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Rural Colorado Drug Courts: A Program Evaluation of Two Different Modalities

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Abstract

According to the Colorado Judicial Branch, 78 problem-solving courts operate in the 20 judicial districts in Colorado. The Summit County and Eagle County drug court programs are located in Colorado's Fifth Judicial District and have not been previously studied. Evaluating treatment programs for effectiveness contributes to social change because it ensures individuals in need of treatment are receiving the proper services. The Eagle County drug court program had 117 participants and the Summit County drug court program had 33 participants. The Summit County Drug Court used 2 cognitive behavioral therapies: moral reconation therapy and strategies for self-improvement and change. The Eagle County Drug Court used the new Planting Seeds: A Client-Centered Approach to Addiction Treatment program in conjunction with mandatory 12-step support group participation as the basis for their treatment intervention. All participants in both groups completed a pre- and posttest Level of Service Inventory-Revised assessment, which measured the risk of recidivism, and the Adult Substance Use Survey-Revised to assess the severity of their substance use disorder. The data were analyzed using an analysis of covariance and a linear mixed-effects model; posttest Level of Service Inventory-Revised scores served as the dependent variable. Results indicated that successfully completing treatment significantly lowered the risk of recidivism, and that the Eagle County participants were more likely than the Summit County participants to successfully complete treatment. This study contributes to social change by advancing a new intervention that assists in keeping individuals who are in need of services in treatment longer, which in turn lowers their risk to reoffend.

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Chapter 1: Introduction to the Study

According to the American Society of Addiction Medicine (ASAM, 2011), *addiction* is a primary and chronic disease that adversely affects the brain's circuitry that regulates pleasure and reward, memory, and motivation. As this circuitry becomes more dysfunctional through repeated use of mood-altering chemicals, individuals begin to experience problematic symptoms in all areas of life, including biological, psychological, and interpersonal functioning (ASAM, 2011). Characteristics of addiction include (a) the inability to abstain from further use of mood-altering chemicals on a consistent basis, (b) emotional dysregulation, (c) craving intoxication, (d) poor behavioral control, (e) a diminished capacity to recognize the nature of their problem, and (f) a disruption of interpersonal relationships (ASAM, 2011). These characteristics create many problems for the individual, his/her loved ones, and society.

In 2007, approximately 1.8 million drug-related arrests were made in the United States, and more than 80% of these offenses involved possession of illicit substances. According to the Office of National Drug Control Policy (2004), drug abuse accounted for approximately $180 billion in additional health care costs, criminal justice services, and losses in productivity (Nordstrom & Dackis, 2011). Nordstrom and Dackis (2011) further stated that the majority of these costs are a direct result of drug-related crime. According to Brochu et al. (2006), most offenders in the United States have tested positive for at least one substance at the time of their arrest. For instance, in 2002, at least 60% of the entire population of inmates serving time in local jails for property offenses met diagnostic criteria for substance dependence (Nordstrom & Dackis, 2011). In

addition, MacCoun and Reuter (2001) stated that approximately 400,000 individuals were incarcerated in state jails and prisons who committed drug-related offenses, and the majority of federal prisoners (52%) committed drug-related crimes.

Because the criminal justice system has been overwhelmed by substance-abuse-related criminal cases, treatment services have been used as an alternative to incarceration (Brown, 2011). Drug treatment courts fall under the umbrella of "problem-solving courts." Such courts function as a type of therapeutic jurisprudence (Brown, 20011). According to Brown (2011), many criminal justice professionals have referred to these courts as the most important judicial initiative of the 20th century. Philosophically, drug courts operate on the premise that people who engage in crime do so because of an underlying psychosocial dysfunction (Brown, 2011). Problem-solving courts are therefore designed to address underlying illness and the psychosocial dysfunction, including chemical dependency that facilitates criminal behavior (Brown, 2011). In 2007 alone, there were approximately 14,000,000 arrests for violating drug laws in the United States; because of the negative effect that substance abuse has on the criminal justice system and society, problem-solving courts can provide a venue for positive social change.

In summary, substance abuse is a societal malady that leads to poor behavioral choices and increases in crime throughout the country. Substance-abuse-related issues also adversely affect families as loved ones and dependent children often suffer needlessly. Many communities experience other problems such as increased incarcerations, economic despair, and other unnecessary expenditures. In this study, I

sought to alleviate these social ills by identifying a more effective treatment intervention that will lower the risk of recidivism for those individuals who have been court sentenced to participate in substance abuse treatment.

Background of the Problem

Substance abuse and chemical dependency exert a significant burden on society's resources and on the criminal justice system, in particular. The relationship between crime and substance abuse has existed on the national stage for decades. In fact, the majority of offenders in the United States have tested positive for at least one substance at the time of their arrests (Brochu et al., 2006). The abuse and misuse of psychoactive substances exacerbate problematic behavior that creates human suffering, financial hardship, and criminal activity (Nordstrom & Dackis, 2011). Rounds-Bryant and Baker (2007) reported on a survey and assessment results of 752 prisoners taken during the intake process using the Substance Abuse Subtle Screening Inventory-3. These evaluations revealed that 72% of prisoners met criteria for substance dependence and 46% of these particular prisoners qualify for prison-based residential treatment.

According to the Uniform Crime Reporting Program of the Federal Bureau of Investigation, the United States incarcerates more people per capita than 26 of the largest European countries combined, and 80% of all prison inmates abuse drugs and alcohol (National Association of Drug Court Professionals [NADCP], 2009). The Uniform Crime Reporting Program further asserted that approximately 50% of jail inmates meet clinical diagnostic criteria for dependence, and that 60% of all criminal arrests involved individuals who tested positive for the presence of an intoxicating substance when they

were apprehended (NADCP, 2009). In addition, prison as an intervention, seems to have a limited effect on curbing crime and substance abuse, given that approximately 80% of drug abusers commit a new drug-related crime after their release (NADCP, 2009).

According to Feucht and Gfroerer (2011), U.S. jails and prisons must improve services for the treatment of substance abuse disorders and other mental health concerns. As of 2011, approximately half of all prison inmates were reincarcerated within 3 years of release (Feucht & Gfroerer, 2011). Even though the incarcerated population in the United States is large, probation and parole services witnessed the greatest growth in terms of the number of offenders entrenched in the criminal justice system. Feucht and Gfroerer thus asserted that the greatest need for therapeutic services exists in the population of offenders who are currently on probation and parole. The number of offenders under criminal justice supervision with either a substance use disorder or a mental health problem has risen by approximately 5 million in the past 25 years (Feucht & Gfroerer, 2011).

Drug courts were designed in response to many of the issues stated previously. Drug courts are judicially supervised dockets that work to address public health and public safety needs by furnishing treatment and legal accountability to the substance abusing criminal population (NADCP, 2009). These programs seek to alleviate the repetitive nature of drug-related criminal behavior by having individuals undergo chemical dependency treatment in lieu of incarceration.

The National Association of State Budget Officers (2013) called attention to many of the failed criminal justice policies of the1980s and the 1990s that pointed to mandatory

sentencing and other habitual offender laws as a main culprit for the high costs associated with correctional spending. The Bureau of Justice Statistics (BJS, 2009) stated that spending for corrections has increased by 336% since 1986, totaling an estimated $68 billion per year (Feucht & Gfroerer, 2011). The majority of this spending increase includes the cost of capital and infrastructure expenditures for new jails and prisons, which exhaust the available resources necessary to ensure probationers and parolees successfully complete criminal justice supervision (Feucht & Gfroerer, 2011). In 2007, people who failed on probation or parolee accounted for at least two thirds of the estimated 600,000 new incarcerations (Feucht & Gfroerer, 2011). Therefore, new interventions are necessary in addressing the problem of offenders failing to successfully complete their probationary sentences. Drug courts provide an alternative to incarceration, by providing treatment, increasing the level of supervision, requiring regular court appearances, and introducing a system of incentives and sanctions to help ensure that the targeted population lead healthier and crime-free lifestyles. Drug courts are also a measurable and effective solution to incarceration and recidivism, which in turn protects community safety (Marlow & Meyer, 2011).

Drug courts are designed to intervene on the criminality of addiction, and consequentially many of the other deleterious effects of the disease are also addressed, thereby benefiting society. For instance, the disease of addiction often serves to devastate or damage families (Jesuraj, 2012). Families have traditionally been viewed as a safe haven that furnishes individuals with intimacy, trust, and love, and many believe that families serve as the bedrock of society. However, familial bonds frequently unravel, and

society as a whole is harmed when addiction is introduced into the family system (Jesuraj, 2012). According to Jesuraj (2012), children from families of addiction suffer many emotional problems, such as shame, low self-esteem, and difficulty forming relationships. In fact, many children from addictive parents engage in theft, fighting, poor scholastic performances, substance abuse, or other antisocial behaviors. In short, the breakdown of the family system caused by addiction can lead to an increase in criminal behavior (Jesuraj, 2012).

Substance abuse also extracts a societal toll in terms of employment and health-related consequences (Substance Abuse and Mental Health Services Administration [SAMHSA], 2006). Health consequences associated with substance abuse include liver damage, Hepatitis, HIV, and increased emergency visits (Lundgren, Chassler, Ben-Ami, Purington, & Shilling, 2005). According to SAMHSA (2013), substance abusers tend to have poor employment track records, which forces society to expend valuable resources.

It is evident that addiction adversely affects society at large, and that treatment must be effective in improving and enhancing the quality of life for those afflicted by addiction, their loved ones, and society. Therefore, the purpose of this dissertation was to compare the treatment effectiveness of two different drug court programs in rural Colorado.

Statement of the Problem

Chief probation officer, Laurel Lamont, of the Fifth Judicial District, Colorado Drug Court Committee, noted that inconsistent treatment has proven ineffective for drug court participants in the district (L. Lamont, personal communication, July 1, 2012).

Indeed, ineffective treatment has failed in lowering recidivism rates and incidents of relapse, thereby increasing costs for drug court participants, the criminal justice system, and the community at large (L. Lamont, personal communication, July 1, 2012). Bryan Lynch (personal communication, October 19, 2015), probation supervisor for Colorado's Fifth Judicial District, stated that the probation department keeps statistics for recidivism, absconders, technical violations, and successful terminations, but that the treatment efficacy of both the Eagle County and the Summit County drug court programs have not been studied.

The purpose of this program evaluation compared these two drug court treatment programs to determine their effectiveness in reducing the risk of recidivism and improving treatment outcomes for adult first time and repeat substance-related offenses in Colorado's Fifth Judicial District. The independent variable was defined as two types of drug court programs: Eagle County and Summit County. The dependent variable was the posttest scores on the Level of Service Inventory-Revised (LSI-R). Covariates are typically used as control variables, and in this study, I used the LSI-R pretest scores and the Adult Substance Use Survey-Revised (ASUS-R) score that measures a person's involvement in substance use to establish a baseline for participants. I controlled these two scores by using an analysis of covariance (ANCOVA).

In this study, I evaluated two different drug court programs located in the same judicial district that differed in their treatment modalities. Eagle County has implemented a program called "Planting Seeds: A Client-Centered Approach to Addiction Treatment" along with 12-step program participation, whereas Summit County uses Strategies for

Self-Improvement and Change (SSIC) and moral reconation therapy (MRT). I discuss these modalities in detail later in this dissertation. Evaluating two different drug court programs can help identify the most effective program to be implemented, which could bring about positive social change for the local community as offenders receive more efficacious treatment. Furthermore, the judicial district could then use the study to produce more effective, efficient programs better serving their clients and the community.

This project is unique because I used it to address an existing issue and an opportunity for social change in the rural community on the Western Slope of Colorado. The results of this study could enhance and improve treatment outcomes for chemically dependent individuals involved in the local criminal justice system. Insights from this study may also provide treatment professionals, probation officers, and drug court teams with an improved framework for more effective treatment. By evaluating what type of treatment brings about the most positive outcomes, the local drug court treatment programs may focus their efforts on using the therapeutic interventions based on best evidence. This project will effect social change by providing valuable information and statistical data to help alleviate inconsistency and make suggestions for improving the effectiveness of the Fifth Judicial District's drug court treatment programs.

According to Marlowe and Meyer (2011), drug courts have, on a national basis, been proven to save taxpayer dollars, promote sobriety, and vastly reduce recidivism; this study can assist the local treatment programs to achieve these same positive attributes. Furthermore, MacKenzie and Weiss (2009) reviewed thousands of cases and therapeutic interventions such as cognitive behavior skills, academic education, sex offender

treatment, behavioral therapy, and drug courts, and their analysis indicated that drug treatment programs have successfully reduced recidivism. Because the local drug court was somewhat recently created in September 2009, the team has still been attempting to implement best practices. Thus, this project is particularly important, because it has the potential to improve the efficacy of treatment that will facilitate positive social change by providing an opportunity for drug court participants to improve the quality of their lives. The research problem that I addressed in this study is the need to identify and implement an effective treatment program that lowers the risk of recidivism based on the LSI-R test results.

Purpose of the Study

The purpose of this quantitative study was to compare the effectiveness of two different treatment modalities delivered to both male and female chemically dependent offenders. The participants in the Summit County program received a combination of MRT and SSIC, whereas the other group in Eagle County used the Planting Seeds treatment modality in conjunction with Alcoholics Anonymous meeting attendance. The study was conducted to determine if the Planting Seeds modality, a client-centered approach that was specifically designed to treat chemical dependency, would yield improved treatment outcomes as measured by lowering recidivism risk, as measured by the LSI-R, as compared with the other treatment program. Because Summit County uses the standard method of treatment in the Colorado criminal justice system, this program served as the control group for this study. This type of control group was enacted, because it is unethical to refuse treatment to those individuals who are in need of

treatment services. In a similar study, Heretick and Russell (2013) compared participants in the Colorado Juvenile Mental Health Court program with Colorado youth who were placed on three different levels of probation: (a) youth probationers who were diagnosed with mental disorders, and (b) other youth who were place in a diversionary program. Other recent evaluations of mental health courts have used comparison studies and control groups, including studies that implemented a pretest–posttest design (Heretick & Russell, 2013).

Design of the Study

The study was quasi-experimental, using archival data furnished by the Eagle County probation department. The data consisted of both male and female offenders who were supervised between October 2009 and September 2016. All participants were on probation in Colorado and afforded the opportunity to complete the prescribed treatment program and have their jail sentence suspended. The two different treatment programs were located in either Summit County or Eagle County, but both of the programs were subsumed under the administration of Colorado's Fifth Judicial District. Participants were sentenced to each program according to where their offense occurred.

At the time of this writing, Karen Hoeger serves as the drug court coordinator for the Fifth Judicial District, which oversees both drug court programs. According to Hoeger, in both Eagle and Summit Counties, once a case is referred to the drug court program, offenders submit to a substance abuse evaluation that consists of self-report data, a personal interview with a probation officer, and the administration of the LSI-R, which measures the risk of recidivism (K. Hoeger, personal communication, March 25,

2013). Hoeger further indicated that several key factors are evaluated, including the participants' substance use history, their willingness to participate in the program, and whether any of the offenders present potential risks to the community. The case is then staffed with the drug court team and a subsequent recommendation is made regarding admission.

Ultimately, the sentencing judge has the final decision taking into consideration the team's recommendations and the evaluations regarding a sentence to the drug court. After sentencing, offenders agree to and then sign specialized terms and conditions that provide the framework for treatment and probation. In all cases, the presumptive period of incarceration is suspended. If the defendant completes the program, the probation is terminated successfully. If, on the other hand, a defendant ultimately violates the terms of drug court, the incarceration period is unsuspended (K. Hoeger, personal communication, March 25, 2013).

Research Questions and Hypotheses

In the study, I sought to answer the following research question:

RQ1: Is there a difference in the reduction of risk for recidivism between the Eagle County and Summit County drug courts as measured by the LSI-R, and if there is a difference, does the Planting Seeds modality with 12-step meetings (Eagle County) have better outcomes than the cognitive behavioral approach of SSIC and MRT (Summit County)?

H_{01}: There is no significant difference between the Eagle County program and the Summit County program in reducing risk of recidivism.

H_{a1}: The alternative hypothesis is that there is a significant difference between the Eagle County program and the Summit County in reducing risk of recidivism.

RQ2: What is the difference between pretest and posttest LSI-R scores for the respective drug court programs?

H_{02}: There is no significant difference between the pretest and post-test LSI-R scores for the respective drug court programs.

H_{a2}: The alternative hypothesis is that there is a significant difference between the pretest and posttest LSI-R scores for the respective drug court programs.

Theoretical Framework

According to McGuire et al. (2008), cognitive behavioral therapy (CBT) is predicated on social learning theory. Social learning theory attempts to explain human behavior as a product of individual thought patterns and learned social activity. As it pertains to this study, social learning theory suggests that an offender's environment of criminal opportunities and criminal associations combined with personal individual traits, such as ingrained antisocial attitudes and beliefs are closely associated with criminal behavior (McGuire et al., 2008). Social learning theory further posits that these traits and environmental factors create systematic deficits in problem-solving ability, social interaction, and self-regulatory skills, leading to repetitive criminality (McGuire et al, 2008).

The National Association of Cognitive-Behavioral Therapists (2008) stated that CBT was developed in the 1950s, beginning when Ellis developed rational emotive behavior therapy. In the 1960s, Beck established cognitive therapy, a treatment modality

that has proven effective in treating depression, and other mood disorders. The National Association of Cognitive-Behavioral Therapists further stated that several treatment modalities fall under the umbrella of CBT, including dialectical behavioral therapy, rational emotive therapy, cognitive therapy, rational living therapy, and schema-focused therapy. CBT is an approach to psychotherapy that aims to change negative and maladaptive thinking patterns to produce healthier thinking and more acceptable behavior.

Despite the differences between the various therapeutic models, all CBT approaches have four basic tents. The basic tenets are (a) a collaborative relationship between therapist and client; (b) the assertion that psychological distress is created by cognitive distortions; (c) an emphasis on changing cognitions to produce healthier thinking, affect, and behavior; and (d) a generally time-limited treatment framework that addresses a specific problem area (Corey, 2008). CBT is a treatment approach that has been used in the treatment of substance abuse disorders, mental health disorders, and many co-occurring disorders. Most criminal justice systems use evidence-based treatments to prevent recidivism. This is the case in Colorado. According to Little, Robinson, Burnette, and Swan (2010), CBT is the most applied therapeutic intervention within the U.S. criminal justice system. More specifically, MRT has been researched and used more than other forms of CBT interventions within the criminal justice system (Little et al., 2010). SSIC, another CBT modality, is a commonly used treatment intervention used by therapists servicing criminal clients in Colorado.

SSIC is a manualized, cognitive behavioral program specifically designed to assist individuals with substance abuse issues and criminal histories to make positive changes in their lives (Wanberg & Milkman, 2005). The main impetus of the program is the reduction of recidivism by facilitating the adaptation of a healthier lifestyle, and by increasing personal responsibility. SSIC accomplishes its goals by restructuring an individual's cognitive distortions and thinking errors (Wanberg & Milkman, 2005).

MRT is a cognitive behavioral program that seeks to enhance an individual's self-image by promoting the development of moral reasoning (Huddleston, 2009). MRT is a therapeutic intervention explicitly designed to treat the criminal offender with substance abuse problems. The treatment facilitates positive change through a series of exercises that supplant criminal thinking with higher-level moral reasoning (Huddleston, 2009).

According to Witkiewitz, Steckler, Gavrishova, Jensen, and Wilder (2012), CBT treatment for addiction was more effective than no treatment at all in a review of 24 research studies. In addition, a meta-analysis conducted by Irvin, Bowers, Dunn, and Wong (1999) found that CBT improved psychological functioning and lowered incidents of substance misuse more than other active control groups. Other research findings determined that CBT was slightly more statistically beneficial in treating addiction than other treatment modalities (Witkiewitz et al., 2012). When particular drugs of abuse were analyzed, such as cocaine, marijuana, stimulates, and opiates, CBT proved to be the most effective modality in treating cannabis dependence (Witkiewitz et al., 2012). Other studies showed that CBT was the most effective modality in treating chemically dependent female participants (Witkiewitz et al., 2012).

However, Bowen, D'Arcy, Keegan, and Senthilselvan (2000) determined that patients who received CBT treatment for co-occurring alcoholism and panic disorder produced no better outcomes in the remission of alcoholism than alcohol use disorder treatment without CBT. In a comparable study, Schade et al. (2004) concluded that CBT used in conjunction with a substance abuse relapse prevention plan for treating co-occurring phobia disorders alleviated the phobia symptoms, but it did not have a positive effect in the remission of active alcoholism. In patients with co-occurring social anxiety and alcoholism, Randall, Thomas, and Thevos (2001) determined that adding CBT treatment to the alcohol use disorder treatment actually worsened the patients' alcoholic condition. According to Witkiewitz et al. (2012), CBT treatment for males tended to become less effective the longer the participants remained in treatment.

In response, Planting Seeds was developed to address the gaps in treatment left vacant by the standard manualized CBT. Planting Seeds is written with the substance-dependent client in mind and allows for individualized treatment plans to address each client's specific needs. The purpose of Planting Seeds is to explicitly treat chemical dependency, as opposed to cognitive processes, and to assist individuals to personally comprehend that a substance abuse problem exists, and how this problem adversely affects all areas of their lives. It accomplishes this by eliciting each client to share their personal story by using the client-centered attributes of empathy and understanding in a nonjudgmental environment to help enhance motivation to change. Much of Planting Seeds's philosophical underpinnings are grounded in the disease model of addiction as set forth by the ASAM (2011), and it stresses abstinence from all mood-alerting

substances. Planting Seeds provides a brief description of how addiction is a disease, and there is a self-assessment exercised based on the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV-TR*, American Psychiatric Association [APA], 2000) criteria designed to provide additional insight rather than a formalized diagnosis. Although Planting Seeds is a client-centered treatment modality, it also subscribes to the basic tenets of the social learning theory, addressing individual characteristics and emphasizing fellowship, peer-to-peer interaction, and community involvement. It is these attributes of Planting Seeds that allow it to easily blend with participation in 12-step support groups, such as Alcoholics Anonymous.

Operational Definitions

To help clarify the material and facilitate comprehension of the material, the following terms and definitions are provided:

Chemical dependency: Used interchangeably with *substance dependence*, a cluster of cognitive, behavioral, and psychological symptoms signifying that an individual continues to ingest a substance despite recurring consequences (as described in *DSM-IV-TR*; APA, 2000).

Client-centered therapy: A therapeutic approach founded by Rogers that has three core tenets: (a) bringing meaning to a conscious level by objectively stating feelings and attitudes, (b) promoting and developing insight, and (c) enabling and integrating insights to assist in behavioral modifications (McCaughn, 2014).

Cognitive behavioral therapy (*CBT*): A type of psychotherapeutic treatment that aids individuals in understanding and modifying cognitions and feelings that influence their behavior (Kushner, Peters, & Cooper, 2014).

Criminal justice system: A term referring to the amalgamation of legal and social institutions entrusted with enforcing criminal law in accordance with procedural rules and legal limitations (Andrews & Bonta, 2006).

Criminogenic: Producing or tending to cause or produce criminal activity.

Drug court: A specially designed court or docket with the purpose of achieving reductions in recidivism and substance abuse by providing judicial supervision over the treatment process (Bureau of Justice Assistance, 2005).

Holistic approach: Referring to an approach to psychotherapy whereby the individual is viewed as a whole being and within the systemic context of biology, sociology, economic, mental, and cultural factors that influence behavior.

Maladaptive behavior: A behavior or behavioral pattern that is counterproductive or self-destructive to the individual.

Minnesota model: An abstinence-based treatment modality that blends the principles of Alcoholics Anonymous with professional psychotherapy; this method was popularized by the Hazelden Foundation (Anderson, McGovern, & Dupont, 1999).

Moral reconation therapy (*MRT*): A cognitive-behavioral treatment modality developed for offenders involved in the criminal justice system. MRT is a standardized curriculum that is delivered by a professional facilitator in an open group format (Little & Robinson, 1988).

Motivational interviewing: A client-centered therapeutic modality that enhances intrinsic motivation to change by exploring and eliminating client ambivalence (Miller & Rollnick, 2002).

Multidisciplinary team: A team of individuals from different professions who come together and collaborate to improve client care (Kushner et al., 2014).

Neuroadaptation: A change in the sensory system that takes place over time due to constant stimulus.

Offender: An individual convicted of committing a criminal act who is under the jurisdiction of the criminal justice system (Andrews & Bonta, 2006).

Problem-solving court: A specially designed court or docket with the express purpose to address a particular societal problem such as drug abuse, driving while intoxicated offenses, or other mental health maladies (Bureau of Justice Assistance, 2005).

Recidivism: The rearrest, reconviction, reincarceration, or the commission of another criminal act while under criminal justice supervision.

Relapse: The term used to describe a person who returns to substance use after a period of sobriety.

Relapse prevention therapy: A treatment intervention that helps clients identify and cope with personal triggers to substance use. Relapse prevention also aids in managing high-risk situations and to enhance sustained abstinence (Kushner et al., 2014).

Substance abuse: A maladaptive pattern of substance use characterized by recurrent and significant substance use-related adverse consequences (as described in *DSM-IV-TR*; APA, 2000).

Substance dependence: A term used interchangeably with chemical dependency, a cluster of cognitive, behavioral, and psychological symptoms signifying that an individual continues to ingest a substance despite recurring consequences (as described in *DSM-IV-TR*; APA, 2000).

Limitations of the Study

A primary limitation of this study was that the offenders were neither randomly selected nor randomly assigned to groups. The Summit County program served as the control group for this study, as it uses the standard method of treatment, and ethical concerns dictate that people in must to receive treatment services. Participation in the Eagle County drug court program or the Summit County drug court program is determined by the location where the participant committed their offense. This also means that participants do not have a choice in treatment modalities. Thus, Eagle County offenders who are accepted into drug court must complete Planting Seeds and attend 12-step meetings, whereas Summit County offenders in drug court must complete SSIC and MRT. For instance, if an individual was arrested in Summit County and met eligibility criteria, then this individual would participate in the Summit County drug court program. All participants in this study were closely monitored by the Fifth Judicial District Probation Department, which encompasses both Eagle and Summit County.

Participants in both programs met *DSM-IV-TR* criteria for substance dependence and formal testing was implemented. All participants were assessed through a personal interview, the ASUS-R, and the LSI-R. Therefore, the Fifth Judicial District Probation Office employs pretest and posttest results; these test results formed the basis for this study. As aforementioned, this I used archival data based on actual program results, as participants for both treatment programs have similar criminal offenses and substance abuse histories.

I wrote the treatment curriculum, "Planting Seeds: A Client-Centered Approach to Addiction Treatment." The archival data used in this study were collected by and obtained from the Fifth Judicial District Probation Department. I was not involved in implementing this treatment curriculum, did not furnish any therapeutic services, and did not collect any of the actual data.

I do not attest to the integrity and professionalism of the treatment providers in both of the drug court programs. I assumed that the treatment in both programs was done with accuracy and integrity. Each of the drug court programs uses a different private treatment agency to furnish services. The treatment providers are chosen by the Probation Department through a government contract system.

Significance of the Study

According to Huebner and Cobbina (2008), a study was conducted with data that was supplied by the Illinois Probation Department that examined the recidivism rates of 3,017 probationers. This sample was divided into three groups: (a) those who needed substance abuse treatment and did not receive it, (b) those who successfully completed

treatment, and (c) those who dropped out of treatment. The group that completed substance abuse treatment had the lowest recidivism rate of 37%, those who did not receive treatment had a 53% recidivism rate, and the group that quit treatment had the highest recidivism rate of 67% (Huebner & Cobbina, 2008). In another study of approximately 20,000 chemically dependent welfare recipients with a history of criminal justice system involvement, it was determined that substance abuse treatment lowered the likelihood of another felony conviction by 34% (Estee & Nordlund, 2003). In addition, in the Washington State, illegal activity declined approximately 85% for those individuals who completed substance abuse treatment (Carney, Donovan, Weaver, & Bargoil, 2000). The research demonstrates that substance abuse treatment indeed has a profound effect on reducing criminal activity and lowering recidivism rates. However, there still appears to be a gap or inadequacies in the effectiveness of treatment in reducing the risk of recidivism in the Fifth Judicial District of Colorado (K. Hoeger, personal communication, March 25, 2013).

In this project, I uniquely addressed a currently existing issue in the rural community on the Western Slope of Colorado. The results of this study could help enhance, and identify best practices, which can then be implemented on a wider scale to improve treatment outcomes for individuals involved in the local criminal justice system. Insights from this study should provide treatment professionals, probation officers and drug court teams with an improved framework for more effective treatment. By evaluating what type of treatment engenders the most positive outcomes, the local drug court programs can focus their efforts on implementing their treatment interventions

based on best evidence. According to B. Lynch (personal communication, August 20, 2014), local drug court programs in this region were recently created in September 2009 and, as such, the team is still attempting to implement best practices and is awaiting this study's results to help make informed decisions. This is an important project because it has the potential to improve the efficacy of treatment that can facilitate positive social change by moving chemical dependent offenders from active addiction to a life of recovery.

Summary

Chemical dependency is a primary and chronic disease that adversely affects the brain's circuitry, disrupting cognitive function, as well as one's ability to regulate emotions and impulse control (ASAM, 2011). According to Leyton (2013), drug addiction and alcoholism are diagnosable diseases often manifesting behaviorally. Because addiction affects the way a person thinks and behaves, it is one of the major antecedents leading to criminal behavior, health consequences, and other societal problems. Drug courts are a therapeutic criminal justice intervention designed to alleviate many of the ill effects stemming from substance abuse. In Colorado, SSIC, a CBT program, is the most widely used therapeutic intervention. I examined whether a new therapeutic intervention, Planting Seeds, would be as effective as the CBT programs currently being used.

Chapter 2 contains a literature review of research and statistics on the disease of addiction, including *DSM-IV-TR* criteria for identifying and diagnosing substance abuse and dependency, the need for treatment, and an explanation of the drug court model of

treatment. I also provide a detailed description of both the Eagle County Drug Court program and the Summit County Drug Court program and the treatment modalities used in each.

Chapter 2: Literature Review

In this literature review, I provide information on the definitions of and the diagnostic criteria for substance abuse and substance dependency according to *DSM-IV-TR* (APA, 2000). Other information provided in this review will include criminal justice statistics; substance abuse statistics; an overview of problem-solving courts with statistics; information on the Eagle County and Summit County treatment programs, SSIC, MRT, and Planting Seeds; an overview of self-help group participation; and program evaluation.

The literature review contains research articles obtained through an online search of the following databases: Academic Search Premiere, PsycARTICLES, SocINDEX, PsycINFO, and the Criminal Justice Periodicals. I also obtained information through interviews and consultations with criminal justice and treatment professionals familiar with the programs being evaluated. I am also certified in and have professional experience teaching SSIC to criminal justice clients, have researched MRT, and am the author of the Planting Seeds treatment program. Because the Planting Seeds program was specifically developed to treat substance use disorders, I used the following research question and hypothesis for this study:

RQ1: Which treatment program is more effective in reducing the risk of recidivism based on the LSI-R: the Planting Seeds modality and mandated 12-step meetings (i.e., Alcoholics Anonymous) used in Eagle County or the cognitive behavioral approach of SSIC and MRT used in Summit County?

$H1_0$: The null hypothesis is that there is no significant difference between the Eagle County program and the Summit County in reducing risk of recidivism.

DSM-IV-TR Definitions and Diagnostic Criteria

Substance dependence is a disorder resulting in cognitive, behavioral, and psychological symptoms as the individual continues to engage in a pattern of substance use despite incurring significant substance-related consequences (APA, 2000). Substance dependence is diagnosed if any three of the following seven criteria are met within a 12-month period:

1. Tolerance is a physiological reaction that describes the need to ingest greater quantities of the substance to achieve intoxication or experiencing a diminished state of intoxication when using the same amount of the substance.
2. Withdrawal, a maladaptive physiological change with both cognitive and emotional properties, that occurs after prolonged use of a substance after substance levels in the body start to decline.
3. The substance is ingested in larger quantities or for a longer period of time than was intended.
4. A strong desire or multiple attempts to either control or curtail substance use.
5. A considerable amount of time is used to obtain the substance, ingest the substance, or recover from its effects.
6. Substance use precludes important social, recreational, or occupational activities.

7. The individual continues to use the substance despite experiencing ongoing physical and psychological problems. (APA, 2000, p. 110)

The *DSM-IV-TR* diagnostic criteria for substance dependence is further clarified by using two specifiers: (a) with physiological dependence, and (b) without physiological dependence (APA, 2000). The specifier of *with physiological dependence* should be used when there is evidence that an individual's symptomology includes either tolerance, withdrawal, or both. In most cases, physiological dependence is usually viewed as more clinically severe and problematic because it involves greater intake over a longer period of time. *Without physiological dependence* indicates an individual meets at least three of the diagnostic criteria excluding either tolerance or withdrawal.

Substance abuse is the other substance use disorder classified in the *DSM-IV-TR* (APA, 2000). An individual meets diagnostic criteria for substance abuse if one of the following is met within a 12-month period:

1. Substance use precludes fulfillment of major obligations.
2. Ongoing substance use during physically hazardous activities.
3. Continued substance use despite experiencing legal consequences.
4. Substance use adversely affects interpersonal. relationships. (APA, 2000, p. 114)

Substance abuse excludes the symptomology of tolerance, withdrawal, and repetitive compulsive use, by focusing on the consequences that result from the use. According to the *DSM-IV-TR* (APA, 2000), a substance abuse diagnosis is usually more common in individuals who have recently begun taking the substance. However, some individuals do

remain in the substance abuse classification without ever progressing or developing substance dependence symptomology. In addition, in reality, it is possible for an individual to meet criteria for substance dependence for one substance and substance abuse criteria for another substance simultaneously. The participants in the study were diagnosed using *DSM-IV-TR* criteria because this was the standard in effect at the inception of these two programs, as the *DSM-IV* was not released until May 2013 (K. Hoeger, personal communication, April 4, 2014).

Substance Dependence Overview

According to Koob and Simon (2009), substance dependence is a disorder that has been conceptualized as a malady that begins with impulsivity and then progresses to compulsivity. This essentially means that individuals start ingesting drugs and alcohol impulsively without much forethought until the behavior becomes an uncontrollable pattern. Koob and Simon further described substance dependence as a relapsing disorder that advances from an obsession to use—to an inability to control substance use—to the production of emotional consequences such as dysphoria, anxiety, and irritability. They further stated that the addictive cycle occurs in three distinct phases: (a) preoccupation, which signifies the phenomenon of craving, (b) binge use, (c) and withdrawal. However, it is important to note that not all drugs of abuse produce intense negative physical withdrawal symptoms even though the addictive cycle remains intact (Koob & Simon, 2009).

From a biological perspective, the brain's reward system and neurological changes to this system play a major role in the development of substance dependence

(Koob & Simon, 2009). The manipulation of the mesocorticolimbic dopamine system and the interacting components of the basal forebrain have been identified by researchers as facilitating hedonic or pleasure seeking neuroadaptations that lead to dependence. These adaptations will alter the function of neurotransmitters (opioid peptides, GABA, dopamine, and serotonin) that are related to the reinforcing or intoxicating effects of the drugs (Koob & Simon, 2009).

In summary, substance dependence compromises the brain's reward mechanisms by disrupting the neurochemical systems responsible for processing natural rewards and by enacting the anti-reward system (Koob & Simon, 2009). This disruption represents the neuroadaptation that is the byproduct of the brain's chronic exposure to drugs of abuse (Koob & Simon, 2009).

According to Leyton (2013), the disease concept of addiction has been debated by others who believe chemical dependency is a matter of choice. The belief that addiction represents a choice cannot be completely rejected because many chemically dependent individuals are able to stop without receiving a clinical intervention (Leyton, 2013). However, Leyton claimed that these individuals, who are able to quit without any clinical intervention, are in the less severe, milder category. *Stedman's Medical Dictionary* characterizes a disease as having two or more of the following criteria: recognized etiological agents, identifiable symptomology, and consistent anatomical alterations (Leyton, 2013). Because addictions are interconnected with pervasive medical, emotional, interpersonal, and occupational difficulties, substance use disorders are among

the top 10 causes of disability-adjusted life years lost worldwide; it is thus clear that chemical dependency has easily identifiable signs and symptoms (Leyton, 2013).

Leyton (2013) further delineated that substance dependence meets the other two criteria of a disease as defined in *Stedman's Medical Dictionary*. Leyton noted that evidence exists suggesting certain individuals are genetically predisposed and hence more susceptible to developing a substance use disorder. An individual's susceptibility follows multiple trajectories, including external factors such as impulsivity, sensation seeking, or conduct disorders, and internal factors, such as anxiety or depressed moods. Family life, prenatal care, and life stressors can also be, and often are, contributing factors in the development of substance dependence (Leyton, 2013). According to Leyton, both the genetic underpinnings inherent in substance dependence, and how specific external factors contribute to its etiology continue to support the disease concept of addiction.

Substance dependence shares similar characteristics with other medical diseases such as Type 2 diabetes, hypertension, and various forms of cancer (Leyton, 2013). Each of these maladies is influenced by environmental factors and has genetic and biological underpinnings (Leyton, 2013). Prolonged exposure to drugs leads to long-lasting neuroplastic changes to the brain which alter brain chemistry and drug response as diet and outside chemicals can lead to other bodily changes. According to Leyton (2013), substance dependence is not only a mental illness but also a prototypical one.

Substance Abuse Statistics

Substance abuse and problems stemming from substance use disorders continue to place a burden on society. According to the National Institute on Drug Abuse (NIDA,

2012), the number of drug-related fatalities has doubled since 1980. In fact, the statistics show that approximately one in four deaths in the United States is attributable to substance abuse (NIDA, 2012). Substance dependence is responsible for more illnesses, deaths, and disabilities than any other preventable health issue (NIDA, 2012).

According to the SAMHSA (2013), the number of individuals using illicit drugs in the United States in 2008 grew from 8.1% of the total population to approximately 9.2% in 2012. In addition, the number of heroin users almost doubled from 2007 to 2012, as 669,000 people reported usage of the drug. In 2012, there were approximately 24 million Americans who regularly used some form of illicit drugs (SAMHSA, 2013).

Marijuana is still the most commonly used illicit drug and it appears to be on the rise. In 2012, the number of daily marijuana users increased from 5.1 million people in 2007 to over 7 million people (SAMHSA, 2013). Alcohol consumption remained rather constant over the years with 22.6% of the population in 2012 reporting binge use of alcohol (SAMHSA, 2013). There were approximately 17 million people who self-identified as being heavy drinkers, which represents about 23% of the U.S. population (SAMHSA, 2013).

Employment

Employment is one area of function adversely affected by substance abuse. Substance misuse-related employment problems include inability to procure or maintain adequate employment, absenteeism or lateness, performance issues, and emotional difficulties stemming from these problems (Mackin, Horner, Harvey, & Stevens, 2005). Substance abuse can also have a reciprocal and synergistic relationship with employment

problems, as unemployment has been a culprit in the onset, maintenance, and intensification of drug addiction (Mackin et al., 2005). Mackin et al. (2005) attributed much of substance abuse-related employment problems, such as poor performance and absenteeism, to cognitive deficits created by habitual substance misuse. For example, chronic cocaine use has been associated with memory deficits, visuospatial dysfunction, and poor executive functioning, while chronic alcoholism has been associated with dysfunctional executive functioning, including memory and psychomotor agility (Mackin et al., 2005). Substance abusers also face other barriers to employment such as poor work histories, stigma, possible criminal justice involvement, and deficits in skill development (Melvin, Davis, & Koch, 2012).

In 2012, the rate of illicit drug use was higher for unemployed individuals than those who were employed full time (SAMHSA, 2013). Of the unemployed, 18.1% used illicit drugs, while 8.9% of full-time employed individuals reported the misuse of illicit drugs. However, illicit drug use by full-time employed individuals increased by 0.9% in the past year. Approximately 68% of the 21.5 million illicit drug users were employed on at least a part-time basis (SAMHSA, 2013). Despite the high level of employment, substance abusers are more apt to cause workplace accidents, file workers' compensation claims, and be less productive employees (NIDA, 2008). As the data show, substance-related disorders have a profound and detrimental effect on employment.

Health

Drug users have more health-related consequences and higher health services needs than the general population (Lundgren et al., 2005). Intravenous drug users are

much more likely to contract communicable diseases such as Hepatitis C, HIV, sexually transmitted diseases, and tuberculosis than other segments of the population. Even though episodes of HIV have decreased in the United States, intravenous drug users accounted for 25% of all new infections in 2001. In 2003, approximately 34% of all known living AIDS cases in Massachusetts were intravenous drug users (Lundgren et al., 2005).

When age groups are compared between non-drug users and drug users, drug users are 7 times more likely to die prematurely (Lundgren et al., 2005). Lundgren et al. (2005) examined homeless people in Los Angeles, and determined that drug use is predictive of negative outcomes on the leading health indicators of high blood pressure, impaired vision, skin, leg and foot problems, and the need for medical attention. Essentially, this means that substance abuse exacerbates the plight that homeless people face on a daily basis.

Substance abusers are also well documented to have high incidents of emergency room visits and use of community health clinics to treat a host of conditions such as communicable diseases, liver ailments and overdoses (Lundgren et al., 2005). In a Boston-area study, it was revealed that chronic substance abusers are 2.3 times more likely to seek emergency room care, and that their hospitalization rate is approximately 7 times higher than non-substance abusers (Lundgren et al., 2005).

The Drug Abuse Awareness Network reported that there were approximately 4.6 million drug-related emergency room visits in 2009, of which 1.3 million of these visits involved some form of substance abuse (NIDA, 2011). The Drug Abuse Awareness Network further reported that almost 500,000 of the emergency room visits involved the

nonmedical use of prescription drugs with opiate-based analgesics being the most abused substance. Oxycodone products, hydrocodone, and methadone were the most frequently abused opiates that precipitated emergency room visits. There were approximately 384,000 emergency room visits involving cocaine abuse, while heroin abuse accounted for roughly 160,000 emergency room visits. Marijuana was the culprit in 216,000 emergency room visits, various types of amphetamines were involved in approximately 100,000 emergency room visits, and underage alcohol consumption precipitated an estimated 97,000 emergency room visits (SAMHSA, 2006).

Both the Eagle County and the Summit County treatment programs included female participants. According to Robinson (2011), the rate of illicit drug use is higher for men; gender continues to be another significant factor to consider when studying addiction and its effects on society. In fact, men are 3 times more likely to abuse alcohol than their female counterparts (Robinson, 2011). However, women are much more susceptible to developing dependency, liver damage, and brain atrophy because they weigh less, have more fatty tissue, and possess lower amounts of the enzymes alcohol dehydrogenase and aldehyde dehydrogenase, which help the body process alcohol (Robinson, 2011). In 2006, approximately 42% of American women who were at least 12 years old reported using illicit drugs during their lifetime (Grant, 2009). According to SAMHSA (2013), 5.4% of all pregnant women between the ages of 15 and 44 reported using illicit drugs during their pregnancies. Consequently, the number of women seeking emergency room treatment for drug-related health problems increased 22% in the past decade. Also, about a third of all individuals who sought chemical dependency treatment

in 2002 were women. The number of HIV infections among women has grown 9% since 1992, and in 2001, there were an estimated 12,000 new infections involving women (SAMHSA, 2013).

Mental Health

Both the Eagle County and the Summit County programs admit and treat individuals with co-occurring disorders (K. Hoeger, personal communication, April 4, 2013). Treatment teams in both programs will occasionally refer a client to mental health counseling if these services are deemed as potentially helpful to a participant's progress (K. Hoeger, personal communication, April 4, 2014). Even though the Fifth Judicial District Probation Office does not tabulate statistics on mental health issues, this study contains an overview of such matters to present a comprehensive picture of the nature of addiction.

Petrakis, Gonzalez, Rosenheck, and Krystal (2002) reported that those with substance use disorders often have other co-occurring psychiatric disorders. Petrakis et al. opined that alcoholism is one of the most expensive health-related problems in the United States, accounting for $185 billion in annual expenditures. These costs are reflected in increased crime, treatment and medical expenditures, traffic accidents, and losses of workplace productivity (Petrakis et al., 2002). Individuals with a comorbid psychiatric disorder are 78% more likely to require mental health services (Petrakis et al., 2002). Worley, Tate, and Brown (2012) further noted that mood and anxiety disorders occur at much higher rates with individuals who also have a substance use disorder. Major depression disorder is the most common comorbid Axis I disorder, which like all co-

occurring disorders, intensifies addictive symptomology and complicates the recovery process (Worley et al., 2012). The National Institute of Mental Health Epidemiologic Catchment Area Program provided research data for the National Comorbidity Survey that detailed the prevalence rates of psychiatric disorders among individuals diagnosed with alcohol dependence. According to Petrakis et al., the prevalence rate in terms of percent for comorbidity and alcohol dependence are as follows: mood disorders (29.2%), major depressive disorder (27.9%), bipolar disorder (1.9%), anxiety disorders (36.9%), generalized anxiety disorder (11.6%), pain disorder (3.9%), posttraumatic stress disorder (7.7%), and schizophrenia (24%).

Studies have indicated that individuals with substance use disorders are far more likely to have a comorbid Axis II psychopathology (Ross, Dermatis, Levounis, & Galanter, 2003). Individuals with a comorbid personality disorder and a substance use disorder experience poorer psychosocial functioning with more severe symptomology than those with a substance use disorder only. One study based on randomly selected samples determined that the prevalence of personality disorders among the drug-addicted population was as high as 56% (Ross et al., 2003). According to Ross et al. (2003), comorbid personality disorders do not necessarily dictate poorer treatment outcomes for those receiving addiction treatment. However, borderline personality disorder and antisocial personality disorders were found to exacerbate poor psychosocial functioning, increase the severity of substance abuse, lower retention rates, and often preclude successful treatment outcomes (Ross et al., 2003). In a study by Ross et al., of 100 randomly selected patients at an inpatient treatment facility, the Cluster B personality

disorders were the most prevalent among the addict population. Antisocial personality disorder and borderline personality disorders were the most frequent co-occurring disorders with prevalence rates of 66% and 74%, respectively. This study also indicated that 68% of their sample met diagnostic criteria for two more comorbid personality disorders (Ross et al., 2003).

In summary, the likelihood of having a psychiatric disorder is greatly increased among individuals with substance dependence (Petrakis et al., 2002). People with co-occurring disorders are usually more difficult to treat, but positive treatment outcomes are possible. Also, people with substance dependence and a comorbid psychiatric disorder are more likely to receive treatment in a specialized mental health facility, which could enhance treatment outcomes (Petrakis et al., 2002).

Family

Over the past several decades, addiction and the misuse of illegal drugs have spread into all areas of life and the globe (Jesuraj, 2012). As such, family life has not escaped the problems created by addiction. According to Jesuraj (2012), family is the primary and dominant guiding force in an individual's life. A supportive and positive family environment nurtures children to grow and become healthy, well-adjusted adults. However, children from substance abusing households are more likely to develop emotional problems and to suffer other devastating consequences (Jesuraj, 2012). In fact, the National Drug and Interventionists (2015) stated that children of addicts are more than 3 times more likely to be physically, verbally, or sexually abused than children of nonaddicts. Children of addicts are also 4 times more likely to suffer neglect.

The dysfunction created by drug addiction within the family system causes a number of problems such as domestic violence, a disruption of family rituals, increased separations, divorce, poor role modeling, and economic difficulties (Jesuraj, 2012). Many addicted parents are unable to inculcate healthy moral values in their young children, which often leads to children entering the drug culture (Jesuraj, 2012). Addiction is often an antecedent to criminality and incarceration.

Aaron and Dallaire (2010) noted that important aspects of how parental incarceration affects the family have been generally overlooked. Children of incarcerated parents are likely to experience illegal drug use, to live in extreme poverty, suffer poor academic functioning, and are generally maladjusted. After a parent is removed from the home, families have to reorganize and adapt, which in many instances leaves children unsupervised. Also, adolescents exposed to parental incarceration engage in delinquent behavior more frequently than other children (Aaron & Dallaire, 2010). Drug courts were designed to help alleviate many of these problems by offering an alternative to incarceration (Marlowe & Meyer, 2011).

Criminality

According to Grant (2009), substance abuse continues to be very problematic for those afflicted, their families, and the society as a whole. Crime in the United States has been significantly affected by substance abuse. For example, 50% of all inmates serving time in a federal correctional facility are there due to a drug offense (Grant, 2009). Since 1980, drug offenses have more than tripled, and in 2005 there were 1.8 million drug arrests in the United States. This upward spike in drug arrests has led to increased

incarcerations in both federal and state penal institutions. The incarceration rates for drug arrests are some of the most significant indicators detailing how substance abuse is a nationwide problem in the United States (Grant, 2009).

Drug arrests represent only a part of the societal havoc created by substance abuse. Many crimes are committed by individuals under the influence of an intoxicating substance, or by people seeking money to obtain drugs. For instance, in 2004 approximately 18% of federal prisoners and 17% of state inmates reported that they were in custody because they broke the law to finance their drug habit (BJS, 2014). According to the BJS (2014), roughly 25% of individuals in local jails convicted of property-related offenses did so to obtain money to purchase drugs. This percentage also holds true for those in state custody: 30% of all property-related offenses and 26% of all drug offenses were committed by individuals seeking funds to obtain drugs (BJS, 2014).

According to the Federal Bureau of Investigation, murders committed during a narcotics felony—such as trafficking, manufacturing, or distribution—are considered drug-related homicides (BJS, 2014). Drug-related homicides often reflect substance abusers' obsession with obtaining their drug of choice. In other words, the substance abuser's obsession drives the profit motive, which in turn increases the nation's homicide rate. The number of drug-related homicides in the United States between the years of 2000 and 2007 is presented in Table 1 (BJS, 2014).

Table 1

Bureau of Justice Statistics: Statistics for Homicides

Year	Homicides
2000	595
2001	577
2002	670
2003	680
2004	554
2005	599
2006	800
2007	578

Prison inmates in both federal and state custody responded to a 2004 survey and approximately 30% of them reported being intoxicated at the time of their offense (BJS, 2014). Inmates with a mental health problem were also more likely to have met criteria for a substance use disorder. For instance, 63% of jail inmates with a mental health malady were substance dependent as opposed to 53% of the population without a mental health disorder. Alcohol intake was also higher for jail inmates with a type of mental disorder; in the month prior to their arrest, 81% reported alcohol use and 62% admitted drug use (BJS, 2014).

For the 7 years between 1997 and 2004, the rate of drug abuse among state prison inmates remained at 83% for any drug (BJS, 2014). Marijuana is still the most commonly abused drug for prison inmates, with approximately 80% of inmates reporting regular use

of the drug. For other drugs, the percentage breakdown among state prison inmates is as follows: cocaine (47%), opiates (23%), depressants (21%), stimulants (29%), and hallucinogenic drugs (33%; BJS, 2014). It is important to note that the prisoner drug abuse figures are a lot higher than the 8.7% of the general population that report illicit drug use (SAMHSA, 2013). The data indicate that substance abuse is a major factor driving crime in the United States. For instance, in Chicago—a city racked by crime—82% of all arrestees tested positive for illicit drugs at the time of arrest (Talbot, 2006). In addition, over a third of arrestees in the city of Chicago tested positive for more than one illicit substance at the time of their arrest (Talbot, 2006).

According to SAMHSA (2013), there were an estimated 1.5 million adults on parole or supervised release, and another 5 million adults on probation in 2012, which represents a significant increase over the past 25 years. Current illicit drug use was popular with both probationers and parolees, as approximately 30% were engaged in drug use while under legal supervision (SAMHSA, 2013). The rate of illicit drug use for current parolees and probationers also exceeds the 8.7% rate for the general population. In fact, 64% of those under criminal justice supervision reported using drugs regularly prior to their arrest (BJS, 2014). Individuals under criminal justice supervision are at least 3 times more likely to meet diagnostic criteria for substance dependence than the general population (SAMHSA, 2009).

The inmate population also experiences higher rates of mental illness as well as chemical dependency. According to SAMHSA (2013), approximately 17% of inmates in local jails have a mental health problem and many of these individuals also have a co-

occurring substance use disorder. The existence of mental health and addictive disorders further complicates the re-entry of offenders into society. Over 50% of all state prisoners are reincarcerated within 3 years of release. Individuals who failed at probation or parole represent two thirds of all new incarcerations each year, equaling almost 400,000 incarcerations annually. These high reincarceration rates listed above are illustrative of the fact that jails and prisons need to improve treatment service for those in custody (SAMHSA, 2013).

Driving while intoxicated is another substance abuse related problem that plagues the United States. According to the National Highway Traffic Safety Administration (NHTSA, 2013), in 2010, there were 10,228 traffic fatalities that were the direct result of drunk driving accidents. Even though this number represents a significant decrease in annual drunk driving fatalities since 1982 when the government started recording statistics, this averages to 28 deaths each day.

The NHTSA (2013) defines individuals who drive with high blood alcohol concentrations of .15, or those people who repeatedly drive intoxicated as “hardcore drunk drivers” (p.). According to the NHTSA, approximately 70% of drunk driving fatalities involved elevated blood alcohol concentrations levels of .15 or above. Individuals with a blood alcohol concentration of .16—which is twice the legal limit—and who were involved in a fatal car crash, were 8 times more likely to have a prior driving while intoxicated offense. In fact, hardcore drunk drivers average approximately one driving fatality every 48 minutes in the United States (NHTSA, 2013).

Men continue to outpace their female counterparts when it comes to drunk driving arrests. However, in the last three decades the amount of female drunk driving cases has increased dramatically. In 2011, there were more than 180,000 females arrested for driving while intoxicated in the United States, accounting for at least 25% of all driving under the influence (DUI) offenses (NHTSA, 2013).

According to the Colorado Division of Behavioral Health (2007), more than 30,000 arrests involved driving and some form of substance abuse. In 2008, 173 fatalities in Colorado were a direct result of traffic accidents involving intoxicated drivers. It is also important to note that a majority of these fatalities were caused by repeat DUI offenders (Colorado Division of Behavioral Health, 2010).

Problem-Solving Court Overview

Problem-solving courts were created in the 1990s to address specific offender needs, such as substance abuse and mental health issues, that were not served by traditional court proceedings (BJA, 2013). Problem-solving courts are designed to improve treatment outcomes that benefit both the offender and the surrounding community (BJA, 2013). According to Marlowe and Meyer (2011), drug courts, which are a type of problem-solving court, emerged from an overburdened court system. Dockets across the country were overwrought with drug cases and judges would repeatedly see the same defendants for either revocation hearings or on new charges (Marlowe & Meyer, 2011).

To aid in solving problems caused by substance abuse, the judicial system in conjunction with other professionals, developed problem-solving courts. The framework

for the formation of drug courts resulted from the 1962 U.S. Supreme Court case, *Robinson v. California* (Marlowe & Meyer, 2011). In this case, the Supreme Court ruled that criminalizing a mental illness such as chemical dependency would actually undermine the common good. In the majority opinion, the Supreme Court compared narcotics addiction to venereal disease and asserted that criminal penalties could be deemed a violation of the Eighth and 14th Amendments inflicting cruel and unusual punishments. The Supreme Court's ruling in this matter furthered the notion that compulsory treatment can better address the needs of the offender and society. From the Robinson case flowed the concept that treatment, as opposed to punishment, would be the preferred approach in addressing drug addiction (Marlowe & Meyer, 2011).

In the 1980s, when the U.S. judicial system experienced a plethora of repeat substance-involved offenders, judges began to innovate how they adjudicated cases (Marlowe & Meyer, 2011). The criminal justice system sought ways to better remedy chronic drunk driving, parental neglect, and other addiction-related problems. Since the NADCP was established, there are now more than 2,300 drug courts nationwide (Marlowe & Meyer, 2011).

Drug courts are populated throughout the country, and each program can be structured according to the team's standards. However, both the drug court program and the treatment modality must be structured into phases representing different stages of client development (Marlowe & Meyer, 2011). According to Marlowe and Meyer (2011), each drug court program is responsible to develop its own phasic structure that should be specifically designed to address the specific client population's clinical needs and

prognostic risks. The phasic system generally resembles the following structure: The first phase usually consists of an introduction to treatment, encouraging the client to actively engage in the treatment process. In the first phase, participants need to complete all clinical assessments, have punctual attendance, obtain a sponsor from a local self-help group, and if needed, participants should make sober-living arrangements before advancing to the next phase. In the second phase, participants start to acquire continuous days of abstinence and fulfill both probationary requirements and community services obligations. The third phase should emphasize prosocial behaviors, such as obtaining employment or educational pursuits. The last phase of treatment is predominantly a relapse prevention phase, as participants address triggers and work to maintain abstinence. Usually during the final phase of treatment drug court program commitments are reduced as participants pursue other healthy lifestyle activities such as self-help group meetings, employment, or scholastic endeavors (Marlowe & Meyer, 2011).

The drug court model mandates that treatment services be provided in conjunction with the court to ensure that prescribed goals, expectations, and missions are being met (see Appendix A for intake process). The integration of the treatment process with the criminal justice system and direct oversight of the court furnishes additional structure and leverage that increases adherence to program requirements (Kushner et al., 2014). This additional structure is vital because the substance abusing offender population requires more intensive services for an extended period of time, and the court system is able to keep the substance abusing offender population in treatment long enough to improve

treatment outcomes (Kushner et al., 2014). According to Kushner et al. (2014), the key components of the drug court model include:

1. Judicial leadership, as the courts are better situated to enable cooperation between the different agencies.
2. Early detection in identifying appropriate potential participants that can benefit from therapeutic services and in addressing current client needs.
3. A holistic, multidisciplinary team approach to treatment taking into account the client as a whole including culture, socioeconomic factors, and health concerns.
4. Open and honest lines of communication between all treatment team members with an ongoing assessment of client progress. This communication should allow for treatment recommendations, frequent updates, and referrals when appropriate.
5. The drug court team members must avoid creating adversarial relationships where each member works for unity and cohesion.

Marlowe and Meyer (2011) noted that drug court teams are typically comprised of a group of professionals from various disciplines who are responsible for managing the daily operations of the program and other supervisory functions. During team meetings, the judge assumes the leadership role and the rest of the team generally includes a probation officer, an assistant district attorney, a public defender, a law enforcement representative, a primary therapist, a program coordinator, and a case manager. It is recommended that team meetings occur weekly for staffing or status hearings to discuss

client progress, and to assess the effectiveness of treatment interventions. To be effective, team members need to realize that each professional represents a different discipline, and can provide unique insight into how to best address client needs (Marlowe & Meyer, 2011).

All problem-solving courts need to determine eligibility criteria to determine which type of offenders will be admitted into the program (Marlowe & Meyer, 2011). For instance, in many drug courts certain crimes like sex offenses or violent crimes will disqualify an individual from participation. Each program must have clearly defined admission criteria to ensure a complete understanding as to who can and cannot enter the drug court. Factors to consider when establishing eligibility criteria include the nature of the offense, past criminal history, violence history, living situation, and whether resources are available to address the offender's needs (Marlowe & Meyer, 2011).

Research has determined that offenders who are assessed as being both high risk and high need generally benefit more from the therapeutic interventions of drug court than offenders with other assessed designations (Marlowe & Meyer, 2011). *High risk* and *high need* refer to those offenders who have severe substance dependency, poor treatment histories, and antisocial personality traits. This is contrary to low-risk and low-need offenders who generally respond favorably to less intensive outpatient treatment programs. Drug courts should then expend their resources on those high-risk and high-reward offenders who can live safely in the community because in most cases they respond favorably to treatment, which justifies the financial commitment. Also, in clinical practice, it is not recommended to mix both high-risk and high-reward offenders

with low-risk and low-reward offenders because it dilutes treatment outcomes, given the divergent needs of the two populations who have different cognitive patterns and personal histories (Marlowe & Meyer, 2011).

According to Kushner et al. (2014), all individuals who are being considered for a drug court program must be screened for eligibility, according to both criminogenic and substance dependence. The criminogenic needs should focus on current charges, potential for further criminal activities, and past criminal history. Potential candidates for drug court participation should also meet diagnostic criteria for substance dependence to be eligible for admission (Kushner et al., 2014). Furthermore, the screening process should identify the following:

1. The existence of a substance use disorder,
2. The severity of the substance use disorder,
3. Any indication of a co-occurring mental disorder,
4. Criminogenic needs including potential risks,
5. Whether or not the potential client meets local eligibility requirements, and
6. The level of care and intensity of treatment needed to address client needs. (Kushner et al., 2014)

The information obtained from the screening should be used to direct the course of treatment for each individual and reflected in the treatment plan (Marlowe & Meyer, 2011).

A popular misconception is that addiction treatment is only effective for self-motivated persons who seek help of their own volition (Kushner et al., 2014). However,

in clinical practice many individuals who are court mandated to treatment with little internal motivation to change do experience positive outcomes (Kushner et al., 2014). According to Kushner et al. (2014), drug court treatment programs should adhere to the stages of change model, as most participants are either pre-contemplative or contemplative about their desire to change. This means that many drug court or problem-solving court participants have minimal insight into the nature of their substance use problems, and a limited desire to quit using drugs and alcohol. The behavioral patterns of substance-dependent offenders tend to be deeply entrenched and many of these individuals lack the self-confidence to make positive lifestyle changes (Kushner et al., 2014).

Because ambivalence and low self-efficacy are common traits among drug court participants, it is important that initial interventions reinforce treatment attendance through supportive counseling (Kushner et al., 2014). Therefore, treatment strategies should focus on enhancing and developing client motivation to make beneficial lifestyle changes. Treatment modalities such as motivational interviewing, motivational enhancement, and other incentive-based strategies are effective with the substance-dependent offender population because they nurture motivation without being heavily punitive in nature (Kushner et al., 2014).

Despite drug court programs not being totally punitive in nature, participants still need to be held accountable for their actions. Closely monitoring drug court participants and holding them accountable for their behavior is a key function for every drug court program in the country because the criminal justice system needs to fulfill public safety

obligations and maintain integrity (Marlowe & Meyer, 2011). Drug testing is one important vehicle for holding participants accountable. Drug testing is an objective procedure used to detect recent drug use, or as a procedure to confirm continued abstinence. Prior to starting the program, participants need to be informed that drug testing is used to monitor compliance, and to promote an abstinent lifestyle (Marlowe & Meyer, 2011).

Drug-Testing Protocol

Drug testing can be conducted using a variety of specimens, such as urine, sweat patch, oral fluid, hair, blood, and certain eye-scanning instruments (Marlowe & Meyer, 2011). The criminal justice system in Colorado utilizes both the urine test and the sweat patch device as the main tests to identify substance use. Critical attributes for drug testing procedures are that they provide results that are consistent, scientifically valid, and forensically defensible (Marlowe & Meyer, 2011). According to Marlowe and Meyer (2011), drug testing enhances the therapeutic environment by:

1. Establishing a deterrent for continued substance use
2. Recognizing those individuals who are truly remaining abstinent
3. Early detection of relapse and facilitating needed interventions
4. Providing a means for incentives, support and accountability
5. Helping facilitate the entire treatment process.

Drug Court Incentives and Sanctions

Drug court programs usually implement a system of both incentives and sanctions to help reinforce participants' motivation to change. Research has shown that high-risk,

antisocial drug addicts respond exceptionally well to positive reinforcement (Marlowe & Meyer, 2011). Steven Higgins is credited with developing a voucher system that rewards points each time a participant provides a clean urine analysis that could be redeemed for retail goods every time a participant provided a clean urine analysis (Kushner et al., 2014). In addition, Nancy Petry developed a positive reinforcement technique known as the "fishbowl" system. The fishbowl system allows participants to draw a slip of paper indicating a prize from a bowl after submitting drug-free urine. Both of these positive reinforcement interventions have been shown to be effective in drug court programs (Kushner et al., 2014).

Sanctions, on the other hand, represent punishments that drug courts utilize to address problematic behaviors, such as substance use or antisocial activities. Sanctions can take on different forms including increasing the number of therapeutic services, brief jail sentences, or even transferring the participants to a higher level of care (Kushner et al., 2014). It is important that sanctions that involve increased therapeutic services are not viewed strictly as a punishment, however, but rather a means to further aid the participant in eliminating self-destructive behaviors (Kushner et al., 2014).

In utilizing the incentives-and-sanctions technique, it is crucial that the reinforcements and the punishments are delivered in a consistent manner (Kushner et al., 2014). This means that the two types of interventions are designed to ensure that participants trust the process and make therapeutic progress. Marlowe and Meyer (2011) cautioned drug court programs against leaning too heavily toward the incentive side because it can limit intrinsic motivation and have detrimental effects on a participant's

prognostic outcome. Furthermore, if treatment is too heavily skewed toward punishment, participants will view the program as a punitive endeavor, and never intrinsically adapt to a drug-free lifestyle (Kushner et al., 2014).

According to Marlowe and Meyer (2011), graduation ceremonies are an important component of drug court treatment programs. The team should formally recognize and celebrate in the courtroom whenever a participant successfully completes the program. The graduation ceremonies are individualized according to each team's characteristics, but inviting local dignitaries or the arresting officer tends to support and validate the graduates as they re-enter the community. Because overcoming addiction and remaining sober for an extended period of time involves a major commitment, it is fundamental for the treatment team to celebrate this important milestone in a recovering addict's life (Marlowe & Meyer, 2011).

Colorado Drug Court Overview

Drug court professionals from six different jurisdictions in the United States, and with the assistance of the NADCP established a useful framework of 10 key components of drug courts to help facilitate comparisons between different programs (Tauber & Huddleston, 1999). These key components are reflected in the Colorado programs, as Denver was one of the participating jurisdictions. The 10 key components are listed below:

1. Drug courts need to integrate substance abuse treatment services.
2. Drug courts need to utilize a non-adversarial approach.

3. Participants need to be deemed eligible, identified promptly, and expediently placed in the program.
4. Drug courts need to provide access to a continuum of treatment services.
5. Abstinence needs to be monitored and verified.
6. A coordinated strategy to monitor participant compliance.
7. There must be ongoing judicial interaction with each individual participant.
8. Continued monitoring and evaluation of the program's effectiveness.
9. Continued interdisciplinary education to ensure program effectiveness.
10. Create partnerships with other drug courts, agencies, and community-based stakeholders.

The key components listed above closely resemble Kushner et al.'s (2014) recommendations, including early detection of potential participants, open lines of communication, non-adversarial treatment, and judicial leadership. Furthermore, the drug courts in Colorado rest upon the coordinated efforts of the legal system, including the judiciary, defense bar, the probation department, the prosecutor's office, law enforcement, and mental service providers (Tauber & Huddleston, 1999). This collaboration of professionals is designed to disrupt the cycle of addiction and criminal behavior (Tauber & Huddleston, 1999).

According to the Colorado State Court Administrator's Office (2008), the target population for Colorado's drug courts was identified as those substance-dependent offenders who are in high need of treatment services and at high risk for re-offending. In Colorado, the participant identification process involves the implementation of the LSI-R,

the ASUS-R, and a clinical assessment by a licensed treatment provider. The LSI-R assesses recidivism risk, and the ASUS is utilized to determine the level severity of the addictive disorder and the offender's need for treatment (Colorado State Court Administrator's Office, 2008).

The Denver Drug Court was established utilizing a system of tracks and phases. The tracks represent the adjudication level of either a deferred judgment, a probationary sentence, or a sentence at the department of corrections (Tauber & Huddleston, 1999). The phases refer to the stages of progress participants pass through on their way to program graduation. For the Denver Drug Court, the phases were measured by the number of drug tests administered as participants receive less frequent tests the further the progress in the program. An internal and unscientific study conducted by the Denver Drug Court Coordinator's office revealed that participation in the Denver Drug Court yielded lower recidivism rates than those individuals placed on regular probation (Tauber & Huddleston, 1999).

Summit Drug Court Program

A steering committee of community members with a stake hold in the creation of a drug court in Summit County was convened in late 2007. After 2 years of planning, processing, and training by team members, the Summit Drug Court began in June 2010. According to the Colorado Court's Fifth Judicial District (2010) *Drug Court Manual*, the mission statement of the drug court is

> to enhance public safety by effecting real change through judicial supervision, treatment and intensive case management of addicted offenders by maintaining an

> innovative Drug Court as an alternative to business as usual to improve the quality of life of the offender and the community as a whole. (p.5)

Following Marlowe and Meyer's (2011) recommendations, the Summit Drug Court team is comprised of professionals from various disciplines who manage the interventions and daily operations of the program. The Summit Drug Court treatment team was designed to closely resemble the National Drug Court Institute's prescribed drug court team composition by including the following: (a) a criminal court judge, (b), two representatives from the treatment provider, (c) a local attorney and community stakeholder, (d) a probation officer, (e) an attorney from the District Attorney's Office, and (f) a problem-solving court coordinator.

The Summit Drug Court utilizes both MRT and SSIC, as clients are mandated to attend both treatment groups. Also, the Summit program has adopted a cafeteria-style approach to treatment as clients are allowed to attend parenting classes, health classes, and individual counseling at their own convenience to supplement their treatment needs (K. Hoeger, personal communication, April 4, 2014). Furthermore, the cafeteria-style approach to treatment means that clients do not attend the same groups together and they do not have one consistent therapist (K. Hoeger, personal communication, April 4, 2014).

The target offender populations for the Summit Drug Court program are individuals who are chemically dependent on alcohol or drugs and deemed as high-risk, high-need clients. Usually, these are offenders with significant substance abuse problems, who may have prior treatment failures and are at high risk for engaging in criminal

conduct due to their chemical dependence. The eligibility of requirements to participate in the Summit County Drug Court program are listed below:

1. Voluntarily agrees to participate in the Fifth Judicial District Drug Court including all components.
2. Must be a resident of Summit County and able to attend all court dates and fulfill treatment requirements.
3. Ability to begin the program immediately.
4. Open felony adult probation case pending revocation or new felony case where candidate meets probation eligibility criteria and is not on parole.
5. Meets *DSM IV-TR* established diagnostic criteria for chemical dependency.
6. Behavioral health treatment issues do not exceed the capabilities of the program and client does not exhibit serious, persistent mental health issues that cannot be stabilized through mental health treatment and appropriate use of psychotropic medications. If the client exhibits serious persistent mental health issues, he/she will be referred for mental health treatment and a medication evaluation.
7. Participant's immigration status must not potentially render him/her unable to actively participate in the program.
8. Participant does not have a criminal history, treatment diagnosis, or correctional performance, which demonstrates unsuitability for program.

9. Participants who have previously participated in or completed a Problem Solving Court in the Fifth Judicial District will be heavily scrutinized and discussed with past Judicial Officer.
10. Participant does not have a current offense or previous conviction or deferred sentence for any of the following. These cases may be evaluated on an individual basis:
    a) crimes where the facts involve a sex-related criminal offense;
    b) drug manufacturing, sale, distribution where the intent is to make a profit;
    c) crimes involving serious bodily injury or death;
    d) crimes involving use, possession, or threatened use of a firearm or deadly weapon.
11. Participants must be willing to abstain from the use of all illicit substances and non-Drug Court team approved medication.

In accordance with the recommendations of Marlowe and Meyer (2011), the Summit Drug Court program is structured into distinct phases. Offenders are required to successfully complete one phase before progressing to the next phase. The Summit Drug Court phases are listed below.

Phase 1. The first phase in the Summit Drug Court program is a period of evaluation and assessment. Participants in this phase have their behavioral and mental health needs assessed by trained clinicians. The behavioral and mental health assessments are integrated with a chemical dependency evaluation to arrive at an accurate diagnosis

and to determine the level of severity. Also, if it is deemed necessary, participants may be required to submit to additional psychiatric assessments. This early assessment period usually lasts approximately two weeks.

The assessment data is then used for treatment planning. The treatment plan includes the appropriate individual, group, and/or psychiatric treatment methods. Participants in this phase are required to meet with their case manager once weekly to review the plan. The individual therapist and the case manager work conjointly to assist the participant in meeting treatment obligations and to enlist any other services, if necessary, such as family support, housing, and dental care.

Phase 2. The second phase of the program includes the majority of the substance abuse treatment as well as the mental health and medical treatment, if needed. Participants are required to attend a minimum of 4 hours of group therapy and 1 hour of individual therapy each week. Also, depending on a participant's treatment plan, approximately 1 to 3 hours of peer/self-help or psychoeducational interventions are mandated. MRT is the prescribed method for peer/self-help interventions for the Summit Drug Court program. If participants are deemed to be in need, then psychiatric and medical services will also be mandated.

Phase 3. The third phase of treatment addresses systemic issues that are germane to each individual participant. Many of these issues involve important relationships in a person's life such as family, significant others, peer-to-peer relationships, or community interactions. Any educational needs are also addressed in the third phase, as some participants enroll in school. During this phase of the program the treatment plan is

revised to reflect and support the goals in the first plan and to integrate the identified systemic issues. Substance abuse treatment is deemphasized as more therapeutic attention is given to the systemic issues.

Phase 4. The fourth and final phase of the program focuses on relapse prevention and the development of life skills. The treatment plan is again revised to integrate relapse prevention with life skills training. Individuals in relapse prevention must attend group for 1 hour per week for a minimum of 10 weeks. Participants are required to submit to a life skills needs assessment and they may be required to attend job training, career counseling, parenting classes, or other personal growth seminars. Community involvement is another important aspect of this phase, as participants learn the benefits of volunteering to help supplant their prior criminogenic lifestyle.

Strategies for Self Improvement and Change

SSIC is a cognitive behavioral program designed to facilitate positive change and improvement for those individuals with a history of criminal conduct together with alcohol and drug use problems. Wanberg and Milkman (2005) stressed the three main goals of SSIC as (a) addressing criminal thinking to prevent recidivism and criminal conduct, (b) acting as an intervention to address substance abuse, and (c) assisting clients to develop meaning and responsibility in their lives.

The basic objective of the SSIC program is to assist substance abusing criminal justice clients to make a successful reintegration or an adjustment to begin a new normative life that generates healthy fulfilling relationships and increased personal responsibility (Wanberg & Milkman, 2005). SSIC seeks to accomplish these goals and

objectives through a series of CBT exercises that facilitate learning, practicing, and applying skills that enhance self-control, produce more prosocial behaviors, and promote respect for the rights of other people (Wanberg & Milkman, 2005).

The SSIC program is comprised of three different phases with a total of 50 sessions. Individuals assigned to SSIC treatment each receive a workbook and attend sessions on a weekly basis. The program generally takes approximately 48 to 50 weeks for a client to complete the entire course (Wanberg & Milkman, 2005). A breakdown of the phases is listed below.

Phase 1. According to Wanberg and Milkman (2005), the basic assumption of SSIC is that positive change is more likely to occur if the therapist, the criminal justice client, and the treatment group of other participants form a partnership. Phase 1 serves as a basic orientation into the program and as a vehicle to build trust, rapport, and a therapeutic relationship. In this phase, participants learn about the key concepts of relapse and recidivism and their close relationship with substance abuse and criminal conduct. Clients also receive an elementary education about how drugs and alcohol affect a person's biological processes and distort thinking leading to problematic behaviors. In this phase, clients are introduced to CBT techniques and exercises as they map how thoughts, feelings, and behaviors are interconnected. Clients are then afforded the opportunity to recognize and address their maladaptive behavioral patterns (Wanberg & Milkman, 2005).

Phase 2. The second phase seeks to fortify the participant's commitment to change by strengthening skills that lead to self-improvement, change, and personal

responsibility (Wanberg & Milkman, 2005). In this phase, clients become aware of their negative thinking patterns and practice cognitive self-control skills. Relationship issues are addressed in this phase as clients begin to understand empathy and how to resolve conflicts without aggression, abuse, or violence. Clients also work on CBT exercises, which help them change their values to develop prosocial thinking and moral responsibility (Wanberg & Milkman, 2005).

Phase 3. In the third phase, clients take ownership of their change process and adapt a balanced and healthy lifestyle (Wanberg & Milkman, 2005). Clients are instructed to complete a relapse and recidivism prevention plan, which provides an opportunity for them to take ownership and accept personal responsibility of their lives. In this phase, clients address time management issues, develop skills that facilitate healthy leisure activities, and learn how to relax without engaging in criminal or substance-abusing behavior. Clients in this phase have learned how to think critically and have acquired the skill set to maintain better self-control and manage interpersonal relationships (Wanberg & Milkman, 2005).

Booth and Lehman (2009) conducted a study that measured the effectiveness of SSIC using recidivism as the key variable. This study had a sample population of 425 Department of Corrections clients who participated in SSIC treatment. *Recidivism* was defined as any return to Department of Corrections custody due to a parole violation or an arrest for a new offense. After 1 year, 38% of the offenders had been reincarcerated, and an additional 21% had committed a new offense (Booth & Lehman, 2009). At the 2-year follow-up, half of all the participants had been reincarcerated, and another 27% had

committed a new offense. However, the results were more positive for those participants who had completed treatment. Only 18% of recidivists successfully completed treatment compared to 47% of non-recidivists who completed the SSIC program (Booth & Lehman, 2009).

Moral Reconation Therapy

MRT is a therapeutic program that was developed by Gregory Little and Kenneth Robinson for the treatment of the substance abusing criminal offender population (Huddleston, 2009). MRT is a systematic, cognitive behavioral treatment strategy that purports to enhance an individual's self-image by promoting the development of a positive, productive identity, and facilitating higher stages of moral reasoning (Little & Robinson, 2006). According to Little and Robinson (2006), MRT was adapted from the published works of Ron Smothermon focusing on moral reasoning. Many of the exercises in MRT were developed from other psychological schools of thought, including Erik Erikson's theory of ego development, Carl Jung's concepts, Maslow's hierarchy of needs, and Lawrence Kohlberg's theories of moral development as well as the authors' own clinical observations (Little & Robinson, 2006).

The term *reconation* is derived from the term *conation*, which is used to describe a person's conscious process of decision making and deliberate behavior patterns (Little & Robinson, 2006). The term conation was eventually supplanted by the term *ego* in the 1930s by a more contemporary school of psychological thought. *Moral reconation* was developed by the authors to describe the underlying goal of this therapeutic intervention as to alter conscious decision making to include higher levels of moral reasoning (Little

& Robinson, 2006). At its basic core, MRT holds the view that an individual's personality contains negative values, attitudes, and beliefs that conflict with the moral attributes of the true self (Little & Robinson, 2006). MRT allows every person to work at his or her own pace in a group setting where peers hold each other accountable as they progress on a step-by-step basis through the treatment assignments (Little & Robinson, 2006). The MRT step assignments are cognitive behavioral interventions that seek to strengthen moral reasoning, thereby rectifying criminal thinking and reducing recidivism. MRT was originally implemented in 1985 at a drug treatment therapeutic community at the Shelby County Correctional Center in Memphis, Tennessee (Little et al., 2010). Since then, MRT has grown to be the most widely used and researched cognitive behavioral approach within correctional facilities (Little et al., 2010).

In a 5-year study, the original MRT treated group was expanded to 1,052 participants, and a control group of 329 participants was established. This study determined that the MRT treated offenders experienced significantly lower re-arrest rates, higher rates of "clean" records, or fewer arrests post treatment, and ultimately lower reincarceration rates (Little et al., 2010). Also after 10 years, the control group offenders experienced a 65% reincarceration rate, whereas only 46% of the MRT-treated offenders were reincarcerated (Little et al., 2010). In January of 2010, a 21-year follow-up was conducted on the 1,052 MRT-treated participants, and the 329 control participants. At the 21-year mark approximately 61% of the MRT-treated group had been reincarcerated at least once after their termination from the program. In addition, 84% of the offenders in the MRT-treated group were arrested at least once in the 21 years following treatment.

The control group experienced much poorer outcomes, as more than 90% of the offenders were re-arrested in the 21-year time span (Little et al., 2010).

According to Little et al. (2010), for every 100 offenders treated with MRT, at least 19 of them will not be re-arrested for any new offense. Treating offenders with MRT is also cost effective as the total expenditure per 100 offenders is approximately $2,500, which is far less than costs associated with reincarceration (Little et al., 2010).

The freedom ladder depicted in Table 2 represents MRT's core philosophy. Individuals address the underlying moral deficiency leading to criminal conduct and substance abuse by working the treatment steps.

Eagle County Problem Solving Court

The Eagle County Addiction Court Program was created in September 2009, given the overwhelming need for a problem-solving court model in the community. The Eagle County Drug Court program utilizes the same team concept recommended by the National Drug Court Institute. Team members in the Eagle County Drug Court program are professionals from various criminal justice and therapeutic disciplines. The drug court team and their corresponding duties are as follows:

1. *Criminal Court Judge*:
2. *Problem-Solving Court Coordinator*: Facilitates trainings, mentors and personally trains, provides support to probation officers, keeps statistics, presents best practices to the teams, and implements written rules and guidelines for the programs.

Table 2

Moral Reconation Therapy Freedom Ladder

Moral stage	Treatment steps
Disloyalty - Considered the lowest moral and behavioral stage (lying, stealing, exploitations)	1. Honesty 2. Trust
Opposition - Tend to blame societal rules or others for their problems	3. Acceptance
Uncertainty - Stage of ambivalence about need for change or limited self-efficacy to change	4. Awareness
Injury - Stage where people realize they have harmed others and feel a sense of responsibility	5. Heal relationships 6. Helping others
Nonexistence - In this stage, people lack a sense of connectedness with others and poor self-identity	7. Long-term goals/develop identity 8. Short-term goals/consistency
Danger - Those in danger have committed to long-term goals, have direction, and value relationships	9. Commitment 10. Maintain positive change
Emergency - Individuals in this stage feel urgency about completing goals and are considerate of others	11. Keeping moral commitments
Normal - In this stage, people have developed an identity, are less judgmental, and have concern for others	12. Choosing moral goals
Grace - Few individuals reach this stage, which includes high-level values, such as justice, dignity, and freedom	13. Evaluate the relationship between the inner self and personality

3. *Probation Officer*: Functions as the case manager for both the DUI and drug court participants. Weekly meetings, home visits, monitoring UAs, documenting, reporting participants' progress to the team on a weekly basis. Drafts and submits probation complaints for revocation of the sentence when appropriate.
4. *Treatment Provider*: Facilitates the intensive outpatient treatment for both court programs.
5. *District Attorney*: Attends team meetings and provides input on sanctions/incentives. The district attorney also serves as an expert on issues of due process when appropriate.
6. *Defense Attorney*: A member of the local criminal bar association attends team meetings, provides input on sanctions/incentives, and addresses issues of due process when appropriate.
7. *Law Enforcement*: Captain with the Eagle County Sheriff's Department, runs the county jail, provides input at team meetings, and helps facilitate prosocial sober events for program participants. Also, provides input and assistance with training other law enforcement on the problem-solving court model.

The Eagle County Drug Court program utilizes both the Planting Seeds curriculum, and mandatory 12-step self-help meetings attendance. Unlike the Summit County program, the Eagle County program does not have a cafeteria-style treatment model, as participants are required to attend group therapy together. This means that the DUI court participants attend the same group together and the drug court participants

attend their group therapy together. In addition, the DUI and drug court participants have the same therapist that conducts both individual and group therapy with the belief that this format promotes better continuity of treatment. The Eagle County Problem Solving Court is designed to promote unity among the participants, which coincides with social learning theory. The social learning model emphasizes eliminating negative peer associations and irrational beliefs by modeling and building upon the prosocial behaviors of the other peers in the group (Kushner et al., 2014). In the Eagle County Problem Solving Court model, participants are expected to hold each other accountable, and provide valuable peer-to-peer feedback based on the intimate knowledge of each other gained during group process.

The target offender populations for the Eagle County Court programs are individuals who are chemically dependent on alcohol or drugs and deemed high-risk, high-need clients. Typically, these are offenders with significant substance abuse problems, previous treatment failures and may be at high risk for engaging in criminal conduct due to their chemical dependence. The eligibility of requirements to participate in the program are listed below:

1. The offender must voluntarily agree to participate in the Eagle County problem-solving court program.
2. Must be a resident of Eagle County and willing and able to fulfill treatment requirements and appear in court at the mandatory times.
3. Must be able to start the program immediately.

4. Offender is currently on either Intensive Supervised or regular Adult Probation in Eagle County.
5. ISP or regular adult probation violation where revocation is pending or filed.
6. Meets *DSM IV-TR* diagnostic criteria for substance dependence.
7. Behavioral health treatment issues do not exceed the Eagle County program's capabilities and client does not exhibit serious mental health issues that cannot be stabilized through mental health treatment and appropriate use of psychotropic medications. If the client exhibits serious persistent mental health issues, an appropriate referral will be made.
8. Offender does not have a criminal history, treatment diagnosis, or correctional performance that demonstrates a history of chronic violent behavior, a history of violence, or unsuitability for the Recovery Court.
9. Participants must be willing to abstain from the use of all illicit substances.
10. Certain criminal cases may be evaluated on an individual basis. The entire Eagle County Drug Court team will evaluate each case involving the offenses listed below.
    a. Drug manufacturing, sale, distribution, or possession of a controlled substance with an intention to sell.
    b. Crimes involving serious bodily injury or death.
    c. Crimes where the facts involve a sex-related criminal offense.
    d. Crimes involving use, possession, or threatened use of a firearm or deadly weapon.

Admission into the Eagle County Problem Solving Court programs is contingent upon an evaluation process that involves a personal interview with the probation officer, and again with the program clinician. Prospective participants are also required to take the Substance Abuse Subtle Screening Inventory-3, which assists in arriving at a chemical dependency diagnosis.

The Eagle County Problem Solving Court program also operates in accordance with the National Drug Court Institute's recommendations that drug court programs should be structured into distinct phases. The offenders are required to successfully complete one phase before progressing to the next phase. The Eagle County Drug Court program is also a multi-phasic treatment program, as clients are expected to progress through each phase. The phases are described below.

Phase 1. During the first phase of treatment, each participant enters an evaluation process to assess individual needs such as living conditions, mental health status, and the severity of their chemical dependency. Participants are required to attend group therapy sessions twice each week and meet with their therapist for individual counseling once a week. In the first phase, participants begin exploring the local 12-step support groups, and are expected to obtain a sponsor. A sponsor is an individual independent of the court with multiple years of recovery, who can help the participant remain sober and committed to personal development (K. Hoeger, personal communication, April 4, 2014). The Eagle County Drug Court team views the first phase as a problem identification process, as participants begin to understand how substance abuse has led to substantial consequences (K. Hoeger, personal communication, April 4, 2014).

Phase 2. The second phase of treatment is structured much as the first, except that participants are expected to delve deeper into their individual characteristics. This phase addresses many of the characterological factors and other core issues, such as unhealthy relationships that facilitate substance-abusing behaviors (K. Hoeger, personal communication, April 4, 2014). The treatment regimen for the second phase is basically the same as the first phase with two group sessions and one individual counseling session each week. Participants are expected to be further along in their personal development as they have an understanding of the problem and begin making personal changes. For instance, participants in the second phase have worked with their sponsor for several months, been through the peer evaluation process, and have maintained a healthier lifestyle.

Phase 3. The third phase of treatment concentrates on preparing participants to live healthier more productive lives independent of the criminal justice system (K. Hoeger, personal communication, April 4, 2014). In this phase participants attend two monthly relapse prevention groups, and one individual counseling session every 2 weeks, and six basic life skills groups. Life skills are an essential element in this phase because many substance-abusing offenders will fall back into old habits unless taught healthier living functions (K. Hoeger, personal communication, April 4, 2014). All participants are required to have a full year of continuous sobriety before graduation.

Alcoholics Anonymous/Self-Help Groups

Self-help recovery programs offer huge advantages to individuals participating in drug court programming because these groups are available and free of costs (Marlowe &

Meyer, 2011). Twelve-step recovery groups such as Alcoholics Anonymous usually emphasize total abstinence as one of its main philosophical underpinnings. Even though these groups are not considered treatment in the formal sense, the evidence is clear that the most effective drug court programs utilize these self-help groups and develop close relationships with the local 12-step community (Marlowe & Meyer, 2011). As such, the National Drug Court Institute strongly recommends the use of self-help groups as an adjunct to treatment (Marlowe & Meyer, 2011). The research indicates that the longer an addicted individual remains actively engaged in peer-support groups, the greater is his/her chance at achieving and maintaining long-term sobriety (Marlowe & Meyer, 2011). The Eagle County Drug Court program has implemented many of the National Drug Court Institute's recommendations and made 12-step group participation an integral and inseparable part of their program (K. Hoeger, personal communication, March 25, 2013).

According to Baldacchino and Rassool (2006), self-help groups have a long history in human existence, and these groups have appeared in various forms. A self-help group is basically any group whose goal is to provide support, practical help, and care for individuals who all share a particular problem (Baldacchino & Rassool, 2006). Baldacchino and Rassool further stated that the underlying principles of self-care and individual responsibility supported by self-help groups have been on the upsurge in the general population.

Alcoholics Anonymous was the first widely recognized self-help group confirming that help could be obtained outside of traditional medical treatment

(Baldacchino & Rassool, 2006). Alcoholics Anonymous was established in 1935, and Narcotics Anonymous sprang from this movement 20 years later (Vederhus & Kristensen, 2006). The necessity for a self-help component in the addiction treatment field is supported by the health care community, social welfare systems, and advocated for by the World Health Organization (Baldacchino & Rassool, 2006). Addiction-related self-help groups provide a nonjudgmental, caring, and supportive approach with access to all of those who desire help (Baldacchino & Rassool, 2006).

Vederhus and Kristensen (2006) described the Alcoholics Anonymous philosophy as a series of 12 steps intended to become a practiced new way of life. These 12 steps encompass various actions, such as admitting to having a problem, seeking help for the problem, engaging in self-examination, making amends to other people, and helping other addicts to recover (Vederhus & Kristensen, 2006). Vederhus and Kristensen conducted a study to determine if participation in a self-help group such as Alcoholics Anonymous increased the likelihood of continued abstinence from mood-altering chemicals. The population for this study completed the same hospital-based program for the treatment of chemical dependency, and were all diagnosed with alcohol or drug dependency. One hundred fourteen participants agreed to attend Alcoholics Anonymous meetings post-discharge from the program and another 30 participants decided against any self-help group involvement, comprising the control group. At the 2-year follow-up, this study showed that 81% of the individuals participating in 12-step self-help group remained abstinent at the 2-year follow-up, compared to 26% of individuals who declined participation who remained abstinent. These results corroborate previous studies that

indicate that abstinence and self-help group participation are positively correlated (Vederhus & Kristensen, 2006).

Baldacchino and Rassool (2006) conducted an extensive analysis on 12-step self-help groups, such as Alcoholics Anonymous and Narcotics Anonymous. Their analysis noted some potential problems with these groups that could either prohibit participation or limit effectiveness. For example, many individuals can be resistant to the spiritual component of these programs and therefore avoid participation. Also, many of these groups' success rates are dependent on the members themselves, which can cause alienation or discontent of prospective members (Baldacchino & Rassool, 2006). However, despite their shortcomings, these groups offer benefits to many of their members that are not available from other sources (Baldacchino & Rassool, 2006). For instance, members in these groups are seeking independence and to have their individual needs met by developing mutual trust, understanding, and empowerment in working to achieve their goals through active participation in a like-minded fellowship community (Baldacchino & Rassool, 2006).

Planting Seeds

Planting Seeds is a holistic and client-centered approach to treatment that is designed to assist individuals in living healthier and happier, drug-free lives. SAMHSA (2012) defined *recovery* as a process of change leading to improvements in overall health, wellness, self-determination, and the ability to maximize full potential. Recovery is the main impetus of Planting Seeds, as clients undergo a process of change as they strive to reach their full potential as human beings. The Planting Seeds modality is a

respectful and non-confrontational program, as each individual client is allowed to realize for himself or herself that a problem exists, the exact nature of the problem, and the ramifications and consequences of the problem.

Planting Seeds is also designed to foster healthy peer-to-peer relationships both in and outside the group context. This philosophical approach to treatment borrows from social learning theory, as clients are given the opportunity to model appropriate recovery-based, drug-free behavior, thoughts, and attitudes. Planting Seeds's philosophy of a peer-driven treatment seeks to promote healthy relationships and afford each individual client the opportunity to realize the program's usefulness by providing valuable feedback and support to other group members. This usefulness occurs because clients are allowed to take a leadership role in assisting others to recover from their substance abuse. Planting Seeds is a client-centered modality in its attempt to bring meaning to a person's existence by promoting and developing insight and providing a safe haven to discuss feelings. Insight is often developed through peer-to-peer dialogue as fellow addicts have a unique understanding of chemical dependency and addictive thinking. Camaraderie and fellowship among peers facilitates a safe environment where clients are allowed to feel vulnerable and discuss sensitive areas of their lives. Meaning is nurtured through the interpersonal connectedness established in the treatment program.

Planting Seeds is a therapist-facilitated program that utilizes aspects from other therapeutic modalities such as motivational interviewing, CBT, and reality therapy. The program draws upon motivational interviewing, as clients are allowed to come to their own conclusions about their substance abuse. Contained in Planting Seeds are other

assignments that are CBT in nature, including worksheets that are designed to alleviate criminal thinking, addictive thinking, and defense mechanisms.

Planting Seeds also provides assignments referred to as *personal narratives*, where clients are instructed to write in detail how addiction has affected important areas of their lives. The assignments are then presented during group to elicit feedback from both staff and peers. The program is subdivided into four phases.

Phase 1: Problem identification. In the first phase, clients begin the exploration process aimed at identifying the nature of their problems. This phase is considered the bedrock for beginning the journey of a life based in recovery. The problem identification phase also dovetails well with the Step 1 of Alcoholics Anonymous, as participants are asked to make an admission or at least realize that substance abuse has made their living situation unmanageable. Planting Seeds affords clients the opportunity to make their own decisions and come to their own conclusions regarding whether a chemical dependency problem exists.

Phase 2: Addressing core issues (making progress). The second phase of treatment addresses many of the issues that confront addicts on a daily basis. All of the core issues are presented in a personal, easily relatable, and nonthreatening manner. The topics examined in this phase include many of the personality characteristics that are commonly associated with individuals suffering from addiction such as shame, anger, resentments, fear, perfectionism, and criminal thinking, to name a few. The peer evaluation, an important aspect of the Planting Seeds treatment model, is also contained

in the second phase of the program. The peer evaluation is a peer-to-peer assessment of an individual client's resources and blocks to recovery.

Phase 3: Building healthier and happier relationships. The third phase of treatment addresses relationship difficulties that afflict many chemically dependent individuals. Specific topics such as boundaries, family of origin, love, intensity versus intimacy, and spirituality are covered during this phase. Planting Seeds takes the approach that healthy relationships are a pivotal component to living a happier more fulfilling life in recovery.

Phase 4: Relapse prevention: "A matter of values." The fourth phase of treatment addresses the phenomenon of relapse by providing relapse prevention exercises. In this phase, clients begin to identify relapse warning signs and red flags as they begin to adopt a healthier value system. Reservations are also addressed, as many individuals in early recovery still have lingering doubts about wanting to remain sober. Clients in this phase are required to list goals they want to meet and to write out a long-term recovery plan.

Social Learning Theory

The social learning theory was developed by Albert Bandura as a means to understand learning and human behavior (Chavis, 2011). In social learning theory, Bandura (1971) postulated that modeling behavior plays a more important role in learning than does stimulus-and-response associations. In other words, human beings learn by observing other people's attitudes, behaviors, and the consequences of these behaviors (Bandura, 1971). Bandura stated that the people with whom an individual

usually associates dictate the type of behavior a person will learn through repeated observations. Social learning theory is often associated with the study of criminology as it seeks to comprehend human behavior through the prism of social interaction and human existence. Social learning theory expands upon operant conditioning and classical conditioning by examining the role cognition plays in determining human behavior and by emphasizing the vicarious learning that takes place through casual interaction with the surrounding environment (Chavis, 2011).

In social learning theory, it is argued that people learn deviant behaviors much the same way they learn non-deviant behaviors through a process of differential reinforcement (Brauer & Tittle, 2012). *Differential reinforcement* describes the process an individual engages in, as the frequency of desirable behaviors increases and deviant behavior begins to subside. Either the deviant or the non-deviant behaviors are triggered through a process of differential reinforcement (Brauer & Tittle, 2012). In addition, Brauer and Tittle (2012) emphasized that the probability that an individual will engage in criminal behavior increases and prosocial behaviors decreases if that individual associates with criminal-minded people. The term *differential association* is similar to differential reinforcement, but it refers to relationships as opposed to behavioral decisions. Essentially, individuals will adopt the values and behavior of those people with whom they associate.

Planting Seeds places a great emphasis on differential association by creating a recovery-based peer community. One of the first assignments in the treatment program is called “Be a Mentor – Be a Leader,” introducing the client to the community and how to

be of service to others. In addition, the peer evaluation also works to form a communal atmosphere as clients receive constructive insight from their fellow peers. The third phase of Planting Seeds is about building more fulfilling relationships and includes exercises on friends, fellowship, and boundaries.

LSI-R as Dependent Variable

According to the Labrecque, Smith, Lovins, and Latessa (2014), the LSI-R is a correctional assessment that identifies the risks and needs of each individual criminal offender. The LSI-R has demonstrated predictive validity and has been supported in numerous studies, utilizing large samples, and a multitude of meta-analysis. Furthermore, the LSI-R has been validated with a large array of criminal populations, and support has been garnered for samples comparing gender, ethnicities, and age (Labrecque et al., 2014). Other studies that utilized the LSI-R included examinations of current prisoners, female offenders, violent offenders, mentally ill offenders, probationers, parolees, African American offenders, and Hispanic offenders. The LSI-R remains one of the most popularly used assessment tools in today's correctional settings (Labrecque et al., 2014).

The LSI-R is predicated upon the three main principles of risk, need, and responsivity, otherwise known as the RNR model (Labrecque et al., 2014). The risk principle emphasizes that criminal behavior can be predicted with a valid assessment tool, especially when risk potential is appropriately coordinated with treatment intensity. The need principle asserts that practitioners take aim at crime producing factors or criminogenic needs, to reduce the recidivism, and the responsivity principle describes how to provide treatment to address each offender's motivation, learning style, strengths,

and abilities. For the RNR model to be effective in treating offenders, risk level, and criminogenic needs must be targeted by the appropriate intervention, which increases the importance of the LSI-R assessment process (Labrecque et al., 2014).

Labrecque et al. (2014) conducted a study to assess the predictive and dynamic validity of the LSI-R. Labrecque et al. explored the under-researched area of offender change by examining he predictive and dynamic validity of the LSI-R. The findings of this particular study add to existing findings that supporting the LSI-R as a valid predictor of recidivism risk (Labrecque et al., 2014).

According to Manchak, Skeem, and Douglas (2007), the LSI-R was originally developed to assess probationers and has been widely studied in probation and parole populations. Data collected on over 4,000 probationers and more than 18,000 current inmates indicate that the LSI-R is internally consistent at .84 to .87 at the total score level (Manchak et al., 2007). Moreover, the LSI-R's interrater reliability is within acceptable range (Manchak et al., 2007). According to Flores, Lowenkamp, Holsinger, and Latessa (2006), other validation studies conducted on the LSI-R support the instrument's ability to predict outcomes for probationers. In addition, early research on the LSI conducted by Andrews (1982) found that the LSI-R predicted supervision success (r =. 35), in-program outcome status (r = .47), and in-program recidivism (r = .38). Andrews and Robinson (1984) studied this same initial validation sample over a longer follow-up period and determined that a strong correlation exists between the LSI-R and recidivism (r = .43; as cited in Flores et al., 2006). Manchak et al. further stated that the predictive utility of the LSI-R for probationers in community supervision is well established.

Given the strong support of the LSI-R's psychometric properties, the posttest results from the LSI-R will serve as the dependent variable. The covariant variables will be the pretest LSI-R and the assessment results from the ASUS-R. This study will analyze the treatment effect that each program has on the dependent variable. The nature of this study will be discussed in more detail in Chapter 3.

Gap in Literature

According to Bouffard and Smith (2005), a burgeoning volume of research has examined the differences in the drug use habits between urban area users and those living in rural communities. However, despite the amount of research dedicated to drug use patterns, research examining the difference in treatment utilization in these opposite geographic locales is only developing. Bouffard and Smith further asserted that since the drug court model of treatment is growing, other researchers have called for more evaluations examining the effectiveness of these programs. It is important to evaluate and thoroughly comprehend the drug court model in different geographical regions; failure to do so can result in program failure, especially in rural jurisdictions (Bouffard & Smith, 2005).

This study sought to address the gap that the Eagle County Drug Court program had not been previously studied. This study will be the first time that both the Summit County program and the Eagle County program will be empirically studied using a quantitative analysis. According to the Division of Planning and Analysis of the Colorado State Court Administrator's Office (2008), a program evaluation that measures the effectiveness of the drug court program is a key component of every successful program.

In addition, few drug court programs in Colorado have had the adequate resources to complete a thorough examination their program's effectiveness (Colorado State Court Administrator's Office, 2008). Therefore, this study fulfills a basic requisite need by examining these programs in depth.

Summary of Chapter

Substance dependence and its many associated problems has placed a large burden on society. According to the National Council on Alcoholism and Drug Dependence (NCADD, 2015), the misuse of alcohol and other drugs can negatively affect a person's life, family, friends, and community. The NCADD (2015) further stated that one of the biggest areas for concern is the relationship between crime and substance abuse. As of 2015, nearly 80% of all offenders abuse drugs and alcohol, and approximately 50% of all jail and prison inmates are chemically dependent (NCADD, 2015).

Alcohol and drug abuse are also culprits in child abuse and family discord. For instance, approximately 40% of child abusers reported being intoxicated at the time of their offense (NCADD, 2015). According to National Center on Addiction and Substance Abuse (1999), children of substance-abusing parents are 4 times more likely to suffer neglect and experience 3 times the amount of physical abuse than those children with non-substance abusing parents.

This literature review clearly indicates that there is a need for treatment of the disease of addiction for those individuals who have been entangled in the criminal justice system. The NCADD (2015) stated that many individuals caught in the criminal justice

system would not be able to avoid future criminal charges without addiction treatment. Furthermore, the NCADD estimated that about one half of all state and federal inmates meet diagnostic criteria for substance dependence, but less than 20% will actually receive treatment.

Chapter 3 will describe the study's methodology and present an analysis of the LSI-R and the ASUS-R. A description of the participants and the research design will also be furnished. Chapter 4 will provide the results of the study and a review of the findings. The final chapter, Chapter 5, will contain a discussion of the findings as well as an interpretation, implications for social change, and recommendations for future progress.

Chapter 3: Research Methods

In this chapter, I provide a review of the study's design, a discussion of the participants, data analysis, and ethical concerns. A synopsis of the study's design includes a rationale for why I implemented this particular research design. I also explain the process of data collection and the use of archival data.

Purpose of the Study

I sought to compare the effectiveness of two different drug court treatment programs in lowering recidivism risk, as measured by the LSI-R. The Eagle County Drug Court program utilizes the Planting Seeds manualized program in conjunction with 12-step meeting participation, and the Summit County Drug Court program utilizes a combination of two distinct CBT manualized programs: MRT and SSIC. By determining which treatment intervention is more effective in lowering the risk of recidivism, client needs can be better addressed, in turn engendering positive social change in the local community. In addition, if client needs are more effectively addressed, the community will experience a greater likelihood less substance abuse-related criminality.

Program Evaluation

According to the Centers for Disease Control and Prevention (CDC, 1999) a program evaluation is the only way to distinguish which programs are actually effective in promoting health and in establishing preventive measures that ward off further injury or disease. According to the CDC (1999), a *program evaluation* is a methodical investigation to ascertain whether the program has worth, significance, or is effective in achieving its desired outcomes. The practice of program evaluations has progressed

during the last 3 decades to become its own discipline with new methods, applications, and approaches (CDC, 1999).

The BJA (2006) stated that programs that participate in evaluations gain essential objective information about their current level of performance, and they obtain knowledge about how to improve. In addition, program evaluations offer objective evidence that a program is effective in reaching its prescribed goals. A program evaluation allows the program to share valuable information with similar programs, obtain further funding, and to indicate how the program is benefitting the community at large (BJA, 2006).

Program evaluations require the adherence to a logical model that requires the evaluator to think systematically (BJA, 2006). I conducted this study according to the logical format of objectives, resources, process measures, outcomes, and outcome measurements. The objectives as stated by the programs include a reduction in the risk of recidivism, the resources were the therapeutic interventions, and the outcomes and outcomes measurements were the LSI-R scores.

The BJA (2006) program evaluations generally include such activities as reviewing program documents, interviewing program staff, and collecting program data. The BJA listed pre-experimental, quasi-experimental, and experimental as the three most common program evaluation methods. Quasi-experimental designs are utilized by comparing the outcomes of program participants with those of non-participants (BJA, 2006). In describing this design, the BJA used the example of recidivism by suggesting that lower recidivism rates for program participants can indicate that the prescribed

intervention facilitated the difference. For the purposes of this study, the Eagle County program represented the program participant group because it utilizes the new intervention; the Summit County represented the comparison treatment group.

According to the BJA (2006), some program evaluations are able to utilize previously existing information, alleviating much of the costly and time-consuming process of accumulating new data. Information or archival data are collected by each drug court program for a number of reasons, including outcome performance measurement, and to gain insight into program effectiveness. Examples of the type of data that may be valuable to program evaluators includes attendance records, counseling forms or progress notes, discharge summaries, pre-sentence reports, and the results from psychological testing (BJA, 2006).

Research Design and Approach

This study utilized a quantitative, quasi-experimental design using archival data to measure and compare the treatment effectiveness between the Eagle County drug court program and the Summit County drug court program in reducing LSI-R scores. A quasi-experimental design was chosen because the participants could not be randomly assigned, but rather were mandated to treatment according to the county were the offense was committed. This study was designed as a between-group quantitative approach, involving two distinct treatment groups.

This study analyzed the results of the LSI-R. The data were collected and stored at Colorado's Fifth Judicial District Probation Office, which has the responsibility to manage the participants in both programs being evaluated. The analysis was formulated

to evaluate the change in recidivism risk before and after treatment. Every probationer was administered the LSI-R as part of the orientation process as they began their probation sentence (B. Lynch, personal communication, September 8, 2014). The means of the beginning LSI-R scores were then computed to ensure the participants from both programs were essentially equivalent (see Appendix B).

Participants

The participants for this study were adults older than 21 years who had a diagnosis of substance dependence and were court ordered into treatment. The presiding judge in each county was ultimately responsible for the sentencing (for permissions, see Appendix C). The treatment population for this study all resided in rural Colorado and the demographic breakdown of the treatment population closely resembled the surrounding community. The participants were 70% European American, and 30% were Hispanic American. However, the treatment population was overwhelmingly male, with females only representing 20% of the treatment population. All of the participants were administered the LSI-R risk assessment and the ASUS-R prior to admission into the program. Each participant was reassessed with LSI-R in 6-month intervals during their treatment stay, and again before graduating from the program (B. Lynch, personal communication, September 8, 2014). The Colorado's Fifth Judicial District Probation Office Supervisor, B. Lynch (personal communication, September 8, 2014) stated that a probation officer who received specialized training utilizing this instrument always administers the LSI-R. Only participants who completed two LSI-R risk assessments were included in this study. The data collected on each participant included risk

assessment scores, substance use assessment scores based on the ASUS-R, and information related to their performance while in treatment, such as positive urine analysis tests and technical violations. All identifying data, such as name and social security number, were excluded from this study.

Measuring and comparing the changes in recidivism risk between the participants in the Eagle County Drug Court program and in the Summit County Drug Court program formed the basis for the study. The data were analyzed using an ANCOVA. The analysis of covariance combines the techniques ANOVA with regression methods, and is designed to control for the differences between treatment groups when an experimental design is not possible. The covariants in this study are the beginning LSI-R scores, and the ASUS-R scores for each participant. This study utilized an expected Cohen's *d* of .5, which signifies a medium sized effect, a power of .80, and a two-tailed alpha level of .05. The overall sample necessary for this research was 33 for each group (Wuensch, 2009). According to B. Lynch (personal communication, September 8, 2014), the Eagle County Drug Court program has had approximately 100 participants and the Summit County Drug Court program has had approximately 45 participants to date. For accuracy, this study utilized the entire population of drug court participants from each program.

The rationale for the second hypothesis was to assess if each individual program was effective in reducing the risk of recidivism. The second hypothesis was addressed by utilizing a one-way repeated measures ANOVA. According to Gravetter and Wallnau (2009), the one way repeated measures ANOVA or within groups design is used when a single group is measured multiple times with the same instrument. This is the situation in

this study, as participants in both the Eagle County and Summit County groups were administered the LSI-R on several occasions throughout their treatment process. Conducting this analysis would help determine if each respective treatment program was successful in lowering the LSI-R scores that indicate a reduction in recidivism risk.

Instrumentation

Level of Service Inventory-Revised

The LSI-R was one the assessment tools used for this study. The LSI-R is an objective, quantifiable, 54-item assessment instrument that is comprised of 10 subscales that include both static and dynamic risk factors (Andrews & Bonta, 2005). *Static risk factors* remain constant over time and include variables such as prior criminal history, which aid in assessing and predicting the level of risk for re-offending. *Dynamic risk factors* can vary over time, and contain key attributes such as family background, companions, attitudes, recreational activities, employment, and substance abuse problems (Andrews & Bonta, 2005). The LSI-R is a semi-structured interview and some items are scored using a binary, 0 or 1 scale, whereby 1 indicates the presence of a key characteristic that requires scoring (Andrews & Bonta, 2005). According to B. Lynch (personnel communication, March, 2015) a probation officer with specialized training in administering the instrument conducts the interview. Other scales such as the criminal history or the accommodation subscales are scored according to the frequency each event has occurred in the offender's life (Andrews & Bonta, 2005).

When scored accurately, the LSI-R provides three different risk measurements: (a) total risk, (b) criminogenic needs, and (c) the scale for protective factors (Andrews &

Bonta, 2005). The total risk score reflects overall risk level and is determined by adding the total number of items scored. Total risk scores range anywhere between 0 and 54, with a 54 indicating the highest possible risk. Because this study evaluates offenders on probation, the level of total risk scale associated with probationers is as follows: *low risk* (0–18), *medium risk* (19–28), and *high risk* (19–28). The total risk scale provides a standard score used to gauge the likelihood an individual on probation will re-offend (Andrews & Bonta, 2005). The total risk scale for probationers differs slightly from the total risk scale for individuals who are currently in custody. The total risk scale will be used as the dependent variable in this study.

The criminogenic needs profile is the second analysis provided by the LSI-R which measures four key offender attributes: (a) pro-criminal values, (b) pro-criminal companions, (c) cognitive social and vocational deficits, and (d) substance abuse issues (Andrews & Bonta, 2005). The criminogenic needs profile is comprised of 10 subscales standardized to identify each offender's key areas of concern. Andrews and Bonta (2005) stressed that this profile is an important early indicator of the offender's significant weaknesses and susceptibility for engaging in future criminal behaviors.

The third essential measurement provided by the LSI-R is the scale for protective factors, which assesses the offender's level of engagement in prosocial activities and attitudes. The scale for protective factors is the summation of 13 rater boxes with scores ranging from 0 to 3 (Andrews & Bonta, 2005). The overall score from this scale is inversely related to the total risk scores, which means that offenders with high protective

scores are rarely classified in the high-risk category (Andrews & Bonta, 2005). An item summary of the LSI-R and the areas of assessment are presented in Table 3.

The designers of the LSI-R recommend a period of at least 6 months prior to reassessment (Andrews & Bonta, 2005). It is after an offender is reassessed that the protective factor scale is most relevant, as the existence of positive change in the offender can be realized. Also, when test administrators or practitioners have worked with the offender for an extended period of time, the reassessment can take only a couple of minutes (Andrews & Bonta, 2005).

According to Holsinger, Lowenkamp, and Latessa (2006), assessing with the LSI-R provides a risk classification of high, medium, or low, and a clear analysis of an offender's criminogenic needs profile. *Reliability* describes the consistency of the measurement. Thus, if an instrument has high reliability, it will provide similar results over time when administered in comparable circumstances. Andrews (1982) compiled the results of the initial research conducted on the LSI-R, and the instrument's reliability was rather high (Andrews & Bonta, 2011). However, the reliability estimates tend to decrease over extended time periods, and when different raters administer the assessment (Andrews & Bonta, 2011). The overall test–retest reliability falls within a range of r = .80–.99, which is within the acceptable to good range of reliability.

Table 3

Level of Service Inventory-Revised Item Summary

Scale of measure	Area of assessment
Criminal history (Items 1–10)	Compiles the offender's level of involvement with the criminal justice system
Education/employment (Items 11–20)	Employment status, education level, peer interactions, attitude about authority
Financial (Items 21-22)	Problems, reliance on public assistance
Family/marital (Items 23–26)	Level of relationship satisfaction with parents or spouse, family criminality
Accommodation (Items 27–29)	Offender's living environment, address changes, high crime neighborhood
Leisure/recreation (Items 30–31)	Offender's use of free time, any organizations
Companions (Items 32–36)	Isolation, criminal associations, prosocial acquaintances and friends
Alcohol/drug problem (Items 37–45)	Alcohol and drug history, extent substance abuse has effected all areas of offender's life
Emotional/personal (Items 46–50)	Level of mental health interference, treatment history, psychological assessment
Attitude/orientation (Items 51–54)	Offender's attitude antisocial/prosocial

The test–retest reliability tends to fluctuate depending on certain variables, such as the length of time between administrations and whether the test is administered using the same or different raters. For instance, with the same rater in a month time frame, the test–retest coefficient is approximately $r = .92$, and with a different rater the coefficient is

r = .88 within the same time frame (Andrews & Bonta, 2011). The coefficient is approximately r = .84 with a different rater over a 6-month time interval, which is well within the acceptable range (Andrews & Bonta, 2011).

Validity describes the extent to which an instrument accurately measures the construct that it purports to assess. The predictive validity of the LSI-R has been empirically established across different correctional settings and offender populations (Holsinger et al., 2006). For instance, a study involving 2,107 federal probationers was conducted on the relationship between recidivism and the predictive value of the LSI-R, which concluded that there was a 68.9% chance that a randomly selected recidivist would score much higher on the LSI-R than a randomly selected non-recidivist. The predictive value of the LSI-R remained significantly higher than other predictive factors such as age, ethnicity, or gender, with an r value of .250 (Holsinger et al., 2006). The LSI-R has been cited by scholars in Canada, the home country of the test's developers, as a fundamental contribution in the delivery of effective treatment to offenders in either a correctional or community setting (Smith, Cullen, & Latessa, 2009).

According to Andrews and Bonta (2001), the LSI-R demonstrates very high construct validity, with r values in the .50 to .70 range. In other words, the LSI-R accurately identified those individuals who tended to violate rules at greater frequency and who were more likely to reengage in criminal behavior by virtue of their elevated test scores. The rate of false negatives associated with the LSI-R was very low, at approximately 2 to 3% (Andrews & Bonta, 2001). *False negatives* refer to those incidents when a high-risk individual is placed in a low security setting. With a 2 to 3% rate, there

are rarely any significant problems placing an individual into a lower level of care. By contrast, *false positives* occur at a much higher rate of 30%, which means that some low risk offenders will be deemed high risk. However, this over classification is still much less of a problem than using other methods of risk assessment (Andrews & Bonta, 2001). Included in Table 4 is a breakdown of the predictive risk of recidivism as measured by the LSI-R.

Table 4

Risk of Recidivism

Risk of recidivism %	LSI-R test score
≥ 70	54
69	50
58	45
53	40
50	35
43	30
40	25
30	20
25	15
20	10
9	5
0	1–4

Note. LSI-R = Level of Service Inventory-Revised.

Lowenkamp, Holsinger, Brusman-Lovins, and Latessa (2004) assessed the interrater reliability of the LSI-R. Their study involved 167 correctional practitioners who administered the test utilizing written vignettes. The researchers determined overall interrater reliability to be 91%, which is considered very high. Interrater reliability fluctuated in some areas with one section achieving only a 62% rate, but an 86% rate was achieved when it involved classifying offenders into the proper risk category. Lowenkamp et al. also determined the LSI-R interrater reliability increases the higher the level of formal training the test administrator has received.

One of the main criticisms of the LSI-R involves the assumption that it is a male-dominant assessment tool (Smith et al., 2009). However, Andrews and Bonta (2005) stated that the LSI-R is predicated on social learning theory and cognitive psychology and that the predictive elements of criminology cut across gender and cultural lines (Smith et al., 2009). A meta-analysis was conducted with 14,737 female offenders to assess the predictive validity of the LSI-R. The study revealed an average *r* value of .35, which is considered clinically and statistically significant (Smith et al., 2009). The LSI-R is considered as one of the best assessment instruments in predicting recidivism for all populations (Flores et al., 2006).

Adult Substance Use Survey-Revised

The ASUS-R is the other assessment instrument utilized by the Fifth Judicial District of Colorado for all new incoming probationers. This test is only administered at the beginning of the probationary period to establish an individual's baseline of substance abuse severity. The ASUS-R was specifically designed to differentially screen and assess

a person's involvement in substance use across 10 generally defined drug categories (Wanberg, 2005). The degree to which an individual experiences a pattern of disruption in their lives from abusing intoxicating substances is measured and quantified. The results are used to determine if a substance abuse problem exists and what areas of need are most pertinent. Essentially, the ASUS-R is a self-report survey based on the willingness of the individual examinee to self-disclose problem areas (Wanberg, 2005).

The ASUS-R is a psychometrically based, self-report survey that consists of 96 items, and 15 basic scales with three supplemental scales (Wanberg, 2005). The overall Alcohol and Other Drugs (AOD) Involvement score will serve as a pretest covariate as it measures a person's lifetime involvement in substance abuse. The ASUS-R scales are depicted in Table 5.

Internal consistency, a type of reliability, describes the consistency of test results that ensure that all of the test items assessing each of the constructs will provide consistent scores. The internal consistency reliability for the ASUS-R was established during the construction phase of this instrument (Wanberg, 2005). Throughout the construction process, each scale was tested using Cronbach's alpha. All of the ASUS-R scales fall within the optimum range of .72 to .81 or higher (Wanberg, 2005).

Wanberg (2005) noted that the ASUS-R reliability is in the acceptable range. For instance, the interrater reliability for the Involvement and the Disruption of .66 and .68, respectively, are in the range of acceptable reliability coefficients (Wanberg, 2005). Strong correlations between the ASUS-R scales and external criterion variables have also been demonstrated.

Table 5

Adult Substance Use Survey-Revised Scale Summary

Scale	Area of assessment
AOD Involvement	Measures a person's lifetime of involvement in 10 major drug categories. (Mono-drug users may display a lower score than their actual use.)
Disruption 1	Measures a person's problems and negative consequences that are directly related to substance abuse.
AOD last 6 months	Measures a person's involvement and disruption from recent AOD use.
AOD Use Benefits	Measures the psychosocial benefits derived from AOD use.
Social Non-Conforming	Measures a person's level of antisocial involvement and rebellious attitude.
Legal Non-Conforming	Measures a person's history of involvement in the adult criminal justice system.
Legal Non-Conforming in the last 6 months	Measures adult criminal justice involvement in last 6 months.
Mood Disruption	Measures a person's psychological functioning and emotional state.
Defensive	Measures the degree to which an individual is willing to divulge personal and sensitive information.
Motivation	Measures a person's willingness to seek help and to make life changes.
Strengths	Measures a person's perception of of strengths in family, work, behavioral, emotional, and self-control.

ASUS-R Rater	This is a combination of scales where the evaluator compares scores to denote any discrepancies.
Involvement 2	Allows the evaluator to compare client Involvement score to other individuals in treatment for addiction.
Disruption 2	Allows the evaluator to compare client Disruption score to other individuals in treatment for addiction.
Behavioral Control Disruption	Measures behavioral disruptions while intoxicated.
Psychophysical Disruption	Measures the degree to which clients have experienced psychophysical disruption due to their AOD use.
Social Disruption	Measures the extent to which an individual has experienced a disruption in social functioning.

Note. AOD = Alcohol and Other Drugs; ASUS-R = Adult Substance Use Survey-Revised.

Simple linear and multiple-linear relationships between the ASUS-R scales and other perspective variables such as age, gender, ethnicity, and marital status support hypotheses around these relationships (Wanberg, 2005). ASUS-R scales discriminate different samples with respect to different levels of severity in the areas of AOD, mental health, and antisocial problems.

According to Wanberg (2005), *content validity* refers to measurement purpose; each item in the ASUS-R was evaluated to ensure that they contribute logical content to the assessment. One of the main objectives of this assessment instrument is to measure

the specific drugs that each has client historically and recently ingested. The Involvement scale has been demonstrated to achieve this objective. Another goal of the ASUS-R was to obtain insight into the extent a client may be experiencing disruption from ingesting mood-altering substances. This insight is obtained through the Disruption scale. The other scales such as Social Non-Conformity, Legal Non-Conformity, Motivation, and Strengths, and the ASUS-R as a whole represent a content-valid approach to differential assessment for the most pertinent areas that need to be addressed through treatment services (Wanberg & Horn, 1991).

Horn, Wanberg, and Foster (1990) defined *construct validity* as the convergence of evidence and sound theory exhibited in the interpretation of the measurements of a scale. According to Groth-Marnat (2009), construct validity requires three main attributes: (a) an analysis of a specific trait, (b) consideration of how this trait relates to other variables, and (c) as assessment if these hypothesized relationships actually exist. Wanberg (2005) asserted that the ASUS-R meets these three attributes, as it measures specific traits with specialized scales and through the interrater scales, it measures the relationship between numerous variables. For instance, the Social Non-Conformity and Legal Non-Conformity scales are positively correlated at .36 and .30 with the LSI-R's Criminal Risk scale (Wanberg & Horn, 1991). This correlation tends to support the construct validity of the ASUS-R (Wanberg, 2005). Furthermore, extensive construct validation studies regarding perspective, criterion, concurrent, predictive qualities have been conducted on the original ASUS and the current ASUS-R scales using large samples with a total *N* of over 40,000 respondents (Wanberg, 2005). However, the test authors

acknowledge that self-report data should be integrated with other collateral information to ensure accuracy. The assessment results from the ASUS-R were used to establish a baseline for the participants in this study.

Data Analysis

The information for this study was provided by Colorado's Fifth Judicial District Probation Office Supervisor, Bryan Lynch, on a printed copy of an Excel spreadsheet. After collection, the data were transferred to the SPSS. Descriptive statistics were computed to examine frequencies for nominal variables such as program location, gender, and completion type**.**

This study utilized archival data collected by the Fifth Judicial District Probation Office in Colorado. As all raw statistical data contains errors or missing data variables, data cleaning is a key aspect of any statistical analysis, which involves removing those items that are either extreme outliers, missing, or erroneous (de Jonge & van der Loo, 2013). In many cases, data may lack the necessary title or contain the wrong data type, such as numbers stored as strings (de Jonge & van der Loo, 2013). According to Humphries (n.d.), there can be various reasons for missing variables in a data set, which can include natural attrition, respondent refusal to answer, or issues with random collection. However, since all probationers in Colorado are required to participate in the assessments used in this study, only natural attrition such as probationers absconding will represent missing variables. Humphries (n.d.) suggested various tactics for addressing missing data, such as replacing the missing variable with the sample mean. This strategy

will be implemented for this study because it provides the ability for a complete case analysis.

According to Mason et al. (n.d.), data sets with 100 cases and 10 variables are considered small, and are easier to clean. The data for this study was approximately 140 cases, which simplified the cleaning process. I was able to personally examine the data for missing variables or erroneous figures. This process was accomplished by running frequencies with the SPSS program. By utilizing the "analyze" function for descriptive statistics in SPSS, the missing data variables were revealed. Because this is not a large study, I utilized SPSS to replace missing data through a process of transformation. The missing values were calculated by using the series mean for those variables.

ANCOVA is a statistical test that is a variation of the ANOVA that adjusts for confounding by continuous variables. The ANCOVA is utilized to test the interaction and main effects of covariant variables on the dependent variable. A *covariate* is a variable that can be predictive in nature and affect the outcome of a study. Covariates are generally used as a control variable such as implementing a pretest to establish a baseline for a study. By utilizing a pretest as a covariate, it is possible to control for initial group differences.

The LSI-R is administered to each drug court participant upon his or her enrollment into the program to establish a pretest baseline. This pretest was one of the covariates to be controlled for in this study. The ASUS-R was also administered to each drug court participant as they were admitted into the program, and these variables were also controlled as covariate variables. Thus, the covariates of the beginning LSI-R scores

and the ASUS-R scores were controlled to measure the treatment effect on the LSI-R ending score, which addresses the below hypothesis.

RQ1: Is there a difference in reduction of risk for recidivism between the Eagle County and Summit County drug courts as measured by the LSI-R, and if there is a difference, does the Planting Seeds modality with 12-step meetings (Eagle County) have better outcomes than the cognitive behavioral approach of SSIC and MRT (Summit County)?

$H1_0$: The null hypothesis is that there is no significant difference between the Eagle County program and the Summit County in reducing recidivism risk.

$H1_a$: The alternative hypothesis is that there is a significant difference between the Eagle County program and the Summit County in reducing risk of recidivism.

RQ2: What is the difference between pretest and posttest LSI-R scores for the respective drug court programs?

$H2_0$: The null hypothesis is that there is no significant difference between the pretest and posttest LSI-R scores for the respective drug court programs.

$H2_a$: The alternative hypothesis is that there is a significant difference between the pretest and posttest LSI-R scores for the respective drug court programs.

Ethical Considerations

Since this study is researching only archival data from past treatment participants' LSI-R and ASUS-R scores, the chief ethical concern for this study was confidentiality. The data were collected by the Probation Department in the Fifth Judicial District of Colorado and then provided to this researcher for this study. All participants' identifying

information remained anonymous and confidential. The raw data were stored in a secure safe and shredded at the termination of this study. Chapter 4 will present the results of the study, including a review of the findings.

Chapter 4: Results

The purpose of this quantitative study was to compare the effectiveness of two different drug court programs in reducing the risk of recidivism. The Summit County drug court program utilizes a combination of CBT-based programs MRT and SSIC, whereas the Eagle County drug court program utilized the Planting Seeds treatment modality in conjunction with Alcoholics Anonymous meeting attendance. Program effectiveness was measured using two research questions, each of which examined how the different treatment modalities affected the risk of recidivism as measured by the LSI-R. The two research questions with the null and alternative hypotheses are listed below:

RQ1: Is there a difference in the reduction of risk for recidivism between the Eagle County and Summit County drug courts as measured by the LSI-R, and if there is a difference, does the Planting Seeds modality with 12-step meetings (Eagle County) have better outcomes than the cognitive behavioral approach of SSIC and MRT (Summit County)?

$H1_0$: The null hypothesis is that there is no significant difference between the Eagle County program and the Summit County program in reducing recidivism risk.

$H1_a$: The alternative hypothesis is that there is a significant difference between the Eagle County program and the Summit County in reducing risk of recidivism.

RQ2: What is the difference between pre-test and post-test LSI-R scores for the respective drug court programs?

$H2_0$: The null hypothesis is that there is no significant difference between the pretest and posttest LSI-R scores for the respective drug court programs.

$H2_a$: The alternative hypothesis is that there is a significant difference between the pretest and posttest LSI-R scores for the respective drug court programs.

The hypotheses were tested using ANCOVA, whereas follow-up and exploratory analyses utilized correlational and multiple regression analyses. In this chapter, I will summarize the results of this analysis.

Sample Demographics

The Fifth Judicial District's Probation Department in Colorado provided the archival data. The participants came from either Eagle or Summit County, which are both located in the rural area of western Colorado. The total number of participants for both programs was 150, with Eagle County having 133 and Summit County having 33 participants. The sample was composed mostly of males (n = 130), and there was not a significant difference in the gender distribution between the two courts, $\chi^2(df = 1) = 3.89$, $p = .08$. The average age of the sample was 31.86 (SD = 9.05) and there was no significant difference in the average age between the two courts, $t(88.82) = 1.83$, $p = .07$. Of the 150 individuals, 131 had data regarding their completion status of the program. The probation department did not provide race/ethnicity data to avoid any potential client identifying information, but the participants were approximately 70% European American and 30% Hispanic American (K. Hoeger, personal communication, August 25, 2016). To protect participant confidentiality, this researcher was not provided information on participants' marital status, income level, or educational attainment. The demographic and descriptive statistics are provided in the Table 6.

Table 6

Demographic and Descriptive Statistics Stratified by Court Setting

	Eagle Court	Summit Court	Total	*p*	Equality variance *p* value	Cohen's *d*
N	117	33	150			
Gender (M/F)	98/19	32/1	130/20	.08		
Completion status (successful/unsuccessful)	76/27	11/17	87/44	< .001		
Age	32.40 (9.73)	29.94 (5.74)	31.86 (9.05)	.17	.008	0.31
LSI-R – beginning	28.66 (6.67)	34.21 (4.95)	29.88 (6.72)	< .001	.08	0.95
LSI-R – ending	24.68 (8.31)	31.24 (9.59)	26.13 (8.94)	< .001	.11	0.73
Mean LSI-R change	-3.97 (5.89)	-2.97 (6.63)	-3.75 (6.05)	.40	.25	0.16
ASUS Anti-Social	11.62 (5.61)	13.72 (5.54)	12.08 (5.64)	.06	.72	0.38
ASUS Defensiveness	8.85 (3.93)	6.84 (3.82)	8.41 (3.98)	.01	.59	0.52
ASUS Disruption	27.16 (17.63)	33.63 (19.82)	28.59 (18.26)	.08	.37	0.34
ASUS Involvement	12.68 (8.86)	18.84 (10.64)	14.04 (9.59)	< .001	.06	0.63
ASUS Mood	10.83 (6.29)	14.25 (6.84)	11.59 (6.55)	.01	.29	0.52
ASUS Motivation	16.48 (5.03)	17.35 (5.08)	16.48 (5.03)	.28	.78	0.17

Note. Standard deviations in parentheses. ASUS = Adult Substance Use Survey-Revised; LSI-R = Level of Service Inventory-Revised.

In addition, for all of the continuous variables except age, the differences in variances between the Eagle and Summit courts were not statistically significant. Because age was not used as the dependent variable in any of the analyses the significant difference in its variance between the courts was unlikely to adversely affect the results as they relate to the research questions.

Completion status refers to how participants eventually ended their time in the treatment program. Those participants who fully complied with the treatment regimen and were discharged with staff approval were deemed to have had a successful completion status. On the other hand, participants who were either dismissed from the program or absconded received an unsuccessful completion status. Given that completion status was a significant factor in many of the analyses, I used a series of two-sample *t* tests to determine if any of the ASUS domains were significantly different between successful and unsuccessful completion status. All of the significant differences showed large effect sizes except Disruption and Involvement, which yielded medium effect sizes. I used the Levene's test to assess the equality of variances and to verify the assumption that the variability is equal between the two groups. The results of this analysis are shown in Table 7.

Research Question 1

RQ 1 posed the following question: Is there a difference in the reduction of risk for recidivism between the Eagle County and Summit County drug courts as measured by the LSI-R, and if there is a difference, does the Planting Seeds modality with 12-step

Table 7

Demographic and Descriptive Statistics Stratified by Completion Status

	Successful	Unsuccessful	*p*	Equality of variance *p* value	Cohen's *d*
N	87	44			
Gender (M/F)	73/14	42/2			
Age	33.93 (9.34)	29.36 (8.61)	.01	0.28	0.51
LSI-R–Beginning	27.57 (6.68)	33.14 (5.85)	< .001	0.15	0.89
LSI-R–Ending	21.53 (6.48)	33.84 (8.15)	< .001	0.10	1.67
Mean LSI-R change	-6.05 (5.60)	0.70 (5.38)	< .001	0.15	1.23
ASUS Anti-Social	11.71 (5.87)	12.00 (5.04)	.77	0.45	0.05
ASUS Defensiveness	9.19 (4.23)	7.70 (3.78)	.05	0.30	0.37
ASUS Disruption	24.37 (17.85)	32.58 (18.78)	.02	0.28	0.45
ASUS Involvement	12.47 (8.70)	17.93 (11.43)	.01	0.03	0.54
ASUS Mood	9.42 (5.70)	15.79 (6.99)	< .001	0.02	1.00
ASUS Motivation	16.66 (5.32)	16.25 (4.86)	.67	0.66	0.08

Note. Standard deviations in parentheses. ASUS = Adult Substance Use Survey-Revised; LSI-R = Level of Service Inventory-Revised.

meetings (Eagle County) have better outcomes than the cognitive behavioral approach of SSIC and MRT (Summit County)?

H_0: The null hypothesis is that there is no significant difference between the Eagle County program and the Summit County program in reducing risk of recidivism.

H_a: The alternative hypothesis is that there is a significant difference between the Eagle County program and the Summit County in reducing risk of recidivism.

The LSI-R–Ending scores did not significantly differ between the Eagle and Summit counties after adjusting for age, gender, ASUS Involvement, and LSI-R–Beginning scores, $F(1, 137) = 1.32$, $p = .25$. Additional analyses were carried out to further examine this result. LSI-R–Beginning and LSI-R–Ending scores were strongly correlated ($r = 0.74$, $p < .001$; see Figure 1), indicating that there was little change in this assessment over the course of the program.

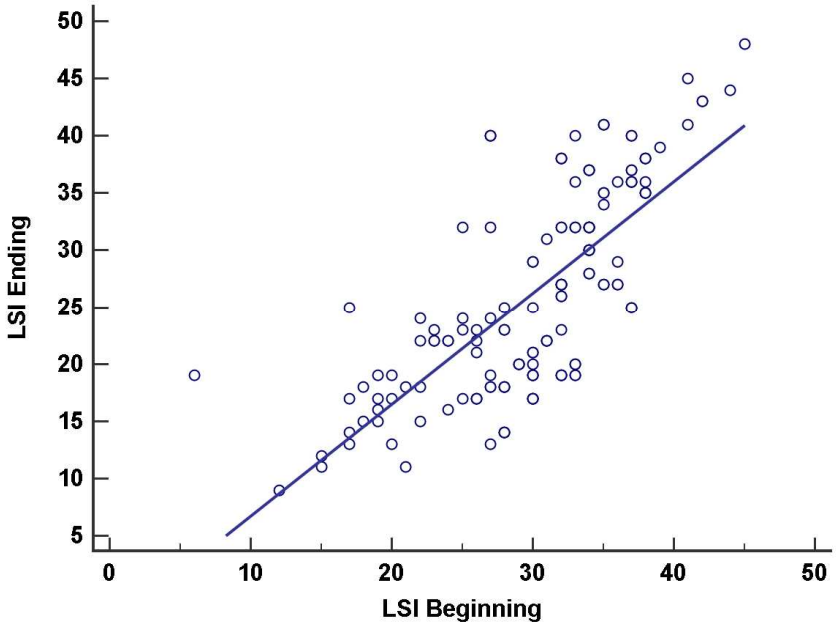

Figure 1. LSI-R scores at beginning and end.

An additional ANCOVA, which included ASUS Defensiveness and ASUS Defensiveness by court interaction, was carried out. Age, gender, ASUS Involvement, and LSI-Beginning score were included in order to account for their effects. This model yielded a significant effect for court, $F(1, 137) = 5.20$, $p = .02$, and also for ASUS Defensiveness, $F(1, 137) = 6.41$, $p = .01$). The interaction for ASUS Defensiveness and court was also significant, $F(1, 137) = 4.11$, $p = .04$) indicating that LSI-R–Ending score was dependent on both the court setting and the individual's level of defensiveness.

Research Question 2

The mean difference in LSI-R–Beginning and LSI-R–Ending scores were not significantly different between the Eagle and Summit courts when adjusting for age, gender, and ASUS Involvement, $F(1, 140) = 1.18$, $p = .28$. An additional model that included completion status and a court by completion status interaction term found that mean LSI differences were greater for those who completed the program, $F(1, 119) = 24.04$, $p < .001$; see Figure 2).

The completion by court interaction was also statistically significant, $F(1, 137) = 6.39$, $p = .01$, which showed that individuals in the Eagle court who successfully completed had significantly greater decreases in their LSI score compared to individuals in the Summit court who successfully completed the program.

Secondary Analyses

A linear mixed-effects model was used to address Research Question 2 in order to account for inter-individual differences in LSI change.

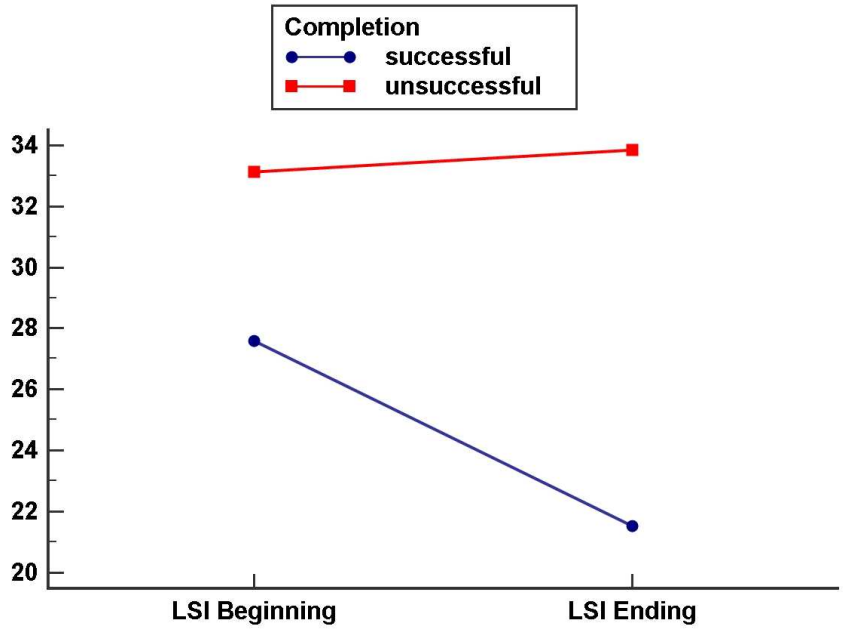

Figure 2. LSI-R scores based on completion status.

This model used age, gender, ASUS Involvement, and completion status as covariates while still using court setting as the independent variable the LSI score as the dependent variable. The intercept and slope for each individual was treated as a random effect. In this model, the only variable to show a significant effect was completion status, as individuals who successfully completed the program had significantly greater decreases in LSI scores compared to those who did not successfully complete the program ($\beta = -7.04$, $SE = 1.75$, $p < 0.001$).

Figure 2 shows that the ending LSI-R score is significantly lower for those individuals who successfully completed the treatment program. This phenomenon holds true for both the Eagle County and Summit County drug court programs. However, participants in the Eagle County program were far more likely to successfully complete and graduate from drug court.

Summary

Based on the findings of these analyses, the null hypothesis could not be rejected for the research questions, which evaluated program effectiveness in lowering the risk of recidivism as measured by the LSI-R. The lack of statistical significance for the primary research question is likely due to underlying factors and interactions hat were initially considered. Evidence for these underlying factors and interactions is provided by the additional exploratory analyses that were carried out. For the first research question, it was found that ending LSI-R scores were dependent upon both the ASUS Defensiveness score and the court program. Specifically, participants in the Eagle County program had higher Defensiveness scores, but were more likely to successfully complete the program, which lowered their overall risk to recidivate, as measured by the ending LSI-R score.

Also for the second research question, which evaluated how each individual program performed in lowering the overall recidivism risk, completion status proved to be a key factor. Individuals in the Eagle County drug program graduated at a much higher rate than those in the Summit County program, which increases the overall likelihood that they are at a lower risk to recidivate.

Chapter 5: Discussion, Conclusions, and Recommendations

This chapter provides a discussion of the study findings, which is comprised of four sections: (a) an overview, (b) an interpretation of the findings, (c) implications for social change, and (d) recommendations for further research.

Overview of the Study

This study was conducted to evaluate the effectiveness of both the Eagle County and Summit County drug court programs. This study sought to answer two research questions evaluating how each program's different treatment modalities lowered recidivism risk as measured by the LSI-R. To compare the two groups, the LSI-R was administered to each participant in a pretest posttest design. The two different drug court program treatment modalities represented the independent variables, and the dependent variable was the ending LSI-R score.

This research utilized archival data from 150 participants who entered either the Eagle County or Summit County drug court treatment programs. The Eagle County program had 133 participants and the Summit county program had 33 participants. The Summit County program utilizes a combination of two cognitive-based treatments, MRT and SSIC, to form the basis of their treatment modality. The Eagle County program implements the Planting Seeds treatment manual in conjunction with 12-step participation to form the basis of their treatment regimen.

Interpretation of the Findings

The data analysis evaluated two research questions, which assessed the effectiveness of the both the Eagle County and Summit County drug court programs.

Program effectiveness was measured by the ending LSI-R score, which represents an offender's recidivism risk. Participants were those individuals who offended in either Eagle County or Summit County and were sentenced to participate in drug court treatment. All of the participants were administered the LSI-R at the beginning of their treatment process, and again after completion of the treatment program. Participants were also administered the ASUS-R at the beginning of their treatment process to establish a baseline of the extent substance use involvement, and the level to which that substance abuse has adversely affected their lives.

Data for the first research question were analyzed using ANCOVA and with the LSI-R score and the ASUS-R Involvement scale as the covariants. This initial data analysis failed to reject the null hypothesis ($H1_0$) because significant difference was yielded between the Eagle County program and the Summit County program in reducing recidivism risk. Thus, the alternate hypothesis was not accepted, as results indicated that neither program reduced the risk of recidivism as measured by the ending LSI-R score.

However, an additional ANCOVA, which included the ASUS-R Defensiveness scale by court program, was conducted. On this scale, *defensiveness* measures the extent to which a participant is willing to divulge personal, and emotionally sensitive information. This computation yielded significant results, as it indicated that the ending LSI-R score was dependent upon both the court program and the participant's level of defensiveness.

For the second research question, an ANCOVA examined the mean difference between LSI-R beginning and LSI-R ending scores for each individual program. This

analysis adjusted for ASUS-R Involvement, age, and gender, and indicated that there was no significant difference between the beginning and ending LSI-R test scores for each individual program. As such, the null hypothesis could not be rejected. An additional ANCOVA was conducted that included completion status for each court program. This additional analysis established that LSI-R differences were greater for those participants who successfully completed the program. In other words, participants who successfully completed their respective programs are at a lower risk to recidivate. Furthermore, participants in the Eagle County program who successfully completed drug court had significantly greater decreases in their LSI-R scores compared to those participants in the Summit County program who also successfully completed the program.

A linear mixed-effects model was also used to address the second research question to help account for inter-individual differences in the LSI-R changes. Linear mixed-effects models are essentially extensions of linear regression models for data that are collected and summarized in groups such as the ones in this study. ASUS Involvement and completion status were the covariants, with the particular drug court programs as the independent variable and the ending LSI-R score as the dependent variable. This additional computation determined that successful completion of the treatment programs tended to generate significantly lower LSI-R scores, indicating a lower risk to recidivate.

Even though the statistical analysis failed to reject the null hypothesis for either research question, important information was nonetheless uncovered. In this sample, the Eagle County drug court program successfully graduated approximately 76% of its

participants, whereas the Summit County program only graduated 39% of its participants. It was also established that participants that successfully complete the Eagle County program scored lower on the ending LSI-R than their Summit County counterparts who also successfully graduated from treatment. The completion rate is even more significant because the Eagle County participants scored higher in Defensiveness with a mean of 8.85, compared to mean of 6.84 for Summit County participants. In addition, Eagle County participants scored lower in Motivation with a mean score of 16.48, whereas the participants in Summit County had a mean score of 17.35. This is an indication that the Eagle County drug court participants were initially more defensive and less motivated than their Summit County drug participants, but they still graduated at a much higher percentage. The data suggest that at some point during the treatment program, the Eagle County drug participants became more amenable and open to the treatment process.

Implications for Social Change

Substance abuse has a devastating effect on society, especially as opioid abuse is on the increase in the United States. According to NIDA (2017) overdose deaths from opioid abuse increased threefold from 6,000 in 2001 to 18,000 in 2014. In addition, alcohol abuse and illicit drug use annually cost the United States over $500 billion in expenditures related to crime, health care, and lost work productivity (NIDA, 2017). Therefore, it is important to design interventions to alleviate the stress on society and the harm individuals do to themselves when they abuse psychoactive substances.

One of the important implications for social change this study provided is that this is the first time the Eagle County and Summit County drug court programs have been

empirically examined. A program evaluation is the only method to distinguish whether treatment programs are effective in promoting public and individual health, and in creating preventive measures that decrease the likelihood of future harm (CDC, 1999). Therefore, this study is helping to facilitate positive social change by examining each of these programs' effectiveness in reducing recidivism risk. According to Marlowe and Meyer (2011), improving public health and public safety is one of the key goals in every drug court program. This study evaluated these programs effectiveness in meeting this important goal by measuring the likelihood that participants will return to substance use and reoffend. If drug court participants are less likely to recidivate, then many of the deleterious societal and individual effects of addiction can be avoided or greatly diminished.

The adverse consequences of substance abuse are well documented throughout the literature. The results of this study can help improve treatment outcomes as it documented that there is a strong correlation between treatment completion type and the risk of recidivism. Showing high rates of participant retention and successful completion of the treatment program is another essential goal of all drug court programs (Marlowe & Meyer, 2011). This study determined that participants who successfully completed treatment were at a lower risk to recidivate, which means that many of the consequences related to addiction can be alleviated by successfully graduated from an effective drug court treatment program. Therefore, it is paramount to develop treatments that promote less resistance and engender program adherence to ensure clients receive the necessary services.

In addition, this study provided an empirical examination of Planting Seeds, a new intervention specifically designed to treat the drug court population. This study revealed that the Eagle County drug court program, which utilized Planting Seeds in conjunction with 12 step meeting attendance, was more successful in participant retention than the Summit County drug court program. Not only were retention rates higher, but the research also demonstrated that individuals who completed treatment in Eagle County demonstrated a lower risk to recidivate than those participants in Summit County who also successfully graduated from treatment. This study indicated that this newer intervention has a high potential to facilitate positive social change as participants remained engaged in the treatment process longer and exhibited a lower risk to reengage in criminal activities.

Limitations of the Study

As stated in Chapter 1, this study's limitations begin with the fact that the Summit County drug court program served as the control group. This was done because, due to ethical concerns, this researcher was unable to formulate a control group of probationers who needed treatment services. Therefore, the Summit County drug court program served as the treatment as usual group, as MRT and SSIC are standard treatments used in Colorado. This study utilized archival data, but a control group could be implemented in future studies that are more closely monitored by treatment professionals to assure the safety of the untreated participants.

Another limitation of this study is the relatively small sample size. In an attempt to alleviate this limitation, this study utilized the entire participant populations for each

treatment group. In the future a similar study can be conducted in a larger populated region that would increase the sample size. The entire population of this study consisted of only European American and Hispanic Americans, and women were underrepresented. In the future, a study could be designed and implemented with a larger sample size, allowing for greater ethnic diversity. Furthermore, this study was conducted in a geographical rural area of western Colorado, and further studies could be implemented in more urban settings across the United States, which could evaluate the effectiveness of drug court treatment nationwide. In addition, by conducting a study such as this in urban areas, it would be easier to include a more ethnically diverse sample population.

Moreover, participants were neither randomly selected for this study nor randomly assigned to each treatment group. Participants for each treatment group were sentenced to the program located in the county where they committed their offense. Future studies could implement a more randomized group assignment, to help generate a more representative sample.

Conclusion

The study focused on a sample of 150 offenders that were sentenced to participate in two different drug court treatment programs in rural Colorado. This research was designed to analyze archival test data collected by the Colorado Probation Department in the Fifth Judicial District. The results of this study did not reveal that either one of the treatment programs had a significant effect in lowering the recidivism risk, as measured by the LSI-R. However, it is important to note that the findings indicated that the Eagle County drug court program had a higher successful graduation rate than the Summit

County drug court program, and that completion type significantly affected recidivism risk. This study's findings also merit further investigation to determine how and why Eagle County participants were more likely to remain engaged in the treatment process. So, in the future we should explore treatments that are more likely to facilitate successful completion as this could further engender positive social change.

A greater understanding of these results may help to increase the effectiveness of treatment and to better treatment outcomes. This research indicates that participants who remain in the treatment process until they graduate successfully are at a lower risk to reoffend. A reduction in addiction rates can propagate social change, especially when working with the underserved offender population. It is this researcher's hope that these findings will lay the groundwork for the implementation of improved treatment that will afford those afflicted with addiction and their loved ones much needed relief. Moreover, social change can be further advanced as these formerly addicted individuals begin to live their lives to their full potential.

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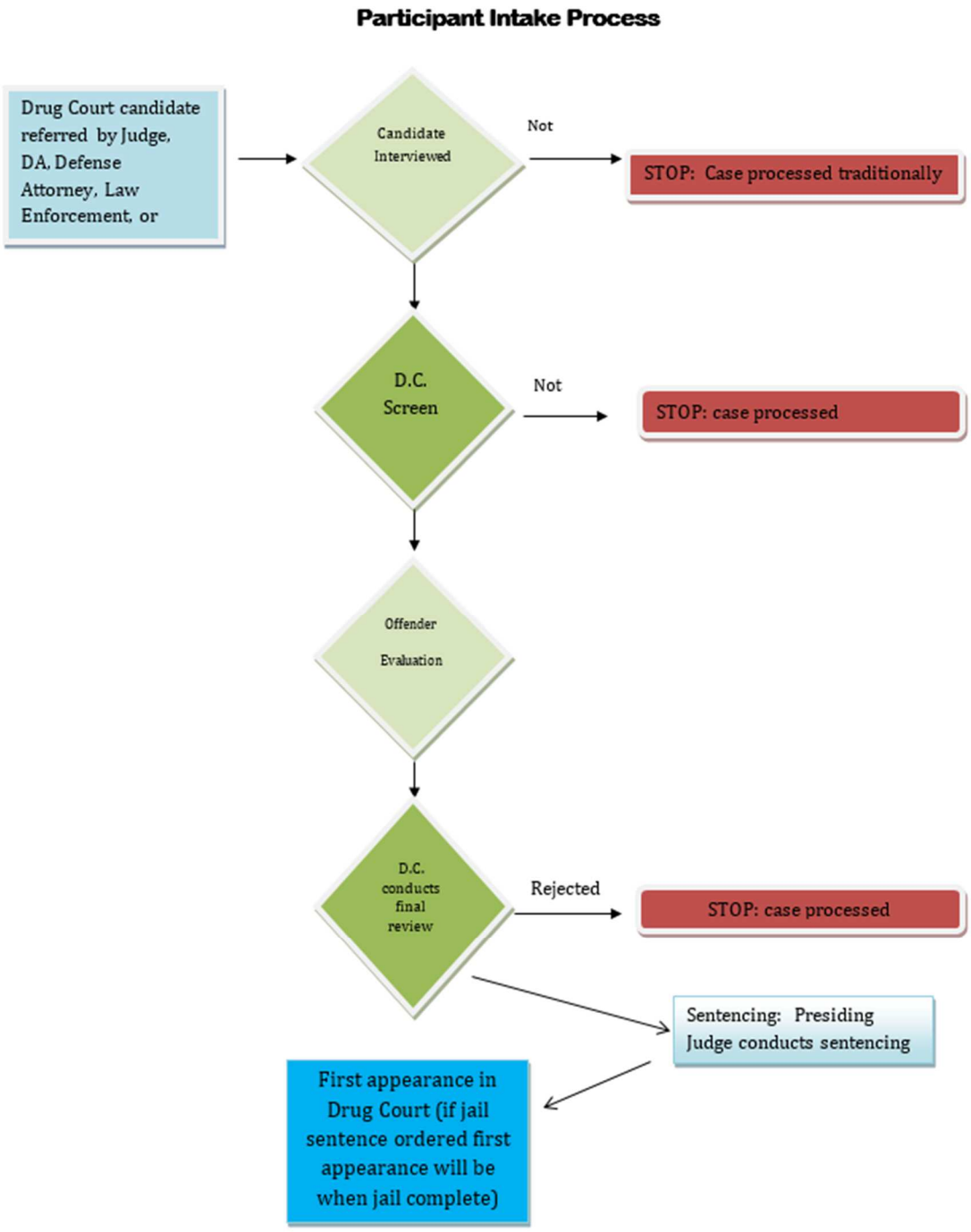
Appendix A: Drug Court Intake Process



Appendix B: Permissions for Eagle and Summit County Drug Courts

EAGLE COMBINED COURT
885 Chambers Avenue
P. O. Box 597
Eagle, Colorado 81637
Phone: 970-328-6373

May 17, 2016

RE: Arthur Kleinschmidt Dissertation Data

Dear Mr. Kleinschmidt:

Please accept this letter as proof of our intent to release the data you require to complete your dissertation pertaining to the Summit County Drug Court and Eagle County Drug Court. Based on our ongoing discussions, we are happy to assist in completing this noteworthy project. Obviously all identifying information about the clients will be redacted.

Thank you for performing this study. Both teams are looking forward to seeing the results and increasing their best practices.

Sincerely,

Karen Hoeger
5th Judicial District
Problem Solving Court Coordinator