modules in six weeks. They were then asked to revisit important modules and complete additional modules of their choosing during weeks 7 through 12. The study looked at several metrics that had shown evidence to mediate treatment outcomes. The participants were veterans who were involved in VA primary care.

Acosta assessments were provided at baseline, weeks 4, 8, and 12 during the active intervention phase, and at 16 and 24 weeks for follow-up. The Alcohol Use Disorders

Identification Test (AUDIT) was used to screen for hazardous alcohol use at baseline. The Timeline Follow-Back (TLFB) interview assessed self-reported substance use using that looked at past daily alcohol use in and use of other drugs in the past three months before treatment. Outcomes measures included percent of drinking days, percent of heavy drinking days, and percent of drug use days. The study also gathered corroborating data by contacting a collateral informant by phone who could verify information about past daily substance use over the last 30 days. Analyses were performed for outcomes during the 12-week treatment, so that outcome measurements were between baseline to the end of treatment. Participants reported significant declines in percent of heavy drinking days. Results showed that participants had significant reductions in alcohol use. The study did not focus on abstinence, and there was no significant effect on the percentage of days drinking. The interventions showed a harm reduction effect with fewer drinks consumed on days that drinking occurred (Acosta et al., 2017).

Thylstrup, Schrøder, Fridell, and Hesse (2017) studied a brief intervention that supplemented standard SUD treatment. The design was to test the efficacy of a brief intervention created for use in situations with limited resources and supplement programs to add REBT. The study design was a phase one randomized controlled trial in a community-based substance abuse treatment clinic. A total of 176 patients were randomly assigned to treatment as usual (n = 80) or TAU plus an REBT based psychoeducation (n = 96). Sessions in the modules were based on REBT's cognitive disputation model designed to link behaviors to consequences. The study used the ASI to determine composite scores for days abstinent 30 days before treatment. Assessments were performed at baseline before treatment and at follow-up interviews at 3 and 9 months after randomization. Information from the analysis provided data on past month abstinence and the percentage of daily users. Statistically significant results were obtained from the data analysis. At

the 3-month follow-up, patients who had been randomized to the REBT group had increased days abstinent compared to patients randomized to TAU and had less severe drug use. The treatment group reported a statistically significant but small effect size in reducing drug use at both 3 and 9 months. The control group showed a small effect size increase in use at three months and a small reduction nine months from baseline. Alcohol use decreased with small effect sizes in both groups at 3 and 9 months. Complete abstinent rates remained constant in the control group. The treatment group showed 3% abstinence at baseline, 17 % at three months, and 21 % at nine months. At the 3-month follow-up, patients who had been randomized to the treatment group had increased days abstinent compared to patients in the control group and had less severe drug use (Thylstrup, Schrøder, Fridell, & Hesse, 2017).

Discussion

Act evidence for abstinence as an outcome measure indicated that many of the chosen studies did not use abstinence as a measure of outcome. It is possible that abstinence was not chosen since the study examined ancillary symptoms that are thought to be a part of the focus of ACT interventions. In some studies, the ASI was used to assess baseline levels of use severity, including questions regarding days of substance use and reduction in use status, although there was no differentiation between abstinence and reduction. Another study looked at smoking cessation rates with outcomes of cessation tied to persons who received treatment. This did not indicate the length of cessation before relapse. Another indicator of reasons that ACT studies do not focus on this measure was that although the reduction in substance use may lead to improved outcomes; however, it should not be the only focus of treatment.

DBT evidence provided statistically significant outcome measures with consecutive days abstinent (CDA). In the case of DBT, studies looked at cessation and abstinence as a measure of

performance. In some of the studies represented, measures that looked at cessation included urine samples, self-reports with an increase in reports of lessened use or no use, and blood samples looking at biomarkers for alcohol consumption that provided outcomes with better CDA measures. Studies theorized that DBT could increase CDA, showing more study results that indicate CDA due to this focus. Results showed significant moderate to large increases in CDA. Some baseline to post-treatment levels of CA were measured, large improvements in lengthier CDA were discovered.

REBT results appear to point to a stance that did not include CDA or abstinence as the primary measure in studies. Studies used self-reports combined with collateral informants to assess the percent of drinking days, percent of heavy drinking days, and percent of drug use days. The focus was not on abstinence but on harm reduction. Although data for outcomes on CDA was limited, there was evidence that REBT interventions were efficacious with small effect sizes in reduced use and, in some cases, an improvement in complete abstinence following treatment that included the REBT modality.

Correlation Between Treatment Length and Positive Outcomes for Treatment

Several articles discuss the LOS(LOS), duration of treatment, or the dose-effect relationship regarding treatment outcomes. The literature had mixed outcomes when reviewed. It appeared that the most recent information for LOS discussed outcomes that were tied to the quality of the interventions rather than the amount of time a client spent in a program. There was still some evidence affirming a correlation between LOS and better outcomes, but it was moderated by other relevant data such as psychosocial factors extending beyond simple time in treatment.

Turner and Deane (2016) studied all clients who entered a Salvation Army facility to determine whether optimum LOS could be determined. There was evidence that longer LOS has been associated with favorable outcomes. Turner and Deane suggested that optimal LOS is influenced by participation and the types of problems that are being addressed. This study assessed incoming clients at baseline using the ASI alcohol and drug composites and the Recovery Assessment Scale (RAS). The RAS is a 24-item measure that looks at self-report perceptions of recovery and includes goal success and not being dominated by symptoms. Three hundred eighty clients were assessed at intake and three months after treatment to determine the reliable change from baseline. The reliable change was defined as a difference, as shown by the reliable change index for the measure. The hope was to identify change to instruct treatment providers to modify duration, completion, and dropout rates. Still, other studies supported the linear relationship between LOS and self-perceptions of wellbeing and recovery factors. (Turner and Deane, 2016). The results showed that change would be more likely to occur from 1.5 to 2.5 times at a 90-day threshold. This study also marked the mean LOS that differentiated reliable change from no improvement was 37.37 days that point to longer LOS as being more efficacious.

Kramer Schmidt, Bojesen, Nielsen, and Andersen (2018) provided evidence of optimal LOS by carrying out a systematic literature review and regression analysis of randomized controlled trials for SUD clients who had participated in intensive outpatient treatment. It noted that without evidence, LOS for SUD was based on consensus. The regression analysis accounted for treatment outcome as a function of duration. Three items measured were a reduction in long-term alcohol use measured in percentage of days abstinent (PDA), a reduction of the percentage of heavy days drinking (PHD), and number, as a percent, of participants abstinent (ABS). 48

Studies with 8948 participants were analyzed. Findings were mixed in many of the studies. The studies mentioned found inverse associations between longer duration of treatment and drug use outcomes. When the aggregate data was analyzed, the result of the meta-regression was that planned weeks, planned sessions, actually attended sessions, attrition rate, or frequency of planned sessions per week, was not associated with improvement of long-term alcohol use outcomes. There was a positive correlation found in the number of assessments that were performed over time. When more assessments were completed, there was a positive correlation associated with the improvement of PDA and PHD Kramer Schmidt, Bojesen, Nielsen, and Andersen (2018).

Marceau, Kelly, and Solowij (2018) explored improvements in emotion regulation from several points of view, citing that difficulties in emotion regulation influence SUD severity and affect treatment outcomes. The study researched impairments in how executive functions relate to emotion regulation problems. The study used a cross-sectional design. An all-female participant study had entrants who were attending residential treatment, completed the DERS and behavior rating inventory, and a working memory index (WMI). These results provided evidence that problems with task performance were related to the inability to regulate emotions. The study posited that skills that could improve task-switching performance might help promote effective emotion regulation and improved SUDT outcomes. No significant correlations were found between DERS scores improvement and several other measured subcategories that included treatment length.

Much like the idea that genetics is a vital factor in understanding SUD but cannot be removed from social settings described by Barlow (2019), perhaps time in treatment cannot be separated from other important factors like therapist ability. This becomes an important factor

when determining if treatment length is used to show meaningful data independent of variables that influence outcomes. Goldberg, Hoyt, Nissen-Lie, Nielsen, and Wampold (2018) presented evidence and discussed the effects of the therapist's ability over time on SUD treatment outcomes. The author reanalyzed a data set of outcomes by 158 therapists looking for the presence of significant between-therapist variability in patient outcomes. The data suggested that the therapist accounted for statistically significant variance in outcomes that could not be accounted for in other measures of caseload characteristics. An interesting finding of the Goldberg et al. (2018) study was the difference between higher and lower performing therapists. Higher performing therapists possessed greater facilitative interpersonal characteristics such as warmth and empathy, more developed interpersonal skills, and more experience. Higher performing therapists showed improved outcomes with more time for clients in treatment, while those therapists who did not perform as well showed decreases in outcomes, the more time a client spent in treatment with them. Goldberg et al. concluded that change outcomes were a function of therapist ability and the length of time in treatment. For example, clients who collaborated with a better counselor who monitored their progress might shorten treatment time and receive better outcomes. A caveat from the study is that it is difficult to separate LOS as a single factor. Greater LOS may decrease outcome measures (Goldberg et al., 2018).

Goldberg et al. (2018) showed little difference between a higher or lower performing therapist at shorter treatment lengths. This is a paradox for LOS. In many dose-effect situations, it would seem to reason that to get the same effect from either type of therapist, it would be necessary for the client to spend less time with a therapist who provided better outcomes and more time with therapists who brought about less effective outcomes. These findings suggest the opposite. If a client is with a good therapist, they may want to continue with a longer treatment

period. Clients working with a less effective therapist may not see better outcomes with lengthier stays (Goldberg, Hoyt, Nissen-Lie, Nielsen, & Wampold, 2018).

Marel et al. (2019) noted that much of the research in the area of LOS provides evidence of a positive association between treatment duration and favorable outcomes. This study was a prospective longitudinal cohort study and provided information as to the length of treatment. Participants were persons with SUD for opiates who continued to utilize treatment from agencies that treated heroin dependence. The study took place over ten years. Of those persons who began the study, 70.1% of the original cohort remained. The authors identified five distinct outcome groups. These were: 1)17% of the participants were considered long-term stable, which meant a decrease in use and treatment utilization. 2) 13% of the cohort was considered a long-term success that meant there was a decrease in use with a decrease in treatment utilization until each person obtained abstinence maintenance and then no longer utilized treatment. 3) 12% of the cohort were considered treatment failures that meant there was no decrease in use, and the clients continued to use treatment. 4) 9% of the cohort was considered a late success that meant they experienced a gradual decrease in heroin use while increasing treatment utilization. 5) 9% of the cohort were considered relapsed, which implied a relapse into continued use and decreased treatment utilization.

Marel et al. (2019) discovered that membership in the group over time predicted substance use outcomes. The outcomes pointed to an important role of treatment in SUD and that a significant number of persons will attain abstinence without ongoing treatment, and some will continue to use despite long term treatment. The relationship between treatment length and outcomes are complex and mixed. Study outcome measures suggest the importance of recognizing nonresponse to treatment and making changes to treatment as nonresponse occurs.

The treatment failure group spent more time in treatment than any other group while showing poorer outcomes. In this case, LOS is not indicative of better outcomes. Those in this group were associated with a greater number of treatment episodes that have been associated with poorer treatment outcomes. The results indicate that to increase effectiveness with time in treatment, counselors should provide robust relapse prevention and follow-up to address relapse early (Marel et al., 2019).

A sequential randomized control study by Petry, Alessi, Rash, Barry, and Carroll (2018) explored treatment retention to increase treatment length using contingency management (CM) reinforcement. The authors investigated the efficacy of attendance with 6 or 12 weeks of attendance in treatment using CM. Participants were randomized to treatment as usual for six weeks or CM for six weeks. The CM condition group members were offered prizes ranging from about $5 to $20 and a bonus prize of $100. Participants were given a chance to draw one card for each day attended. Participants were again randomized to TAU for six weeks or CM and treatment for six weeks at six weeks. The study examined the differences in outcomes by regular urine sampling twice weekly throughout the study. Participants who had been randomized to the CM treatment group provided fewer random samples and came to more groups than those who did not receive CM. Those who attended 12 weeks of CM showed the most efficacy for treatment. A greater number of days of abstinence and a greater number of days attended were correlated with longer periods of abstinence. In this case, it was greater treatment length with a greater number of sessions combined with CM provisions to provide impetus to attend groups correlated with longer abstinence (Petry et al., 2018).

Provider Experience, Training, and Education

Counselor education and experience have been correlated with better efficacy outcomes in SUD treatment. Chasek and Kwata (2016) asserted that counselor training should be rigorous, competency-based, and include clinical training experiences. Principles of education should unify and strengthen counselors and assist them in providing ethical and effective treatment.

Advanced education is a strong predictor of a counselor adopting best practices through EB practices, according to Dawson (2019). Counselors who have advanced graduate degrees adhere to EB practices, are more open to adopting new ideas and are more easily able to adapt and identify ethical issues. Counselors who are not educated and trained to use EB practices cannot help clients adequately and cannot often assist clients who are dually diagnosed. Lower education in the SUD counseling field has been associated with poor ethical decision making (Dawson, 2019).

Doumas, Miller, and Esp (2019) concluded that most counselors in the field of SUD are not prepared to deliver EB practices despite standards dictating that counselors are expected to deliver these practices. Lack of knowledge and education are barriers to using EB practices. Education in such practices increases counselor self-efficacy that has been positively correlated with effective client outcomes. The authors trained counselors in the use of motivational interviewing. Data obtained after the study indicated that participants reported increased self-efficacy relative to assessment, treatment planning, counseling, and case management.

The correlation between education and self-care to combat burnout in counselors who treat SUD patients was the focus of the research from Garcia (2017). The research's underlying goal was to look at possible causes of burnout and the procedures to reduce burnout. Practitioners are often faced with extensive work and caseloads. Counselors who experience

burnout have been correlated with less effective outcomes. According to Garcia (2017), receiving education on CBT techniques to reduce burnout correlates with higher efficacy. In this study, SUD counselors were recruited from two local facilities to participate in surveys that gathered demographics and data on counselors' interventions to combat stressful situations. A quantitative cross-sectional analysis of Garcia's results showed that counselors (n=30) with higher education are more likely to engage in self-care when faced with burnout. There was a statistically significant difference in the use of self-care based on different education levels. This was positively correlated with years of experience in the field. The study suggested that utilizing CBT and self-care can improve recovery from burnout. Persons with higher education viewed self-care more optimistically than those who had less education. Clinicians who had been educated or who had more years of experience were more likely to view self-care as an appropriate intervention to thwart burnout (Garcia, 2017).

Vaughn (2019) utilized the substance abuse treatment self-efficacy scale (SATSES) and a demographic questionnaire created in Survey Monkey to study participants who were master's level licensed professional clinical counselors (n=80). Participants were studied to determine whether education and counselor experience influenced self-efficacy perceptions of counselors. Recruitment used the snowball method. The surveys were distributed through email, weblinks, and social media to public contacts and social connections known to the researcher. Participants were given one month to fill out the SATSES and questionnaire. They were emailed after two weeks as a reminder. Of the initial contacts, 65 responses were received from the study (n=65). Higher self-efficacy levels allow for determining choices, sustained activity, greater levels of interest, and the length of time that effort will be used to engage in activities. The study indicated that an increase in education and length of time in the field was correlated with repeated

successes, greater mastery, and lowered defensiveness about performance. There were significant effects on self-efficacy from both experience in the field and the level of education that was specific to SUDT in both formal education and the continuing education credits.

The information on experience education and training in SUDT was sparse. The limited data pointed to improved outcomes in areas of burnout reduction and self-efficacy. The literature indicated an increase in self-efficacy, increased adoption of EB practices, an increase in the use of practices that can help prevent burnout. These measures appeared to allow for more efficacious treatment in the SUD field but do not measure direct treatment efficacy outcomes based on education level.

Treatment Based on Acuity of Symptoms

One possible discussion that was an important factor in the debate is that treatment is the most efficacious treatment based on the acuity of symptoms. Another discussion was that of matching clients with specific interventions. One theory regarding treatment was that patients could be matched to a specific treatment to attain more effective outcomes. The seminal program is known as Project MATCH, that looked at SUD outcomes based on the matching principle, tested this theory (Hell, Miller, Nielsen, & Nielsen, 2018; Davis, Bergman, Smith, and Kelly, 2017).

Hell et al. (2018) proposed a study protocol for a randomized controlled trial to study treatment results if the client were to match themselves to treatment. This study cited data from Project MATCH, noting that the project dealt with treatment matching and studied (n=1726) participants. Project MATCH had been performed based on the theory that different types of patients would respond to different treatment interventions. According to Hell et al. (2018), over two dozen hypotheses were tested in MATCH, many of which had been studied in previous

clinical trials. Theses hypotheses were predictions of how patient assignments to treatments could be made. Results from the study produced a few statistically significant results. Almost all matching effects reported in earlier studies failed confirmation, and in some cases, results worsened. Project MATCH authors questioned whether treatment matching was possible and what hypotheses must be studied for matching to improve outcomes (Hell, Miller, Nielsen, & Nielsen, 2018).

Davis, Bergman, Smith, and Kelly (2017) provided further analysis of MATCH results in a reanalysis of results. Study authors analyzed MATCH results for outcome differences between emerging adults, ages 18 to 29, and older adults. The new analysis provided data on the differences in efficacy outcomes between emerging adults (n=267) and older adults (n=1459) in the MATCH trials. No differences were revealed in treatment conditions. Emerging adults showed poorer outcomes overall, regardless of the type of treatment. The authors hypothesized more effective outcomes if services were delivered to any group based on an individual basis. Interventions could be tailored to unique clinical profiles and based on the context of client development rather than matching profiles to a specific treatment (Davis et al., 2017).

Treatment based on diagnostic criteria is another type of matching. Ritter, Mellor, Chalmers, Sunderland, and Lancaster (2019) discussed the need for better treatment planning while noting difficulties moving from intervention theory into clinical application. This study was a thematic literature review commissioned by the Australian Government Department of Health and Ageing and based on previous studies by the department. As such, it did not include study population data. The authors suggested that to improve matching levels of care, treatment should be paired with the severity of criteria and needs, demand, and social and geographic contexts. Ritter et al. found that basing treatment on diagnostic criteria is not useful in

determining the type of treatment needed due to the arbitrary nature of diagnostic criteria. Studies that provide data on treatment based on diagnosis using general populations may not translate well into subpopulations. A person who meets the criteria under SUD diagnosis may not require a specific level of treatment service. A person who does not meet the criteria may still benefit from a certain level of treatment. The authors concluded that there is no easy way to improve planning or services based on acuity and suggest that the best treatment should consider factors, including context and understanding of the geographic service system.

Patient Placement Criteria is a system of criteria that match a patient with the appropriate level of care based on a set of guidelines from The American Society of Addiction Medicine (ASAM). Williams, Steinberg, Kenefake, and Burke (2016) state that ASAM advanced an algorithm that involves assessing SUD to determine the best care level. These criteria determine the severity of the problem and include biological, psychological, and social factors in the determination. As the criteria score based on the guidelines rises, so does the care recommendation level for SUD treatment. The ASAM criteria have proven reliable and valid and are used in many circumstances for SUD clients' placement levels. Although matching the type of modality or intervention to the client may not have been correlated with increased efficacy, Williams et al. (2016) point out that matching the level of services on acuity has been shown to improve outcomes.

The ASAM criteria have been used effectively. McCormick et al. (2019) presented evidence of improved outcomes in redesigning a SUD program run by the Veteran Administration. The ASAM placement was used to add all levels of care to the program and place patients in the clinically appropriate levels. Additional EB practices were implemented. The EB practices aligned with the treatment of both SUD and co-occurring conditions.

Improvements from the redesign included serving more patients with two fewer counselor positions that were then transferred to provide other mental health services within the VA. There was a 58.7% reduction in the number of clinics needed to provide services from 114 to 67 while maintaining a steady number of service visits (19,786). Treatment guidance and placement were streamlined, and providers no longer provided conflicting information. There were fewer referrals to a higher level of care than previously assumed that a higher level of care is better. EB practices improved clinical outcomes.

MAT became more accessible based on the criteria, and those patients who needed and then received MAT for opiate use disorder rose from 8 to 25.1% and for alcohol use disorder from 1.9% to 9.8%. For outcome measures, the VA used the brief addiction monitor (BAM) to assess treatment outcomes. The number of assessed patients was not provided, but McCormick et al. (2019) stated that 100% of patients were assessed, up from 24% before ASAM criteria implementation and redesign. The assessment was provided at the initiation of the treatment and at every individual appointment, and at 30- and 90-day follow-up post-treatment. Program staff compared pre-redesign and post-redesign BAM data and detected significant differences. The data analysis demonstrated a 22.2% improvement in the use of protective factors, confidence in remaining abstinent, and self-help activities. The patients who had received care were placed in more appropriate levels to provide better treatment planning and outcomes. The patients were able to be matched with the various levels of care as clinically indicated.

The use of medication-assisted treatment (MAT) is part of SUD treatment. MAT is not always indicated; however, MAT is effective in the treatment and is based on symptom acuity. Although outside the scope of this qualitative systematic literature review, two types of MAT

should be mentioned. The use of continuous medication for the treatment of cravings and acute symptom MAT.

Long, Long, and Koyfman (2017) Provided an evidence-based review of the emergency medical management of alcohol withdrawal. The discussion included examining different medications that have been used in the treatment of acute withdrawal symptoms for emergent detoxification from alcohol. Withdrawal symptoms from alcohol may include physiological symptoms such as seizures that are medical emergencies and tactile, visual, and auditory hallucinations. Alcohol withdrawal can result in death from its severity. The EB protocols for managing this detoxification include benzodiazepines that produce gamma aminobutyric acid (GABA). This has been and continues to be the most effective front-line substance for use in the withdrawal protocol. Some cases of severe withdrawal are treatment-resistant to benzodiazepines. In these cases, Long et al. (2017) notes that phenobarbital or propofol can be used as an adjunct MAT.

Long term MAT is often used for opiate use disorder. Timko, Schultz, Cucciare, Vittorio, and Garrison-Diehn (2016) systematically reviewed 55 articles that included 38 randomized control studies and 17 non-randomized control studies and concluded that MAT is associated with better outcomes. Participants who had received naltrexone or buprenorphine showed improved treatment retention rates. Methadone maintenance showed better outcomes for retention than naltrexone or buprenorphine. When MAT treatment was combined with contingency management, there were increases in retention.

Some of the difficulties with MAT for opiate use disorder have been identified in Maglione et al. (2018). This was a systematic review that looked at the functional outcomes of persons who used MAT opiate replacement. The meta-analysis included randomized controlled

studies (n=30) and observational studies (n=10). Functional problems included cognitive, physical, occupational, and behavioral outcomes. Comparisons were made between healthy controls and persons on MAT. Persons on MAT reported significant differences in working memory, cognitive speed, worsened aggression, and increased traffic accidents than controls patients who were not using MAT. Although these findings were contained within the studies, the studies' power was weak, and no definitive conclusions could be made about the end effect of MAT for opiate use disorder on overall function (Maglione et al., 2018).

Unanswered Questions

Unanswered questions remain from this literature review. Some of the studies cited in this project looked at interventions that included more than psychosocial interventions alone, such as the use of MAT in conjunction with an intervention suggesting that studies should be conducted that examine that modality (ACT, DBT, REBT) might fare better under different specific circumstances to ascertain which might have a better application in those situations.

Issues with the literature review can be seen in the meta-analyses' limitations. For instance, Lee, An, Levin, and Twohig (2015) pointed to data that may not be readily transferable to the general population due to a lack of ethnic diversity in previous studies. Pilot studies made the basis for much of the literature and were generally underpowered with a lack of post-treatment follow-up, limited measures of outcome and change processes, and low participant level. These issues continued in Köck and Walter (2018) since the number of studies was limited and did not enable definitive postulations on which therapy would be preferable, although an integrative approach was suggested for SUD treatments. Other issues were noted in Oltean and David (2018) that included subjective self-reports. Some studies used subjective measures or

self-reports, many studies use subclinical samples, and, in some cases, low numbers of effect could lead to greater statistical errors when data was extrapolated.

Discussion of the Significance of Past Research Relating to the Current Study

A brief mention of past research is indicated in the context of this review. The studies for REBT have not been as robust or frequent in recent years. Although some of the studies compared multiple modalities, no single study looked at the efficacy of each of the interventions in concert. The past research also contained little information on efficacy regarding days abstinent post-treatment. This may be due to it being a measure that has not been shown to indicate effectiveness. Past research contained low study participant numbers, and although randomized and controlled low numbers could affect analysis outcomes.

Summary

This chapter began with a definition of SUD, as well as a discussion on the diagnosis. The chapter included information that pointed to the importance of evidence-based practices in SUD treatment from The National Institute of Drug Abuse (2018). The discussion and literature review provided information on how SUD interacts with mental health problems and treatment outcomes. The literature review examined evidence provided from studies that determined the effectiveness of REBT, DBT, and ACT in the treatment of substance use disorders. This review was performed based on three research questions. The initial question was to look at the efficacy of REBT, DBT, and ACT to reduce DSM 5 criteria symptoms for SUD. The second measure looked at treatment efficacy based on an improved QOL. The third measure of efficacy involved looking at increased days of abstinence following treatment. The discussion continued and included ancillary data regarding efficacy due to treatment length, provider experience, education, and how the treatment is based on the acuity of symptoms.

CHAPTER THREE

METHODOLOGY

By 2017, as many as 19.7 million persons in the United States had a diagnosable (SUD). Only 4 million of those persons received some form of treatment (SAMHSA, 2019). Relapse rates after treatment were between 40% and 60%. Evidence-based (EB) treatments were shown to be most effective based on improved outcomes (National Institute on Drug Abuse, 2018). The treatment intervention must be as effective as possible to improve outcomes.

The purpose of this qualitative systematic literature review was to compare the effectiveness of three (CBT) interventions used to treat SUD. The desired outcome was to clarify which of these modalities demonstrate greater evidence for efficacy to impact treatment providing guidelines for appropriate clinical interventions. The following research questions were addressed: RQ1: That treatment modality: REBT, ACT, or DBT had greater published evidence for efficacy in SUDT as defined by a reduction in DSM 5 criteria symptoms for substance use disorder? RQ2: Among REBT, ACT, and DBT for SUDT, which treatment modality had been associated with the highest level of evidence of improved quality of life as defined by improvements in health and wellness, increased social networks, improved emotion regulation, and reduction in irrational thinking? RQ3: What were the differences in SUDT effectiveness regarding increased days of abstinence before relapse between REBT, ACT, and DBT when compared?

Research Method

A qualitative systematic literature review was used to examine the research problems and provided information for this theoretical study to answer the proposed research questions. Gathering data and performing experiments from numerous treatment centers is a difficult task.

In many cases, protective federal and local laws and monetary and time constraints would have provided barriers to this authors' ability to conduct personal research. The feasibility of a controlled trial, quasi-experimental research, or quantitative or qualitative data collection with the experimental design would not have been easily conducted. The theoretical approach laid out a frame of reference so that a review of existing published studies yielded data about these important issues and allowed for cross-modality linkage in a study of interdisciplinary methods.

In contrast, other methods would have examined them separately (Walliman, 2018). Walliman further concluded that using the qualitative method is undertaken in areas that are not sufficiently understood and used to determine what data should be collected. The research questions and modalities in this qualitative systematic literature review currently had much literature, history, and empirical data.

Within these projects' literature review were studies that included quantitative and qualitative methods. The adoption of the theoretical model allowed this project to benefit from both processes. The review allowed for the in-depth EB analysis and appraisal of current collective knowledge on a subject (Winchester & Salji, 2016). The review's systematic nature provided for assessing the quality and extent of the existing evidence while advancing a more comprehensive and precise understanding of the research (Pati & Lorusso, 2017). Also, the systematic review allowed for the integration of findings from across multiple research studies. The review of both qualitative and quantitative material helped answer the research questions that dealt with the different outcome measures of three CBT-based modalities in SUD treatment. The qualitative data assisted with perceptions of care and outcomes, while the quantitative data offered numerical comparisons of outcome measures based on the type of study.

Participants

Due to this study's theoretical nature and subsequent qualitative systematic literature review, no live participants were used. All data were obtained through a systematic review of the literature. Studies were identified through the type of intervention, whether ACT, DBT, or REBT, and conducted to treat a SUD, including treatment for nicotine dependence. The data gathered via the literature's systematic review came from study participants from 27 studies that fit criteria related to the research questions. Participants were identified through deliberate or convenience sampling by homogenous shared attributes of participants who had some diagnosis for a SUD and who had been in some form of SUDT that included at least one of these modalities (Etikan, Musa, & Alkassim, 2016). This method has its limitations and may not be generalizable to the entire population but is used when researchers have limited resources and time. Some of the studies used random sampling.

Participants who met the defined criteria were included in the study, with no concern toward ethnicity, age, or gender. Some included studies contained individuals who had co-occurring mental health and SUD issues and multiple SUD diagnoses. Studies that were not in English were excluded. This theoretical study's design contained no specific locations for studies other than the locations from which the studies were reviewed. Participants were primarily located in the United States; however, studies were included with participants from Ireland, Spain, Iran, Philippines, Italy, Switzerland, Nigeria, Denmark, and Egypt.

Instrumentation

A qualitative systematic literature review is designed to assemble pertinent and appropriate evidence-based on the eligibility criteria as defined by the research questions. The review should be conducted using specific steps to identify, select, and synthesize data to reduce

bias in these areas. The findings based on this method, when performed correctly, increase reliability and allow for decisions to be made on the outcomes (Shamseer et al., 2015). By conducting a review in this manner, steps may be carefully planned and can be accurately documented. The decision-making process to include or exclude information is more clearly defined. The study is also replicable; however, one purpose for the standardization of reviews noted in Shamseer et al. is that protocols may reduce replication of studies to concentrate on providing new empirical data.

As this was a qualitative systematic literature review, instrumentation was limited to assessments used within the studies included in the final review. Due to its theoretical nature, various methods were found in the studies that were reviewed based on this study's topics. Some of the studies were theoretical, both metanalysis and literature reviews. Other studies were quantitative or mixed-method. The protocol selected for this study was based on the Preferred Reporting Items for Systematic reviews and Metanalyses for Protocols from 2015 (PRISMA-P) (Moher et al., 2015). This study was a qualitative systematic literature review. It was facilitated by using the PRISMA-P flow chart that appears in Appendix A, and the PRISMA-P checklist provided in Appendix B. PRISMA-P contains a 17-item checklist that engenders the construction and reports of the systematic review. The protocol for this review followed the steps from Appendix A. The review was conducted so that the research questions determine the method followed by locating relevant data supporting the questions. The Flow Diagram represented the information process steps and provided information on how records were identified for inclusion or exclusion.

The theoretical study limitations included that there was no control of instruments, and the database was pre-existing. PubMed Central, EBSCOhost, ProQuest, and Google Scholar

were databases searched to unearth published articles that coincided with the research questions' criteria. Included studies used mixed methods and valid and reliable assessments to measure outcomes. Search criteria used within the databases were from California Southern University's combined metasearch and supported Google Scholar links that were included in the University databases.

Data Collection

This study was designed as a qualitative systematic literature review. Data collected came from a substantial review of published studies, journal articles, and books. All the literature was comprised of published material, 85% of that was within the past five years. There were no live participants used in this study. According to Moher et al. (2015), the systematic literature review has become common. This type of review aims to support and develop clinical practice guidelines that are important in applied clinical sciences. Moher et al. continued that the review must be based on pre-defined criteria with a methodological and systematic approach associated with a protocol, in this case, the PRISMA-P. The protocol is essential because it ensures careful planning and documentation of the review to make it replicable and reduce arbitrary decision-making in the process that can increase bias. This creates a measure of accountability and integrity in the system. The quality of the review is important so that the outcomes can be significant.

Moher et al. (2015) noted that the PRISMA-P statement does not utilize the Prisma flow diagram, while Shamseer et al. (2015) explains the removal of the flow came about due to the use of database software that deals in reference management and can reduce duplication. The flow diagram can be created after the process and used to show the process rather than as a guide. Shamseer et al. note that the use of software should be noted to explain data collection.

This study was conducted using the PRISMA-P protocol. It was a theoretical study and had limitations that included no control of instruments, and the database was pre-existing. PubMed Central, EBSCOhost, ProQuest, and Google Scholar were databases searched to unearth published articles that coincided with the research questions' criteria. Included studies used mixed methods and valid and reliable assessments to measure outcomes. Search criteria used within the databases were from California Southern University's combined metasearch and supported Google Scholar links that are included in the University databases. The search consisted of key terms "Acceptance and Commitment Therapy," "Dialectical Behavior Therapy" and "Rational Emotive Behavior Therapy" with the Boolean operator AND "substance use disorder" and "substance use disorder treatment" based on the time frame of 2015 to present. Search results yielded 1657 results, and those results were used to snowball an additional ten possible studies from reference sections. All articles used in the writing of this study were downloaded into reference management software Zotero. Duplicates were merged or removed in the event there were any. Duplicates removed or merged resulted in 1420 articles. Articles were screened for possible relevance to the proposed research questions resulting in 1301 records being excluded.

The specific items used to screen the articles were based on the information in the research questions. The full text was not used at this stage, and a cursory read of the abstract was appropriate. The first set of items included any of the three identified modalities that included assessments using DSM 5 criteria or behaviors and use potential that fit the criteria of the DSM 5 and a previous diagnosis with a SUD (American Psychiatric Association, 2013). The second set of items used to screen were any of the three identified modalities and some text within the articles or published material that discussed the improvement of QOL as well as any indication

of improvements in health and wellness, increased social networks, improved emotion regulation, and reduction in irrational thinking. The third set of items used to screen the articles was the mention of length of abstinence between relapse measured in days both during and post-treatment.

The remaining 119 articles were collected for full-text search relevance. The software allowed for collecting abstracts and storing the full text of articles or direct links to articles. The remaining articles were also saved onto a storage drive. These articles were read for appropriateness that is defined by Shamseer et al. (2015) as a more in-depth text reading that used the same criteria as the earlier cursory screening. Ninety-two articles did not meet the criteria due to 89 of them not focusing on SUD treatment outcomes or not including information about the research questions and three in foreign languages. The remaining twenty-seven articles were analyzed for this project.

Data Analysis

In this study, the data were collected through a systematic review of the literature that included quantitative, qualitative, and mixed-method studies. Twenty-seven studies related to the topics of the RQs were retrieved through search filters in PubMed Central, EBSCOhost, ProQuest, and Google Scholar databases to provide for a comprehensive literature review and analyze the data to answer the three research questions in this project. The studies included in this project were analyzed using PRISMA-P (a 17-item checklist) included in Appendix B. Articles were analyzed to determine if they could be useful in answering the RQs. All articles that did not meet this study's criteria or pose useful in answering the questions were rejected. Articles were organized to recognize their applicability to each of the modalities identified and the information sought from the research questions.

The inclusion criteria for each of the articles were that the studies' purpose included, first, outcome measures based on SUDT using one of the three modalities ACT, DBT, or REBT, and second, the outcomes provide knowledge of the information sought in the research questions. Data analysis from the review was completed so that information could be gathered to understand whether REBT, ACT, or DBT had greater published evidence for efficacy in SUDT. This comparison was accomplished by looking at a reduction in DSM 5 symptoms, which treatment modality had been associated with the highest level of evidence of improved QOL and any differences in SUDT effectiveness regarding increased days of abstinence. For RQ1, this meant the outcome data would have some indication that a change in DSM 5 criteria symptoms related to SUDT that utilized one or more of the chosen modalities would have been studied. For RQ2, this meant that the outcome data would have some indication that a change in QOL related to SUDT that utilized one or more of the chosen modalities would have been studied. For RQ3, this meant the outcome data would have some indication that days of abstinence during and post-treatment for SUD that utilized one or more of the chosen modalities would have been studied.

Bias

According to Creswell and Creswell (2018), bias can be a threat to internal and external validity. Issues of bias should be discussed, and steps should be noted to reduce this issue. Bias can come about in many areas of a study. The personal bias that can lead to selection bias is an important topic to discuss. This topic was chosen based on personal experience using each of the modalities, which is part of the project, to treat clients who suffer from SUD. This personal experience comes about through thousands of hours in inpatient and outpatient SUD and DD treatment settings as a counselor, supervisor, and director. Work in this area includes having been trained and training others in many interventions, and each intervention in the study. Bias is inevitable but can be reduced. This reduction was accomplished by researching all articles that

coincided with the search criteria. Any articles that contained pertinent information were examined. Any articles that pertained to the information sought through the RQs were included in the final study. Information that might oppose these views was included. The chair and committee members routinely reviewed the research.

Validity and Reliability

Creswell and Creswell (2018) stated that threats to validity could come from internal and external issues. Creswell and Creswell defined validity as the items measuring what they were intended to measure and having results that correlate with other results from using the same assessments or measures. Reliability was defined as the consistency or repeatability of an instrument or, in this case, of a study.

Qualitative systematic literature reviews do not allow for control over the internal and external validity of the prior literature or studies, according to Creswell and Creswell (2018). The research used in this project was considered valid and reliable in that those included were peer-reviewed or written for academic purposes and within the variance period set by the University. All studies were drawn from California Southern University or partner databases through interloan library procedures published in peer-reviewed journals or published through academic university processes. Using RQs and taking steps for inclusion guided by protocols ensured that this project's information was reliable and valid. There was a discussion of possible limitations and delimitations of the project to assist in maintaining reliability.

CHAPTER FOUR

RESULTS

The relapse rates following SUD treatment can be greater than 60% (SAMHSA, 2019; Miller, Walters, & Bennett, 2001). An important aspect that can bring about more successful treatment outcomes for SUD is EB practices (National Institute on Drug Abuse, 2018). According to SAMHSA (2019), about 19.7 million persons in the United States had a diagnosable SUD. In contrast, only 4 million of those persons received some form of SUD treatment. There is a need to discover that modalities improve outcomes.

The purpose of this qualitative systematic literature review was to research and compare the effectiveness of three cognitive-behavioral therapy (CBT) interventions that are used to treat SUD to clarify that these SUDTs have greater evidence for efficacy so that clinical care might be optimized.

This chapter presents an analysis of findings organized and collected from a comprehensive review of Chapter 2. Research literature published primarily from 2015 to 2020 was examined to discover themes that could provide findings following the proposed research questions.

The following research questions guided the Review:

RQ1. That treatment modality: REBT, ACT, or DBT has greater published evidence for efficacy in SUDT as defined by a reduction in DSM 5 criteria symptoms for substance use disorder?

RQ2. Among REBT, ACT, and DBT for SUDT, which treatment modality has been associated with the highest level of evidence of improved quality of life as defined by

improvements in health and wellness, increased social networks, improved emotion regulation, and reduction in irrational thinking?

RQ3. What are the differences in SUDT effectiveness regarding increased days of abstinence before relapse between REBT, ACT, and DBT when compared?

Participants

This study was conducted using a qualitative systematic literature review method and, therefore, did not use any human participants. A thorough literature review was conducted to obtain the data associated with the research questions that guided this study's topic. This study was not conducted using participants directly, nor did it use a physical location since it was a systematic literature review. The PRISMA-P protocol from 2015 was the instrument used to conduct the research. This protocol uses a 17-item checklist to guide the research and reports of a systematic literature review. This assists with the standardization and replicability of the study. The data used to provide results came from various studies that included quantitative, qualitative, and mixed-method studies.

Participants and locations were limited by the studies used to gather data. The participants came from the 27 articles that pertained to the research questions and based upon the criteria outlined in the PRISMA-P protocol. The chosen participants were represented by persons, either adult or juveniles, who had been diagnosed with a SUD, had issues such as the use of substances of abuse, may have been diagnosed with a co-occurring disorder, and who received some form of therapeutic intervention or treatment that matched one of the three chosen modalities, ACT, DBT or REBT.

The studies' subjects would have to have been studies with reported data outcomes that measured at least one of three criteria from the research questions. The criteria must have

included a reduction in DSM 5 criteria symptoms for substance use disorder, evidence of the improved quality of life as defined by improvements in health and wellness, increased social networks, improved emotion regulation, and reduction in irrational thinking and SUDT effectiveness measured by increased days of abstinence before relapse.

The total number of participants in this study was greater than 50,081 participants (n=> 50,081) with one study, David, Cotet, Matu, Mogoase, and Stefan (2018), reporting only the number of studies included in the metanalysis (n=84). Due to the international scope of SUD there were 11 Countries represented in the study that included 2 studies from Ireland, (Flynn et al., 2019; Thekiso et al., 2015), 3 studies from Iran, (Bahrami & Asghari, 2017; Davoudi, Omidi, Sehat, & Sepehrmanesh, 2017; Sahranavard & Miri, 2018), 10 studies from the United States of America, (Acosta, Possemato, Maisto, Marsch, Barrie, & Lantinga, 2017; Boswell, Cain, Oswald, McAleavey, & Adelman, 2017; Cannaday, 2015; Hadland, 2019; Lee, An, Levin, & Twohig, 2015; Levin, Haeger, Pierce, & Twohig, 2017; Levin, Pistorello, Hayes, Seeley, & Levin, 2015; Meyer, Walser, Hermann, La Bash, Debeer, & Morissette, 2018; Nyamathi, Shin, Smeltzer, Salem, Yadav, & Ekstrand, 2017; Robison & Luczakowsky, 2015), 1 study from Spain, (Gonzalez-Menendez et al., 2014), 1 study from India, (George & De Guzman, 2015), 3 studies from Italy (Cavicchioli, Movalli, Ramella, Vassena, Prudenziati, & Maffei, 2019a; Cavicchioli, Movalli, Vassena, Ramella, Prudenziati, & Maffei, 2019; Maffei, Cavicchioli, Movalli, Cavallaro, & Fossati, 2018), 1 study from Switzerland (Köck & Walter, 2018), 1 study form Egypt, (Abdelkarim, Molokhia, Rady, & Ivanoff, 2017), 2 studies from Nigeria (Emmanuel & Funmilola, 2015; Omeje, Otu, Aneke, Adikwu, Nwaubani, & Chigbu, 2018, 2 studies from Romania, (David, Cotet, Matu, Mogoase, & Stefan, 2018; Oltean & David, 2018) and 1 study from Denmark (Thylstrup, Schrøder, Fridell, & Hesse, 2017).

Results Research Question One

RQ1. That treatment modality: REBT, ACT, or DBT has greater published evidence for efficacy in SUDT as defined by a reduction in DSM 5 criteria symptoms for substance use disorder?

The purpose of this question is to define that modality, if any, might best serve both the clinical delivery population and the recipients of those interventions by determining that of the modalities provides greater evidence of symptom reduction in the DSM 5 for SUD diagnosis. This question resulted from anecdotal evidence showing that much of the literature on SUDT continued to focus on the number of days abstinent. This question allows for a more in-depth look at treatments that may include interventions that target harm reduction rather than abstinence. In this context, it would be important to know that the study's interventions can ameliorate the criteria sets for a SUD and reduce the pathological pattern of behaviors upon which the diagnosis is based. The literature review informed this question by providing evidence for the reduction of SUD DSM 5 criteria and reduced pathology overall, including changes despite having a co-occurring disorder and improved retention rates.

Theme One: REBT Improved Rational Beliefs and Psychological Distress

REBT treatment provided evidence for improved rational beliefs, lowered psychological distress, and improved behaviors that reduced DSM 5 SUD criteria.

An important focus of the REBT intervention studies is to provide information on how and what changes occur in the study's participants due to the disputation of irrational beliefs or thinking. These changes are measured in studies such as Omeje et al. (2018) that use the alcohol irrational beliefs scale to measure to measure irrational beliefs regarding alcohol, which may cause people to experience alcohol use disorder symptomatology. According to this study, the

irrational beliefs such as, “I cannot stand avoiding a drink” or “I cannot function without a drink,” are the types of thoughts that can become more realistic and logical using REBT, resulting in positive consequences after the thoughts are disputed and become more objective (Omeje et al.,2018, p. 2). The data points to improvements that are significant reductions in the frequency and amount of psychological or behavioral issues that occur due to a SUD, concluding that this intervention significantly improved the participants' psychosocial health. This is also an aspect of the study from Oltean and David (2018) that was conducted under the assumption that irrational beliefs are a factor and cause of dysfunctional feelings and maladaptive behavior. This meta-analysis revealed a medium negative correlation between rational beliefs and psychological distress and that REBT was a mediator in increasing rationality as a protective factor.

Distress is one of the common characteristics of defining SUD (American Psychiatric Association, 2013). The outcomes provide evidence that helps support REBT in reducing SUD DSM 5 diagnosis conditions. Further analysis suggested that this relationship was robust and that rational beliefs can attenuate this disorder's impact. This is further supported in David, Cotet, Matu, Mogoase, and Stefan (2018) that showed that REBT is homogenous in that it aims to change irrational beliefs regardless of the disorder and that the interventions are effective regardless of clinical status. Boswell et al. (2017) add to this theme with a study focusing on outcomes using REBT treatment for SUD dealing with the reduction of interpersonal problems and relational factors that are significant in the diagnosis of SUD. This study's measures showed the reduction of these problems with increased rational thinking, the REBT target. Both Acosta et al. (2017) and Thylstrup, Schrøder, Fridell, and Hesse (2017) supported this theme. The interventions outcomes measured from these studies showed positive changes from REBT

interventions that included improved ability to cope, increased social support, and impulsivity reductions.

Theme Two: ACT Improvements with DD Increase Over Time

ACT treatment provided evidence for improvement in DSM 5 diagnosis domains with a transdiagnostic treatment effect for co-occurring disorders and displayed that effects increased over time that is not found in other modalities.

Gonzalez-Menendez, Fernandez, Rodriguez, and Villagra (2014) provided evidence of improvements in multiple SUD domains using the ASI and AAQ-II. This study provides evidence for improved DSM 5 criteria through areas of the ASI and improvements in reduced levels of experiential avoidance and psychological acceptance that correspond with DSM 5 criteria such as cravings and continued use despite psychological problems. Those improvements continued throughout the study and were significant from baseline to 6 months at 12 and 18-months. Of note is that there were reported trans-therapeutic actions that positively affected multiple disorders beyond SUD and had an incisive effect on anxiety. This study also pointed to an important theme that showed the ACT condition maintained the improvements and even improved results over time.

Lee, An, Levin, and Twohig (2015) presented evidence from a meta-analysis of ACT results. Three important themes build on the previous study. The results show improvement from DSM 5 criteria and implicate that improvements from ACT may continue to improve over time and highlight results that provide a promising idea that ACT has a transdiagnostic effect that has the potential to treat co-occurring issues such as depression effectively. This theme was provided when follow-up data were analyzed with outcome results providing an effect size increase. The discussion concludes that from the data, it may be that the positive effects of ACT increase with

time that is theorized as a “sleeper effect,” noting that an increase in psychological flexibility may lead to continued positive behavior change. This theme of assisting pathologies in addition to SUD was discussed in Davoudi, Omidi, Sehat, and Sepehrmanesh (2017). The results point to positive outcomes that have significance related to efficacy in treating SUD and reducing DSM 5 symptomology, including consumption while decreasing co-occurring issues linking SUD to depression and anxiety.

Although George and De Guzman (2015) did not include follow up measures that would have allowed for measuring the sleeper effect, this study did contribute to the themes mentioned above of reducing DSM 5 SUD diagnosis criteria items in that it was a positive contributor to reducing alcohol-related problems. As well, additional measures provided evidence for transdiagnostic intervention. In contrast, Bahrami and Asghari (2017) discuss that ACT interventions continue to improve a person’s ability to regulate emotions, indicating continuous increases in effectiveness and includes evidence in reducing DSM 5 symptomology.

Theme Three: DBT Reduced DSM Criteria and Improved Retention

DBT treatment provided data showing a reduction of SUD DSM 5 criteria symptoms and reduced pathology, hospitalization rates, anxiety, and depression meditated by improvements in regulating emotions despite having a co-occurring disorder that also improved retention rates.

The critical themes for DBT regarding this RQ are improvements in SUD criteria mediated by the target of DBT, the ability to regulate emotions, improvements in psychosocial functioning, and improvements in co-occurring disorders or improvement in SUD criteria despite having a co-occurring disorder.

Hadland (2019) incorporated the DERS scale to measure emotion regulation. The decrease in DERS scores was an indicator of improvement in DSM 5 criteria; however, the study

had mixed results due to the BAM scores with two cases showing improvement and 3 cases showing an increase in SUD using behaviors. These BAM results were contradictory, but the scores could be dismissed as a measurement error when measured against a reliable change index. Hadland also mentions that many of the improvements happened despite a co-occurring diagnose of at least another disorder. This study also contained a discussion on lower dropout rates that were not part of the study.

Cavicchioli et al. (2019a) also used the DERS with measurements that showed improvement post-treatment. This measure was combined with the AAQ-II that correlated improvements in emotion regulation. These positive measures were implicated in increasing positive skills used to deal with EA are indicative of replacement behaviors for the SUD criteria pathological behaviors. Another purpose of Cavicchioli et al. was to determine that using this intervention produced greater treatment retention in lowered dropout rates that were proven.

Köck and Walter (2018) reviewed for indicators of improvement in SUD co-occurring with a personality disorder, provided data that indicated improvements in emotional regulation correlated with symptom improvement for SUD through psychosocial functioning. These indicators showed improvements in self-harm/suicidal behavior, anxiety, and depression. The impression from data analysis was that the effects provided higher retention rates, especially for those who were dually diagnosed.

Maffei, Cavicchioli, Movalli, Cavallaro, and Fossati (2018) found a mediating role in SUD outcome improvements tied to emotional regulation improvement based upon a reduction in DERS scores. This study excluded persons with active co-occurring disorders. It did measure the effect on treatment retention that was shown to improve using DBT.

Robison and Luczakowsky (2015) provided data illuminating DBT treatment as useful in reducing SUD behaviors. Improvements occurred with overlapping SUD symptoms in areas such as deficits with social skills, problems with identity and self-esteem, self-destructive behaviors. Once again, a study showed improvements in SUD criteria despite a diagnosed personality disorder.

Abdelkarim, Molokhia, Rady, and Ivanoff (2017) provided data that coincides with all the discussed themes. The use of DERS measures showed improvement in emotion regulation to meditate SUD. The use of DBT showed a marked increase in treatment retention. There were improvements in suicidal ideation. The improvements occurred with clients diagnosed with a co-occurring disorder so that improvements occurred because of the DBT intervention targets and despite the dual diagnosis. An area of improvement also provided information on reduced hospitalization rates.

Cannaday (2015) identified that DBT treatment interventions had an inverse correlation between improvements in skills and competencies and reduced problematic SUD and mental health domains. There were significant improvements in retention in that treatment plan goal completion showed improvement in the DBT participants compared to TAU.

Discussion Research Question One

From research question one, there appears to be some evidence that ACT and DBT studies had provided for reducing SUD and other mental health issues even when the target was SUD issues only. This was not the case for REBT.

Both ACT and DBT showed promising results in ameliorating symptoms for Dual Diagnosis clients. In the case of ACT, there were ancillary measures in several studies that pointed to SUD improvements and other symptoms. In DBT, clients who had dual diagnoses

were deliberately chosen for many of the studies. This choice could have been due to the origination of DBT to treat BPD and suicidality, or in the case of ACT, the original design was not intended only for SUD but was meant to intervene trans-diagnostically.

Retention rates improvement were found in DBT that showed increase retention and subsequently reduced drop out. This improvement was seen in only one study for ACT. The differences may be accounted for in that the studies involving DBT studied this facet with purpose. In DBT, many of the problems that DBT was designed to address included drop out due to suicidality. For ACT, this was not a factor that was being measured in most cases, but when it was measured, indications were that dropout rates decreased. In comparison, this was not a consideration in any of the REBT studies.

One important takeaway from the RQ1 theme section is that each modality target's mechanisms appear valid. The targets for REBT are irrational thoughts; for ACT, this is emotional avoidance, and for DBT, this is emotion dysregulation. In each of the above cases, not only did the studies of the modalities provide evidence that these targets decreased, but they also showed that these decreases were mediators in SUD criteria improvement. The studies' improvements appeared to show an overall reduction in specific SUD criteria for all of the study's modalities.

Results Research Question Two

RQ2. Among REBT, ACT, and DBT for SUDT, which treatment modality has been associated with the highest level of evidence of improved quality of life as defined by improvements in health and wellness, increased social networks, improved emotion regulation, and reduction in irrational thinking?

The question centers on the idea that QOL is a relatively newer measure of effectiveness that encompasses the idea of harm reduction as described in Charlet and Heinz (2017) that provides evidence that harm reduction that can be a path to abstinence has major benefits in reducing problems in many domains including anxiety, depression and lower hospitalization rates. This question also provides a broad background to look at outcomes from a lens that includes many ideas about recovery while maintaining a focus on improvement post-treatment. This question is valuable in adding to the literature beyond mere days of abstinence. I asked this question to gather data that can point to an overarching assessment method that includes outcomes that are about improving life or bringing about a life worth living. The literature review informed this question by providing evidence showing that modality has provided the highest level of evidence regarding improvement in QOL.

Theme One: REBT has Varied Findings with QOL

REBT effects varied. There were only two studies, one of which was a literature review that discussed QOL, with the last study failing to find treatment effect for change in QOL.

Data for REBT measures for improved QOL were found in two studies. The information is limited. The first study was a meta-analysis that used data spanning 50 years. David, Cotet, Matu, Mogoase, and Stefan (2018) appeared to provide favorable results based on the review's data analysis. This singular REBT meta-analysis posted a positive effect size by interpreting results for behavioral and health outcomes as QOL measures while the data varied. The analyzed data in David et al. provided an overall positive effect in improved states of anger and depression. This was juxtaposed against a single study by Acosta et al. (2017). This study looked for the QOL in domains from measures used in the study. The study failed to find a treatment effect for change in QOL over time. The study pointed to high baseline QOL reports as a

possible factor for the lack of change. The data for REBT was not robust. The data varied and did not provide enough evidence to make informed decisions for this research question.

Theme Two: ACT Improves QOL Measures

ACT meta-analysis noted a paucity of QOL measures. However, QOL measures began to increase over time with results showing correlation of treatment and improvements in symptoms of QOL and ancillary improvements in distress, general anxiety, social anxiety, depression, and positive mental health.

There was some evidence of improvement in QOL measures with the ACT studies. It appeared to be more robust than that from REBT studies and began to yield better results in later studies. For instance, Lee, An, Levin, and Twohig (2015) was a meta-analysis that analyzed data from 11 articles. Of note in the study, the authors mention a lacuna in the literature regarding this area but show that those studies that measured QOL provided evidence that results were promising when studies looked at psychological flexibility. There were improvements in QOL. This was the case in only 30% of the studies in Lee et al. meta-analysis.

During the same year as Lee et al. meta-analysis, Thekiso et al. (2015) studied SUD patients who had co-occurring mental health issues such as bipolar disorder and depression. Assessment in the study included the BDI and the BAI, as well as the YMRS. These identified issues with depression, anxiety, and irritability. Improvements were seen at the three and six months follow up assessments. Assessments were taken at baseline, discharge, and at three and six months follow-ups. Participants showed improvement with fewer depression, anxiety, and irritability symptoms that correlate with improvements in QOL.

Although Davoudi, Omidi, Sehat, and Sepehrmanesh (2017) did not use a specific measure of QOL, it did use both the Beck Depression and the Beck Anxiety Inventory scales. By

looking at mean scores for these assessments at three points during the study, the results from this two-group pre-test-post-test randomized controlled trial provided positive outcomes. These outcomes indicated improvements in QOL from lessened anxiety and depression and higher functionality levels after ACT was administered. The results showed significant between-group differences between the act and control group.

Levin, Haeger, Pierce, and Twohig (2017) used a range of assessments to look at several measures of improvements in QOL. The CCAPS was used to look at psychological symptoms, and the MHC-SF assessed emotional, psychological, and social well-being. This scale also measures life satisfaction, personal growth, and purpose in life. When combined with data from the AAQ-II and the Valuing Questionnaire, there was a significant improvement in QOL for those who received ACT treatment as an intervention for SUD. Although not all measures showed an improvement, significant progress occurred in moving toward valued living and improved distress, general anxiety, social anxiety, depression, and positive mental health.

Adding to the ACT QOL data and the theme that ACT studies have increased studying evidence for improved QOL, Meyer et al. (2018) looked for QOL measure improvements using the WHOQOLBREF designed By the World Health Organization to look at QOL issues. From baseline and compared with a control group, those who received ACT as an intervention showed improvement with SUD and co-occurring PTSD. These measures included improvement in functional impairment, depression, and overall QOL. This study was performed three years after Lee et al. The measures for follow-up data pointed to improvements that continued to increase over time; thus, QOL improved using ACT.

Theme Three: DBT Improves QOL with More Robust Measures

DBT results for QOL appeared to be more robust due to the DERS scale that provided data indicating positive changes in participants' ability to regulate emotions, the main target of DBT, and that has proven to be mediate improvement of QOL.

The results for improvement in QOL appear to be more robust in the DBT studies due to the majority of the studies utilizing the DERS scale that does measure overall improvements in QOL. In these cases, treatment with DBT was measured based on this target. Maffei, Cavicchioli, Movalli, Cavallaro, and Fossati (2018) used the DERS that pointed to the participant's increased ability to accept emotions and engage in goal-directed behavior rather than impulsive and deleterious. Participants who had completed treatments showed a significant improvement in emotional regulation and reduced impulsive behaviors that contributed to the overall finding of improvement in QOL.

Cavicchioli et al. (2019) continued utilizing the DERS by assessing the reduction of maladaptive coping strategies when dealing with emotional states. This study also used the ASI to assess areas of SUD problems that were related to QOL. There were significant improvements in SUD severity from treatment baselines. Cavicchioli et al. identified a large and significant decrease in emotion regulation difficulties that equates to this qualitative systematic literature review’s values for QOL. Hadland (2019) also used the DERS. This study noted tools from DBT designed to target SUD specifically that reinforce the use of prosocial behaviors. The use of the DERS was to measure differences in QOL changes, and from this, the statistical analysis pointed to a small but significant QOL difference in effect from baseline to post-treatment outcomes.

Although Sahranavard and Miri (2018) did not use the DERS to assess QOL, the BDI provided data that yielded QOL improvement. This was accomplished by assessing mean

depression scores that indicated that a significant percentage of the participant population had remission from depression, with the study concluding DBT as effective in the treatment of SUD depression symptoms, thus improving QOL. Cavicchioli et al. (2019a) administered both the AAQ-II and the DERS scales and used this in secondary measures of improved QOL. The AAQ-II yielded data of improved psychological flexibility, which is the ability to deal with aversive emotional states, coinciding with the DERS yielding data of improved ability to regulate emotions. These secondary outcomes became important to QOL in that improvements were seen from baseline to post-treatment. Conclusions pointed to the positive effects of emotion regulation strategies on distress tolerance and the reduction of emotional suffering, distress, and negative affectivity related to high emotional avoidance levels.

Flynn et al. (2019) gathered qualitative data at six months and at follow up. The analysis concluded significant improvement for the acquisition of mindfulness skills and positive changes in participants' ability to regulate emotions. This data provided themes, one of which was the “new lease on life” theme directly related to overall improvements in QOL. Participants reported using DBT skills to deal with aversive emotions and stressors to engage in positive behaviors that increased confidence/assertiveness, equating to a new lease on life.

Discussion Research Question Two

From RQ2, it appears that DBT provides the most information regarding data outcomes based on improved QOL. Although ACT QOL results appeared to improve over time, DBT results appeared to be more robust due to the DERS scale used in many DBT studies. It is tempting to look at DBT as a clear frontrunner in this area. However, this does not mean that the other modalities did not provide improved QOL, just that they did not specifically look for this

as an outcome measure. This outcome is evident in the ACT theme that shows that once studies begin to measure changes in QOL, the results begin to provide evidence.

Another idea that tempers declaring a decision is that QOL is subjective and may have overlapping areas of improvement that coincide with some of the other modalities' improvements. Overall, the outcomes may even provide evidence for improved QOL in that the definition for this measure is subjective and could be arbitrary. If the question of improved QOL had been asked to clients receiving any of these modalities, they might have equated even small improvements in ancillary areas such as harm reduction or lessened use as being the same as an improved QOL.

Results Research Question Three

RQ3. What are the differences in SUDT effectiveness regarding increased days of abstinence before relapse between REBT, ACT, and DBT when compared?

For some time, the measure of abstinence appeared to be a gold standard in treatment. This idea took root from the earliest days by the most widespread and earliest treatment from SUD that is Alcoholics Anonymous. It is so pervasive due in part to an appeal to authority from circa 1935 that comes directly from the Big Book of alcoholics anonymous in the section, The Doctor's Opinion, p.xxx, that states that “the only relief we have to suggest is entire abstinence,” (Alcoholics Anonymous, 2014). This suggestion is deeply engrained into thinking and treatment applications. It is also hopeful that if a person were to maintain complete abstinence, they would see improvement in many life domains. It is important, therefore, to include this measure in any study that reviews other studies. This question was used to examine each modality to discern improvements if abstinence is the SUD treatment objective. This abstinence goal appeared to be a standard measure in the SUDT field. The literature review informed this question by providing

evidence showing that modality's studies used abstinence as a measure of efficacy and that modality had outcomes that lengthened the number of days after treatment.

Theme One: REBT Abstinence and Harm Reduction

REBT results provided two studies focusing on both abstinence and harm reduction using self-reports to assess the percent of drinking days, percent of heavy drinking days, and percent of drug use days.

Data for outcomes on CDA in REBT studies was limited. Only two studies provided evidence related to this type of outcome measure. There was data that REBT interventions were efficacious, with evidence showing effect sizes in reduced use and an improvement in complete abstinence following treatment when compared to a control group. Thylstrup, Schrøder, Fridell, and Hesse (2017) used the ASI at baseline and 3- and 9-months follow-up. This study was one of two studies that used self-report measures to determine abstinence rates. Significant results showed increased days abstinent with less severe use at 3- and 9-months post-treatment. The abstinence measure was significant compared to a control group in that the treatment group showed 3% abstinence at baseline, 17 % at three months, and 21 % at nine months, and the control group remained unchanged. One caveat to this study was the retention rates for treatment. Of the participants, 76 % attended at least one counseling session, and 21 (23 %) attended all six sessions. The Median number of sessions was 2. This finding points to REBT's efficacy in limited dosing or poor retention rates, but the data pointing to the reason for CDA could be questioned in either case.

Acosta et al. (2017) also used self-report measures to determine daily use. Using both the AUDIT and the TLFB to study percent of drinking days, percent of heavy drinking days, and percent of drug use days. This study used corroborating data by contacting a collateral informant

who could verify past daily substance use over the last 30 days to improve the self-report. The between baseline and treatment termination results provided evidence of significant reductions in alcohol use. Since this study did not focus on abstinence and showed no significant effect on the percentage of days drinking, it was geared toward a harm reduction effect showing fewer drinks consumed on days that drinking occurred.

Theme Two: ACT Improved Abstinence with Limited Studies

ACT studies that reported abstinence measures were limited concerning the overall number of studies used in this qualitative systematic literature review and data showed improvement in those studies that did measure abstinence.

In RQ 3 and abstinence measures with ACT, many of the studies used in this qualitative systematic literature review did not study abstinence measures. There were four that used this measure to look at outcomes. This measure was not chosen since ACT interventions ameliorate ancillary symptoms and behaviors that are believed to underlie pathology in SUD.

One example of an ACT study that looks at abstinence rates is Gonzalez-Menendez, Fernandez, Rodriguez, and Villagra (2014). This study used the ASI to measure changes from baseline to post-intervention follow-ups at six, twelve- and eighteen months. An interesting effect from this study was that overall abstinence rates reached their highest point at the 18 months follow up. The abstinence rates increased from 42% at six months, 84.6% at 12 months, and 85.7% at 18 months. Once again, ACT provides evidence for an earlier discussion that ACT has a sleeper effect as outcomes improve over time. When compared to REBT in this particular study, these measures showed large statistical differences in abstinence rates and even a decrease in abstinence between the 12- and 18-months follow-ups with REBT recipients that provided that only 50% of the participants reported remaining abstinent.

A meta-analysis of ACT for SUD, Lee, An, Levin, and Twohig (2015), provided further evidence for the theme of improvement in measured abstinence rates post-treatment. Eleven studies were examined. Six of the studies included post-treatment substance abstinence data. Five studies provided positive outcomes data; three were considered statistically significant as an effect size for use cessation. When the studies were examined, the aggregate data yielded a significant statistical effect size favoring ACT over TAU. One study did provide mixed results proven as non-significant, but that yielded data that a CBT intervention had better outcomes for cessation than an ACT intervention. When combined, the data point to ACT being effective in reaching cessation. This meta-analysis contained a supposition that use cessation may lead to improved outcomes; however, it should not focus on treatment alone.

Davoudi, Omidi, Sehat, and Sepehrmanesh (2017) used the structural clinical interview and a carbon monoxide monitor to measure the use of cessation for nicotine. The study used a control group, and outcome data provided that the number of patients in the intervention group who quit smoking was significantly greater than the number in the control group. 32.8 % of the overall number and who received ACT treatment showed evidence of use cessation. Participants who received ACT interventions were shown to have higher smoking cessation rates when comparing participants who received routine counseling services. Most of the previous studies also reported the same findings.

Continuing with results for abstinence measures with ACT, Bahrami, and Asghari's (2017) study used the ASI to measure baseline levels of use severity. This data was used to compare levels of severity for SUD at post-treatment. The study contributed to the evidence regarding outcome measures within item measurement improvements. The ASI does provide data of severity in the area of use that implies either reduction in use or use cessation. This work

provided evidence of reducing both alcohol use status and substance use status from baseline to post-treatment. This finding is tempered by an absence of specification about whether the improvements in item measurements were from abstinence or reduction. The study demonstrated evidence of significant effectiveness due to improvements in the domains measured.

Theme Three: DBT Statistically Significant CDA Increases

DBT evidence provided for statistically significant outcome measures with large increases in consecutive days abstinent (CDA). The number of studies increased due to study theories that DBT could increase CDA as a performance measure.

Several studies provided evidence that DBT increased CDA. These studies contained hypotheses that indicated a belief that DBT would increase CDA. This hypothesis increased the number of studies that looked for a report on this outcome.

Overall, the results provided statistically significant outcomes in improvements in abstinence. For instance, Nyamathi et al. (2017) focused on the primary outcome measure of drug abstinence at a six-month follow-up in this randomized controlled trial. Secondary measures were alcohol abstinence and abstinence from alcohol and drugs combined at six months follow up. The measure used was a self-report but bolstered by data from urine sampling. The significance was recorded with baseline reports of 67.75% of the DBT group reporting drug use and alcohol use at 41.5%. The efficacy of the DBT program when comparing baseline to 6-month follow-up showed that 65.5% of the DBT participants reported abstinence that is a significant effect size regarding abstinence.

To measure abstinence improvement rates in Flynn et al. (2019), the authors developed the CISMS to gather data on substance misuse frequency and severity. This study was a mixed-methods questionnaire administered at the completion of the intervention and at a 6-month

follow-up. Data were collected as a baseline for comparison. The baseline data indicated that 63% of the participants used some substance in the thirty days before treatment, and 37% reported no substance use. The outcomes for persons who completed treatment provided a significant swing in change outcomes, with 19% of the participants reporting use in the previous month and 81% reported no use. The quantitative results indicated reductions in binge drinking and use of drugs. Statistically significant differences were found over time for reported substance use.

The study design for Maffei, Cavicchioli, Movalli, Cavallaro, and Fossati (2018) was used to test the theory that DBT could increase CDA. The study used the ASI and self-reports of CDA at baseline to determine use one month before treatment. This data was enhanced with a blood test to look at alcohol use severity and backed by random weekly urine drug screens. The data were collected at one month and treatment termination. Of those participants who completed the program, 73.2% achieved abstinence at the end of the program. The results showed that participants improved in the severity of alcohol use and coincided with a large increase in CDA between the last month before admission to treatment and the program's end. It would be important to add post-treatment follow-up measures to support these results and improve this study’s evidence.

The study goal for Cavicchioli et al. (2019) investigated pre to post-treatment CDA improvement. The ASI provided an assessment at baseline to determine use patterns 30 days before treatment. Two random weekly urine drug screens and a self-report on CDA was used to measure changes during the program. From baseline to the end of treatment, the results showed significant increases in CDA. This measure included improvements in lengthier CDA at the end of treatment. This study replicated and extended evidence from Maffei et al. (2018) that had

already shown similar empirical results using a stand-alone DBT intervention for treating SUD and indicates the need for post-treatment follow up measures to support the efficacy

Discussion Research Question Three

The overall results from RQ3 for abstinence appear to show improvement in those studies that used this measure compared to TAU or control groups. These results do not seem to be impressive when looking at CDA from an overall treatment standpoint. If, as in REBT, only 21% of the studied population remained abstinent nine months after treatment, 79% of the population did not.

REBT results seem to point to a stance that did not include CDA or abstinence as the primary measure in studies. Those studies that addressed this RQ used self-reports combined with collateral informants to assess the percent of drinking days, percent of heavy drinking days, and percent of drug use days. The focus was not on abstinence but on harm reduction. Although data for outcomes on CDA was limited, there was evidence that REBT interventions were efficacious with small effect sizes in reduced use and, in some cases, an improvement in complete abstinence following treatment that included the REBT modality; however, results were mixed.

Many of the chosen studies for ACT did not use abstinence as a measure of outcome. It is possible that this was not the concern of ACT studies since the mechanisms of ACT place emphasis on ancillary symptoms, like psychological flexibility, that is thought to be the focus of ACT interventions. Although reducing substance use may lead to improved outcomes, it should not be the only treatment focus. In some cases, outcomes did not indicate the length of cessation before relapse, and there was no differentiation between abstinence and reduction.

In the case of DBT, studies looked at cessation and abstinence as a measure of performance. Results showed significant moderate to large increases in CDA. In some of the studies represented, measures that looked at cessation included urine samples, self-reports with an increase in reports of lessened use or no use, and blood samples looking at biomarkers for alcohol consumption that provided outcomes with better CDA measures. Studies theorized that DBT could increase CDA, allowing more study results to provide data on improvements in CDA. CDA was statistically significant as an outcome measure based on the evidence provided in the DBT studies.

Summary

This chapter discussed the research questions' themes based on data from the 27 studies used in this qualitative systematic literature review. The results were interpreted and discussed as a presentation of the material. The results highlighted interventions and their treatment effectiveness in reducing DSM 5 symptoms, improving quality of life, and consecutive days abstinent. It appears that there are many strategies used in the treatment of SUD, and each can have different targets even though the overarching interventions of the CBT modalities are used to focus on improving one’s ability to regulate emotions, thoughts, and behaviors. Further research is important to bring about changes to increase the effectiveness of SUDT.

CHAPTER FIVE

DISCUSSION

This qualitative systematic literature review compared the effectiveness of three (CBT) interventions used to treat SUD. The desired outcome was to clarify that, if any, of these modalities demonstrated greater evidence for efficacy to impact treatment by providing guidelines for appropriate clinical interventions. The review was used to examine the research problems and provided information for this theoretical study to answer the three research questions proposed. This review was designed to assemble pertinent and appropriate evidence from the current literature based on the eligibility criteria as defined by the research questions. The review was conducted using a protocol of specific steps to identify, select, and synthesize data from studies published in peer-reviewed journals or academic university processes. The protocol selected for this study was based on the Preferred Reporting Items for Systematic reviews and Metanalyses for Protocols from 2015 (PRISMA-P) (Moher et al., 2015). This study was a qualitative systematic literature review and was facilitated by using the PRISMA-P flow chart in Appendix A and the PRISMA-P checklist provided in Appendix B.

Research indicates that relapse rates post-treatment for SUD can be greater than 60% (SAMHSA, 2019; Miller, Walters, & Bennett, 2001). Per the CASA Columbia National Advisory Commission on Addiction Treatment (2012), only a small percentage of persons receiving treatment were found to have received EB treatment due in part to a SUDT workforce unqualified to deliver EB practices even though a component for more successful treatment outcomes for SUD is the use of EB practices (National Institute on Drug Abuse, 2018). Using EB interventions is critical to improving treatment outcomes. EB practices have assisted advances in treatment and have provided clinicians with the ability to differentiate between the

most helpful techniques. There is an ethical component for clinicians to provide information regarding treatment outcomes to allow clients to make informed decisions about their care. Treatment providers must be educated and qualified to deliver EB practices. (Blease, Kelley, & Trachsel, 2018; CASA Columbia National Advisory Commission on Addiction Treatment, 2012; Institute of Medicine, 2006; Kelly, Heath, Howick, & Greenhalgh, 2015).

The evaluation was conducted through a thorough analysis of the literature using the research questions.

Findings

The impact of SUD on both the person and society is immense. Treatment of this disorder and the rates of relapse contribute to a behavioral health crisis. Improvement of treatments to address SUD and the relapse rates after treatment continue to be a significant contributor as readily available material for studies that add to the existing literature. Relapse rates after treatment can reach 60%. One component that has been shown to assist in combatting the high rates has been the use of EB practices, according to the National Institute of Drug Abuse (2018).

Properly used EB practices can reduce relapse rates, increase treatment retention, lesson behavioral issues, and improve QOL. In some cases, treatment modalities can ameliorate symptoms of co-occurring disorders as well as treat SUD. The high relapse rates continuously impact persons with SUD. Although SUD is a prevalent problem in society, improvements in care and interventions have only begun to better this trend incrementally. The best approach may be a multi-modal approach that uses the best aspects of several modalities to intervene with SUD cases.

Research Question One

That treatment modality: REBT, ACT, or DBT has greater published evidence for efficacy in SUDT as defined by a reduction in DSM 5 criteria symptoms for substance use disorder?

Important findings for the REBT studies regarding RQ1 were identified in the literature review. The focus of REBT studies in the treatment of SUD was how the reconstruction of irrational thoughts affect SUD. The supposition being that if thought could be altered, there would be a reduction in SUD factors. An explanation for this outcome is provided in Omeje et al. (2018). Pathologies at the root of SUD are correlated with dysfunctional cognitions, and when those beliefs are remediated, positive consequences will emerge. This hypothesis was a reason that the literature on REBT contained studies focusing on changes in thinking. Oltean and David (2018) and Omeje et al. (2018) concluded that these effects occurred after REBT's introduction. David, Cotet, Matu, Mogoase, and Stefan (2018) showed that the interventions are effective regardless of the degree of severity in clinical status. Boswell et al. (2017) provided evidence for the reduction of interpersonal problems and relational factors of DSM 5 criteria while the data from both Acosta et al. (2017) and Thylstrup, Schrøder, Fridell, and Hesse (2017) revealed a reduction of these problems with an increase rational thinking correlated to improvements in the ability to cope, social support and impulsivity. The intervention outcomes measured from these studies showed decreases in DSM 5 criteria.

The significance of these findings goes beyond what is seen in the studies. If the perspectives with which humans see events are causal to behavioral outcomes, they produce irrational and possibly pathological outcomes when those lenses are not rational. This can

produce positive outcomes that cross beyond SUD pathologies and can be applied to other areas of life.

Important findings for the ACT studies regarding RQ1 were identified in the literature review. ACT studies that focused on SUD treatment were performed to explore the supposition that rather than bringing about objectivity, changing the relationship that a person has with their thoughts can allow for behaviors that are not pathological, according to Rolffs, Rogge, and Wilson (2018). In Gonzalez-Menendez, Fernandez, Rodriguez, and Villagra (2014), there was evidence of improvements in multiple SUD domains. Lee, An, Levin, and Twohig (2015) presented evidence that ACT interventions improve DSM 5 criteria and that ACT improvements continue to improve over time with a transdiagnostic effect on other mental health problems. Results from Davoudi, Omidi, Sehat, and Sepehrmanesh (2017) point to positive outcomes in reducing DSM 5 symptoms and decreasing other co-occurring issues. Bahrami and Asghari (2017) and George and De Guzman (2015) showed evidence of a reduction in DSM 5 SUD criteria and that ACT interventions continued to improve emotion regulation over time.

The ACT outcomes show that the intervention improves SUD and improvements that increase over time and assist with transdiagnostic conditions. The significance of these findings goes beyond what is seen in the studies. It is possible that no matter that mental health issue is prominent, the introduction of ACT principles and techniques can help. With the improvement of factors that increase over time, there will be a corresponding reduction in cost or time and money since further treatment interventions can be shorter or even not needed.

Important findings for the DBT studies regarding RQ1 were identified in the literature review. DBT studies investigating SUDT were carried out by looking at improvements in regulating emotions as a mediator to SUD criteria. The study’s data showed reduced SUD

symptoms with increased treatment retention and lowered hospitalization rates despite having a co-occurring disorder. Hadland's (2019) results indicated an overall improvement in DSM 5 criteria despite co-occurring diagnosis criteria. Cavicchioli et al. (2019a) indicated improvements in emotion regulation and emotional avoidance with positive changes in DSM 5 criteria. This data included better treatment retention rates for DBT participants. Köck and Walter (2018) reviewed for indicators of improvement in SUD and included data on higher retention rates, especially for those who have been dually diagnosed. Maffei, Cavicchioli, Movalli, Cavallaro, and Fossati (2018) found a DBT mediating role in SUD improvements and improved retention rates. Robison and Luczakowsky (2015) showed improvements in SUD criteria despite a diagnosed personality disorder. Abdelkarim, Molokhia, Rady, and Ivanoff (2017) provided data indicating improved SUD, co-occurring disorders, improved retention, and subsequent hospitalization reduction.

The significance of these findings goes beyond what is seen in the studies. An increase in treatment retention provides the possibility that other interventions that target different mechanisms to treat similar problems will be more easily introduced. This increase could indicate a symbiotic relationship between DBT and other modalities. Remaining in treatment is a sign of treatment compliance. It is also possible that we could see better rates of medication compliance during treatment.

Research Question Two

Among REBT, ACT, and DBT for SUDT, which treatment modality has been associated with the highest level of evidence of improved quality of life as defined by improvements in health and wellness, increased social networks, improved emotion regulation, and reduction in irrational thinking?

Findings for the REBT studies regarding RQ2 were identified through the literature review. REBT studies that focused on QOL improvements provided little data and were conducted looking at the changes through the REBT mechanism of reframing. The literature for REBT on QOL contained two opportunities for the discussion of SUDT using REBT. The first study was a meta-analysis by David, Cotet, Matu, Mogoase, and Stefan (2018) that interpreted behavioral and health outcomes as QOL. The QOL data was measured by such improvements as lessened anger and depression. The second study data, Acosta et al. (2017), failed to show a treatment effect for change in QOL over time. Outcomes varied, and the data for REBT QOL improvements were not robust, nor did it point to improvement.

The significance of these findings indicates that further study for REBT is needed regarding QOL measures. There is just not enough evidence to provide meaningful data for this measure. As such, no conclusions can be made. However, concerning RQ2, the REBT studies do not produce evidence that is the highest level of evidence of the improved quality of life

Findings for the ACT studies were identified regarding RQ2 through the literature review process. Data for QOL appeared to be more robust than that from REBT studies and began to yield more results in later studies. Although this qualitative systematic literature review only looked at studies from the past five years, some of the earlier studies that were not excluded contained data that had not reflected QOL measures. Beginning with Lee, An, Levin, and Twohig (2015), a meta-analysis, approximately 30% of the studies mentioned a QOL measure used to examine efficacy. Those studies that measured for QOL contained evidence yielding results that pointed to statistically significant improvement. Thekiso et al. (2015) studied SUD patients who had co-occurring mental health issues such as bipolar disorder and depression. The

QOL improvements were correlated with fewer depression, anxiety, and irritability symptoms in the data.

Later studies began to focus on QOL as a measure. Levin, Haeger, Pierce, and Twohig (2017) used assessments to examine improvements in QOL. There was a significant improvement in QOL for those persons who received ACT treatment as an intervention. Progress occurred in valued living, improved distress, general anxiety, social anxiety, depression, and positive mental health. Davoudi, Omidi, Sehat, and Sepehrmanesh (2017) studied mean scores of depression and anxiety, looking for improvement from the administration of the ACT. Results from this randomized controlled trial provided positive outcomes that indicated QOL improvement. Meyer et al. (2018) looked for QOL measure improvements using the WHOQOLBREF. Data from this study indicated improvement with SUD and co-occurring PTSD with QOL measures suggested by improvement in functional impairment and depression levels.

The significance of these findings beyond what is in the studies in that there is evidence ACT produces QOL improvement. This evidence indicates that ACT can be useful in overall improvement since QOL is a broad measure. The efficacy of ACT with improvements in these areas shows ACT as a promising intervention for SUD treatment.

The important findings for the DBT studies regarding RQ2 identified in the literature review provided the highest level of evidence of improved quality of life as defined by improvements in health and wellness, increased social networks, improved emotion regulation, and reduction in irrational thinking. DBT results for QOL appeared to be more robust due to the DERS scale that provided data indicating positive changes in participants' ability to regulate

emotions, the main target of DBT. The DERS measures improvements in QOL. As such, the specific target of many DBT studies is an overall improvement for QOL.

Maffei, Cavicchioli, Movalli, Cavallaro, and Fossati (2018) DERS measure improvements demonstrated participants increased ability to accept emotions and engage in goal-directed behavior, indicating a reduction in impulsivity. Significant improvement in emotional regulation and reduction in impulsive behaviors contributed to the overall finding of improvement in QOL in this study. Cavicchioli et al. (2019) continued the trend in noting QOL improvement by utilizing the DERS to reduce maladaptive coping strategies when dealing with emotions. Cavicchioli et al. identified a large and significant decrease in difficulties in emotion regulation. The DERS was also used in Hadland (2019). This study noted that reinforcement of prosocial behaviors correlated with QOL improvement. A statistical analysis of the data pointed to a small but significant QOL difference in effect size from baseline to post-treatment outcomes. Sahranavard and Miri (2018) did not use the DERS to assess QOL. However, QOL improvement was indicated by assessing mean depression scores, which indicated that a significant percentage of the participant population had remission from depression. The study concluded DBT as effective in treating SUD depression symptoms, thus improving QOL.

Cavicchioli et al. (2019a) administered the DERS and the AAQ-II scales to measure improved QOL as a secondary outcome. The DERS yielded data of improved ability to regulate emotions. The AAQ-II measures yielded data of improved psychological flexibility. Positive effects of emotion regulation and psychological flexibility provided evidence of QOL improvements as secondary outcomes from baseline to post-treatment. Flynn et al. (2019) gathered qualitative data for overall improvements in QOL. The important area of qualitative data in this study used to examine QOL was the New Lease on Life theme gathered from

participant reports. The study showed QOL improvement at six months and at follow up with an improvement in mindfulness skills and a greater ability to regulate emotions. The New Lease on Life theme was equated to QOL, and improvements were noted to increase positive behaviors that improved confidence and assertiveness.

The significance of these findings is that DBT is effective in improving QOL. This modality provided the highest level of evidence for RQ2. This outcome is indicated in the number of studies that provided this evidence. Although ACT studies also showed QOL improvement that can complement DBT, earlier ACT studies did not examine QOL.

Research Question Three

What are the differences in SUDT effectiveness regarding increased days of abstinence before relapse between REBT, ACT, and DBT when compared?

The important findings for the REBT studies regarding RQ3 identified in the literature indicated that few studies of REBT looked at abstinence and that the evidence was underwhelming. Two REBT studies provided data regarding the REBT modality and increased days of abstinence. Acosta et al. (2017) used the Timeline Follow-Back (TLFB) and collateral informant reports to examine past daily alcohol use and other drugs. The outcome from baseline to treatment concluded with significant alcohol use reductions but did not provide evidence for abstinence. The interventions showed a harm reduction effect with fewer drinks consumed on days that drinking occurred. Thylstrup, Schrøder, Fridell, and Hesse (2017) used the ASI to determine composite scores for days abstinent 30 days before treatment. Assessments were performed at baseline before treatment and at follow-up interviews at 3 and 9 months after randomization. Statistically significant results were obtained from the data analysis. The REBT treatment group showed 3% abstinence at baseline, 17 % at three months, and 21 % at nine

months. At the 3-month follow-up, patients who had been randomized to the treatment group had increased days abstinent compared to patients in the control group.

The significance of these findings is that there was some improvement with lessened use but not necessarily abstinence. The last study indicates a rate of abstinence at only 21%. There needs to be more data to conclude if the outcomes are to be based on abstinence-only. This lessened use could indicate that bringing objectivity based on the REBT model can produce harm reduction that can be a better indicator of treatment effectiveness, although more studies must be conducted.

Findings for the ACT studies included in this qualitative systematic literature review regarding RQ3 were identified. For ACT, few studies provided evidence for an increase in days of abstinence. Bahrami and Asghari's (2017) study is an example of the difficulty in finding studies that discuss abstinence as an effect of treatment to measure efficacy. The data showed a reduction in alcohol use and substance use from baseline to post-treatment without differentiation between abstinence or use reduction. The study demonstrated evidence of effectiveness within the measured domain but was semi-experimental and had no control group. Davoudi, Omidi, Sehat, and Sepehrmanesh (2017) was a study on nicotine use cessation. The study's findings showed that smoking cessation rates were higher in the ACT treatment group than the control group based on the larger number of patients in the intervention group who quitted smoking. In addition, greater efficacy was achieved with follow up results at treatment termination. Lee, An, Levin, and Twohig (2015) analyzed 10 ACT studies with a meta-analysis using days of abstinence to measure efficacy. Three studies provided data that showed an increase in the use of cessation over TAU. Two studies provided positive outcomes but were not statistically significant, while one study showed a small effect size, not to the statistical

significance that favored a cognitive-behavioral intervention. The aggregate data yielded an effect size favoring ACT over TAU.

The caveat from this study was that cessation is not a measure that provides value because the reduction in use may lead to improved outcomes. Gonzalez-Menendez, Fernandez, Rodriguez, and Villagra (2014) lead a randomized controlled trial on ACT's efficacy. ACT was compared against REBT. At post-treatment, ACT participants registered abstinence at 27.8% at the end of treatment, at six months, it was 42.8%, 84.6 at twelve months, and 85.7 at eighteen-month follow-ups. The CBT group in Gonzalez-Menendez et al. registered abstinence rates 15.8% at the end of treatment, 25% at 6-month, 54.5% at 12-month and 50% at 18-month. The differences were statistically significant in the comparison.

The significance of these findings is that in at least one of the studies, a comparison between two modalities REBT and ACT, leads to data showing ACT providing better abstinence outcomes than REBT. These findings also point to the idea that abstinence should not be the only way to treat treatment.

Findings for the DBT studies regarding RQ3 identified in the literature included outcomes that explore abstinence as a measure. Maffei, Cavicchioli, Movalli, Cavallaro, and Fossati (2018) was an initial study of DBT as a stand-alone treatment for SUD designed to test if treatment with DBT could increase CDA. 73.2% of the completers achieved abstinence at the end of the program. The results showed that participants improved in the severity of alcohol use. There was a large increase in CDA between the last month before admission to treatment and the program's end. Cavicchioli et al. (2019) performed clinical trials on a DBT intervention for alcohol use disorder (AUD) with co-occurring SUD. The study investigated pre to post-treatment changes in consecutive days abstinent (CDA). The results showed significant increases in

lengthier CDA. This study replicated and extended evidence that had already shown similar empirical results using a stand-alone DBT intervention. Flynn et al. (2019) studied the efficacy of DBT for treating SUD with a mixed methods questionnaire, the Cork Impact of Substance Misuse Scale (CISMS). The baseline indicator showed that 63% of the participants had indicated substance use in the thirty days before treatment, and 37% reported no substance use. For those persons who completed treatment, 19% reported use in the previous month while 81% reported no use. Quantitative results indicated reductions in binge drinking and use of drugs. Nyamathi et al. (2017) performed a randomized controlled trial that compared DBT with another health program in treating SUD. Abstinence was measured by self-report and urine analysis. At baseline, 67.75 of the DBT group reported using drugs in the last six months while alcohol use was 41.5%. The efficacy of the DBT program showed in the results that compared baseline to 6-month follow-up. 65.5% of the DBT participants reported abstinence that was confirmed by urine samples.

The significance of these findings shows that DBT is an effective treatment when the desired goal is abstinence. The results indicate better results than overall averages that have been reported in findings from the National Institute of Drug Abuse (2018).

Recommendations for Practice

The cost of SUD to society is immense. With the rates of relapse as high as 60%, SUD interventions must be the most effective. EB practices should be mandated by licensure.

It is critical in the substance use disorder field to provide therapeutic interventions that are EB. In the case of this qualitative systematic literature review, only research question 2 came out with a clear answer, but the question was designed to look at that modality provided more

evidence. In this case, if a modality had more studies, it would be the favorite even if the evidence for another modality pointed to its efficacy.

Overall findings suggest that there is some improvement for all modalities in the area of SUD. However, each modality targets SUD using different tools or interventions from different aspects, angles, and theoretical underpinnings. The targets produce different ancillary results apart from the SUDT results. For example, evidence indicates that DBT studies have yielded data showing it effectively targets suicidality, depression, and SUD. ACT studies have shown that improvement continues to increase after treatment and effective with patients with other mental health diagnoses. DBT and ACT have been linked with effective treatment of persons diagnosed with co-occurring mental health issues. This linkage indicates the use of these modalities to intervene trans-diagnostically. REBT has been shown to introduce data in the reframing process that assists in bringing a lens of objectivity to situations. This effect could be used primarily in crises where irrationality is the core issue, and what is needed is the client's ability to see things from an alternative perspective.

One takeaway that is important to mention is from the data for abstinence as a result. Pushing for abstinence-based treatment could be a mistake. Some studies do bear out data that shows that abstinence can be achieved. One line of thinking is that all persons who have a SUD should attain abstinence. However, this can produce poor results, especially when it comes to failure due to relapse. If the goal is abstinence and not achieved, this could be conceived as a treatment failure. The models of ACT and DBT hold ideas that do not necessitate the acceptance of abstinence to be effective. The methods from DBT use a push for abstinence and the knowledge that it is possible combined with the dialectic that relapse is also part of the equation while ACT uses the acceptance of thoughts and emotions in any psychological state as the

starting point to allow for prosocial behavior. This behavior is designed by the person so that if they choose reduced consumption that is pro-social, which reduces the pathology of their problems, then this outcome can be effective. Furthermore, perhaps REBT would indicate that the most objective stance can be that there is a corresponding reduction in pathology by reducing intake. Providers of SUDT should offer education on the alternatives and on outcomes for both abstinence-based and harm reduction models.

Another takeaway that will improve the practice of SUDT is to train and educate providers to perform group therapeutic services that are not patently educational. Reliance on educational groups allows facilitators to avoid issues with lack of experience and is taught due to barriers created at the organizational level despite evidence that education is not an effective intervention. Using evidence-based practices could allow for process groups where tools are introduced and practiced rather than each group being a classroom to teach facts. It would also be important to teach persons how to properly use the group process to affect change while increasing counselor exposure to complex group dynamics with more training and experience. The EB groups would provide tools from EB modalities. The presentation could be designed to deliver a specific CBT tool and allow the facilitator to add their own way of delivering. This freedom has been shown to make a difference. It is beneficial to have the group designed or influenced by the facilitator after learning different modalities and tools to improve group dynamics because the deliverer puts a part of themselves into the mix. They could use their own group process and adapt and accommodate the delivery to what they preferred. Both these ideas had been discussed in Wendt and Gone (2018). Put into action and using studies like this qualitative systematic literature review to choose the best EB practices will improve upon this idea.

The combined study used many of the noted approaches together and found a high rate of effectiveness. This positive outcome would indicate that SUD treatment should be a combined treatment to introduce multiple tools from different modalities. I cannot help but think of the old saying, “everything but the kitchen sink.” Another reason for this stance is that it is possible that crossing modalities and teaching many different tools would allow one person who is more easily able to use one tool over another to learn that tool so that chances of success might increase.

Rather than target SUD individually, it would be prudent to teach each of these tools as complementary to have better overall results in the battle against SUD. As an example, we can see that both ACT and DBT have shown better treatment retention rates. Evidence indicates that there is a correlation between treatment retention rates and outcomes. These modalities could be used to retain people in treatment. The idea that REBT is used in changing thoughts brings about the idea that one is already looking at their thoughts. This method could be used in conjunction with ACT, which takes a “notice and allow” mindfulness approach so that the two modalities improve upon each other.

I had begun to see SUDT as something that perhaps could have been improved by determining which of these three modalities could be shown to be more effective. The evidence is divergent and is not compatible with this question due to the targets, theoretical backgrounds of the modalities, and the outcomes produced. This evidence suggests that a person with a diagnosable SUD who is suicidal and has irrational thoughts regarding substances, behaviors, and social situations, could benefit from REBT.

These combined interventions can help a person see the differences between rational and irrational thoughts, deal with suicidality often viewed as a solution to problems and transcend

and alter the relationship between thoughts and emotions. Each modality would function in concert and in service of allowing non-pathological behavior to occur. Therapeutic approaches for SUD should comprise a combined treatment method using a combination of models that also maintain each approach's fidelity. This can be accomplished by delivering services that offer each modality to deliver the full intervention for each.

Recommendations for Research

REBT presents an interesting dilemma. It is one of the most widely used modalities even after 60 years. We can see its influence in manualized treatments in many areas, from anger management to SUD. The current study showed that evidence for REBT and its efficacy is out of date. It would be beneficial to study REBT using randomized clinical trials that bring evidence of its effectiveness into the 21st century with current studies.

ACT studies would need to be more robust using more participants. The evidence is current and continues. The studies, however, have a small participant size. A randomized trial, including larger sample size, could provide efficacy evidence with greater external validity and be applicable in more settings.

DBT studies provided the most evidence in the literature. The continuation of randomized controlled trials could be used to provide more evidence. Follow up data would improve future DBT studies.

A suggestion for future research is to conduct studies that combine these modalities and with medication-assisted treatment. Keeping these modalities separate is akin to Republicans and Democrats working independently and not providing bipartisan support. By creating lessons that include tools from each modality and teaching them to participants, a study could provide evidence for an eclectic approach. This suggestion comes from studies like Timko et al. (2016)

that concluded that MAT is associated with better outcomes. In this case, treatments were combined with MAT, suggesting that perhaps a combination of modalities could be used in studies to reflect this method. It would be essential to find ways to combine tools from each modality to see if this increases the effectiveness.

Persons who conduct these studies should broaden the study influence by looking at the efficacy of treatment through the lens of treatment retention, length, DSM 5 criteria, and case improvements. This type of study could be accomplished using assessments that include these measures and through secondary analysis of the studies' data. Follow up data would also be an important part of any study. There were instances in the literature where studies concluded at treatment termination. We could not have seen the data indicating that ACT has a sleeper effect, and results continue to improve over time had there been no follow up on the studies.

Conclusion

Significant findings were uncovered from conducting this qualitative systematic literature review. There were instances where one modality appears to have more evidence in the research questions, and in those cases, it was due to having more studies. It appears that tapping the best evidence-based modalities to treat substance use problems is a work in progress. This is both a blessing and a drawback. It shows us that we are continuing to work toward better treatment and still have far to go.

What is clear is that the effects of SUDs are costly. The relapse rates from current treatments are high, and, in many cases, the treatment is effective in only 50% of the cases on average. Research showed that each of the modalities targeted specific mechanisms upon which modality’s vision of SUD's cause was based. Those targets were shown to have changed measurably.

There were ancillary effects of treatments that were not the purported targets of modalities that provided the impetus to justify practice recommendations. Those recommendations were that practice should mandate the use of EB treatments. ACT and DBT should be used with DD clients, and REBT should be used in crises. Counselors should be taught how to use the group process to affect change correctly, and this should include counselor exposure to complex group dynamics. Providers of SUDT should offer education on the alternatives and on outcomes for both abstinence-based and harm reduction models when introducing EB treatments. Most important is that multiple approaches should be taught during treatment, emphasizing maintaining each approach's fidelity, so that is it provided as a whole.

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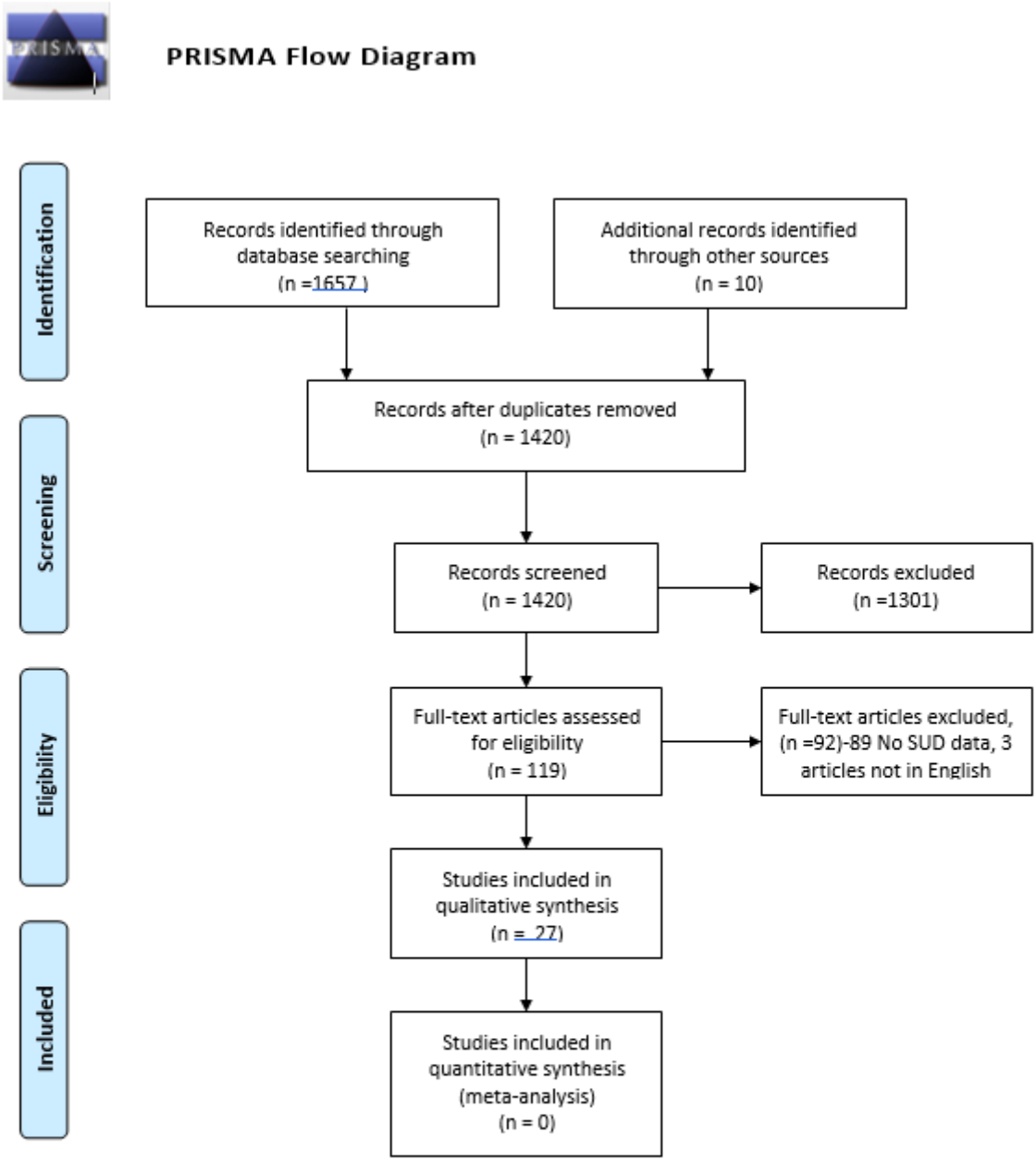
APPENDIX A



From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). *Preferred Reporting Items for Systematic Reviews and Meta-Analyses*: The PRISMA Statement. PLoS Med 6(7): e1000097. doi:10.1371/journal.pmed1000097

For more information, visit www.prisma-statement.org.

APPENDIX B

PRISMA-P 2015 Checklist

This checklist has been adapted for use with systematic review protocol from Table 3 in Moher D et al: Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement. *Systematic Reviews* 2015 **4**:1

Section/topic	#	Checklist item	Information reported		Line number(s)
			Yes	No	
ADMINISTRATIVE INFORMATION					
Title					
Identification	1a	Identify the report as a protocol of a systematic review	☐	☐	
Update	1b	If the protocol is for an update of a previous systematic review, identify as such	☐	☐	
Registration	2	If registered, provide the name of the registry (e.g., PROSPERO) and registration number in the Abstract	☐	☐	
Authors					
Contact	3a	Provide name, institutional affiliation, and e-mail address of all protocol authors; provide physical mailing address of corresponding author	☐	☐	
Contributions	3b	Describe contributions of protocol authors and identify the guarantor of the review	☐	☐	
Amendments	4	If the protocol represents an amendment of a previously completed or published protocol, identify as such and list changes; otherwise, state plan for documenting important protocol amendments	☐	☐	
Support					
Sources	5a	Indicate sources of financial or other support for the review	☐	☐	
Sponsor	5b	Provide name for the review funder and/or sponsor	☐	☐	
Role of sponsor/funder	5c	Describe roles of funder(s), sponsor(s), and/or institution(s), if any, in developing the protocol	☐	☐	
INTRODUCTION					
Rationale	6	Describe the rationale for the review in the context of what is already known	☐	☐	
Objectives	7	Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO)	☐	☐	

Section/topic	#	Checklist item	Information reported		Line number(s)
			Yes	No	
METHODS					
Eligibility criteria	8	Specify the study characteristics (e.g., PICO, study design, setting, time frame) and report characteristics (e.g., years considered, language, publication status) to be used as criteria for eligibility for the review	☐	☐	
Information sources	9	Describe all intended information sources (e.g., electronic databases, contact with study authors, trial registers, or other grey literature sources) with planned dates of coverage	☐	☐	
Search strategy	10	Present draft of search strategy to be used for at least one electronic database, including planned limits, such that it could be repeated	☐	☐	
STUDY RECORDS					
Data management	11a	Describe the mechanism(s) that will be used to manage records and data throughout the review	☐	☐	
Selection process	11b	State the process that will be used for selecting studies (e.g., two independent reviewers) through each phase of the review (i.e., screening, eligibility, and inclusion in meta-analysis)	☐	☐	
Data collection process	11c	Describe planned method of extracting data from reports (e.g., piloting forms, done independently, in duplicate), any processes for obtaining and confirming data from investigators	☐	☐	
Data items	12	List and define all variables for which data will be sought (e.g., PICO items, funding sources), any pre-planned data assumptions and simplifications	☐	☐	
Outcomes and prioritization	13	List and define all outcomes for which data will be sought, including prioritization of main and additional outcomes, with rationale	☐	☐	
Risk of bias in individual studies	14	Describe anticipated methods for assessing risk of bias of individual studies, including whether this will be done at the outcome or study level, or both; state how this information will be used in data synthesis	☐	☐	
DATA					
Synthesis	15a	Describe criteria under which study data will be quantitatively synthesized	☐	☐	
	15b	If data are appropriate for quantitative synthesis, describe planned summary measures, methods of handling data, and methods of combining data from studies, including any planned exploration of consistency (e.g., I^2, Kendall's tau)	☐	☐	
	15c	Describe any proposed additional analyses (e.g., sensitivity or subgroup analyses, meta-regression)	☐	☐	
	15d	If quantitative synthesis is not appropriate, describe the type of summary planned	☐	☐	

Section/topic	#	Checklist item	Information reported		Line number(s)
			Yes	No	
Meta-bias(es)	16	Specify any planned assessment of meta-bias(es) (e.g., publication bias across studies, selective reporting within studies)	☐	☐	
Confidence in cumulative evidence	17	Describe how the strength of the body of evidence will be assessed (e.g., GRADE)	☐	☐	