2021

Reduced Recidivism in Drug Offenders by Treatment Involving Motivational Interviewing

Meleeka Clary
Walden University

Walden University

College of Social and Behavioral Sciences

This is to certify that the doctoral dissertation by

Meleeka Clary

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee
Dr. Melody Moore, Committee Chairperson, Psychology Faculty
Dr. Matthew Geyer, Committee Member, Psychology Faculty
Dr. Brandy Benson, University Reviewer, Psychology Faculty

Chief Academic Officer and Provost
Sue Subocz, Ph.D.

Walden University
2021

Abstract

Reduced Recidivism in Drug Offenders by Treatment Involving Motivational Interviewing

by

Meleeka Clary

MA, Curry College, 2004

BS, Curry College, 2000

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Clinical Psychology

Walden University

February 2021

Abstract

Incarcerated substance users frequently recidivate because of a lack of substance treatment; it was not known whether motivational interviewing (MI) significantly reduces recidivism among substance users. The purpose of this quantitative study was to evaluate the effectiveness of MI as a treatment method for reducing recidivism among incarcerated individuals with substance use disorders. Social cognitive and extrinsic motivation theories served as the theoretical foundation for the study. Motivation is an important factor in offender engagement with treatment and has been linked to improved treatment outcomes. The research questions asked whether the availability of MI in detention facilities was significantly related to rates of recidivism among substance use offenders with at least 1 previous conviction. The study involved convenience sampling to gather data from rehabilitation centers in 92 counties in Indiana from the Indiana Department of Correction. Data were analyzed to determine whether the availability of MI in detention facilities was significantly related to rates of recidivism. An independent samples *t*-test showed no significant difference in the recidivism rates of counties with MI compared with counties without MI. Findings suggest that alternative approaches may be necessary for correctional personnel to use with offenders and that MI may be more effective when used with other approaches. Positive social change implications include that other methods besides MI may be necessary to reduce recidivism in substance users, such as CBT and Social Cognitive Theory leading both to decreased substance use and recidivism. Findings also indicate that a more extensive staff training can improve MI training at local levels may be needed. Improving MI training can help increase the effectiveness of MI as an intervention for substance use problems.

Reduced Recidivism in Drug Offenders by Treatment Involving Motivational Interviewing

by

Meleeka Clary

MA, Curry College, 2004

BA, Curry College, 2000

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Clinical Psychology

Walden University

February 2021

Table of Contents

List of Tables

Chapter 1: Introduction to the Study

Individuals with substance use problems who have been incarcerated face increased risk of recidivism after release from prison compared with incarcerated individuals without substance use problems (Moore, Hacker, Oberleitner, & McKee, 2018). Evidence-based treatment options for individuals with substance use problems in prison are limited, which affects the rate of recidivism among these individuals (Moore et al., 2018; Simoneau et al., 2018). Motivational interviewing (MI) is a useful tool in treating individuals with substance use disorders (Miller & Rollnick, 2014). Previous researchers have found progress among incarcerated individuals who have taken part in an intensive short-term substance abuse treatment program, such as MI (Moore et al., 2018). Additionally, researchers expressed that an intensive, short-term substance abuse program, such as MI, incorporated within detention facilities can contribute to reducing a substance abuser's risk of recidivism associated with their substance use (Moore et al., 2018). As such, the purpose of this study was to evaluate the effectiveness of MI as a treatment method that may in turn reduce recidivism among incarcerated individuals with substance use disorders. This action could contribute to social change in substance users because they would be getting the treatment necessary to reduce recidivism.

Background of the Problem

Incarceration rates of substance-use offenders have increased since the 1980s in the United States; as a result, the need for effective substance abuse treatment programs has increased (Maisto, Galizio, & Connors, 2014; Palermo, 2015). Many treatment programs include cognitive-behavioral therapy, MI, contingency management, and 12-step facilitation (Maisto et al., 2014). Effective treatment uses the main elements of MI,

which are (a) learning as much as one can about substance use, (b) examining the role that substance use plays in the life of the user, (c) learning the basic steps to terminating substance use, (d) learning how to maintain sobriety, and (e) addressing major issues in the substance user's life that cause them to use.

Motivation is identified as an important factor in offender engagement and improved treatment outcomes. MI is defined as a collaborative treatment program to develop motivation in individuals to change behaviors (Miller & Rollnick, 2014). MI follows the premise that the clinician and client collaborate in a partner-like relationship. The clinician's goal is to elicit expertise and solutions from the client. The client is afforded a degree of autonomy in that the client formulates and enacts change. MI strategies treat resistance, ambivalence, and diminished capacity for objective self-assessment, which are common among clients in the earlier stages of behavior change. Arkowitz, Miller, and Rollnick (2015) posited that MI incorporates four key principles. The first key principle is expression of empathy to the individual with addiction (Arkowitz et al., 2015). The second key principle is the development of discrepancy in which the individual with addiction performs an in-depth evaluation of behaviors in light of consequences (Arkowitz et al., 2015). The third key principle is the avoidance of argumentation with the client and working with his or her resistance to change (Arkowitz et al., 2015). The fourth and final principle of Arkowitz et al.'s (2015) MI description is supporting the person with addiction to gain self-efficacy to not use substances. MI has also been used with criminal offenders in New Zealand in a modified fashion called short motivational programmer (SMP; Madson, Schumacher, Baer, & Martino, 2016). The program goal was to increase criminal offenders' motivation to change prior to their

release from prison; the researchers found the program to be partially effective (Madson et al., 2016).

Three principles for effective correctional rehabilitation exist (Cullen & Jonson, 2017). The first principle involves criminal offenders who are more likely to reoffend benefitting from intensive highly resourced interventions, whereas those who are less likely to reoffend benefit from less intensive interventions. The second principle states effective correctional programs that focus on offenders' needs are a component of an offender's risk of recidivism. Last, the correctional intervention should be delivered in a style and mode that is commensurate with the offender's ability and method of learning (Cullen & Jonson, 2017). Open-ended questions are used to force the client to explore options for change. It is important to build rapport so that clients can develop self-affirming skills. MI uses simple and complex reflections to express empathy, differentially reinforce change talk (i.e., discussion that focuses on the client's feeling regarding change), and subtly add new meaning. Summaries are used to reinforce change talk and to allow the therapist to check for understanding. MI is also used to subtly direct conversation. Emphasizing control is used to instill a sense of responsibility in the client for behavior change. Therefore, MI appears to meet the criteria for effective correctional rehabilitation.

Clinicians use evocative questioning to elicit change talk by exploring a client's thoughts and feelings about change. Preliminary evidence has suggested that MI can be an effective way to incorporate change talk with offenders (Van Wormer & Davis, 2012). MI has also shown an increase in motivation to change among the incarcerated population in general and has reduced the risk of recidivism (Lee, Tavares, Popat-Jain, &

Naab, 2015). However, a dearth of evidence exists regarding the effectiveness of MI with offenders with substance abuse disorders. The subsequent reduction in recidivism among substance abusers is evident when compared with treatment as usual. MI also appeared to be particularly effective for minority groups of substance users even though the findings with African Americans was mixed. Overall, MI has been effective with substance users across many races (Madson et al., 2016).

Problem Statement

Despite the establishment of programs to reduce recidivism, incarceration rates of substance using offenders have continued to rise since the 1980s (Nakamura & Bucklen, 2014; Palermo, 2015). Approximately 85% of prisoners released from incarceration will return to prison within 3 years because of a lack of rehabilitation (Palermo, 2015). Many researchers have studied programs to reduce recidivism among substance users, but few researchers have studied programs to reduce recidivism specifically among substance users (Moore et al., 2018; Simoneau et al., 2018). The general problem that I addressed in this study is substance users continue to recidivate because they are not being treated for their illness; instead, they are being punished for their substance use. The specific problem that I addressed in this study is that it is not known if the availability of programs using MI has a significant effect on reducing recidivism among substance users.

Purpose Statement

The purpose of this study was to explore whether MI has a significant effect on reducing recidivism among incarcerated substance users. Reducing recidivism among incarcerated substance users may reduce the number of offenders who return to prison

within 3 years of release. Furthermore, exploring the effectiveness of MI in reducing recidivism among incarcerated substance users may offer correctional personnel an alternate option for treating substance abusers to rehabilitate them while they are incarcerated. In this quantitative study, I examined the effectiveness of incorporating MI as a treatment modality to reduce recidivism among incarcerated substance users. The independent variable in this study was the availability of MI in detention facilities (measured at the county level). The dependent variable in the study was the recidivism rate (measured at the county level).

Research Questions and Hypotheses

The following research question guided this study:

RQ1. Is the availability of MI in detention facilities significantly related to rates of recidivism?

$H_0$1. There is no significant relationship between the availability of MI in detention facilities and rates of recidivism.

H_a1. There is a significant relationship between the availability of MI in detention facilities and rates of recidivism.

Theoretical Framework

The framework for this study is based upon extrinsic motivation, which is a derivative of Bandura's (1969) social cognitive theory. Extrinsic motivation refers to motivation that comes from outside influences that causes a person to desire to grow and improve as an individual (Bandura, 1969). Extrinsic motivation was used to understand how offenders who are substance abusers may be motivated to reduce their risk of recidivism through MI. Because the core of MI aligns with the principles of extrinsic

motivation, it allowed me to evaluate the influence and effectiveness of MI on the study sample. The outside influence, or extrinsic motivator, in this study was MI. Evaluating the effectiveness of MI as an extrinsic motivator enabled me to evaluate the likeliness of recidivism in the study sample.

Nature of the Study

I incorporated a quantitative methodology in this study. A quantitative method is appropriate when the variables of a study are measured on a numeric scale, or when the differences between the observed values are meaningful and quantifiable (Tabachnick & Fidell, 2012). I used quantitative methods to identify and explain the relationship between MI and recidivism among substance users. The independent variable in this study was the availability of MI in detention facilities (measured at the county level). The dependent variable in the study was the recidivism rate (measured at the county level). Inferential analyses were conducted on county level data to determine the effect of MI on rates of recidivism for programs which provided this service. I conducted an independent samples *t*-test to assess the relationship between MI availability and recidivism rate.

Definitions of Key Terms

Extrinsic motivation. A type of motivation that is derived from outside influences that motivate an individual towards achieving their goal (Putwain & Remedios, 2014).

Motivational interviewing (*MI*). A form of client-centered interviewing where dialogue is established to elicit the reasons, desires, and willingness to achieve one's goal. It is also intended to assist the client in realizing a clear path and motivation to obtain their goal (Moyers, 2014).

Recidivism. Repeated or habitual criminal behavior that may result in an offender

returning to a detention facility shortly after their release for a previous crime (Palermo, 2015). For this study, I considered return to prison for any reason as recidivism.

Substance abuse offenders. Individuals who commit crimes to support their substance abuse (Saxena, Grella, & Messina, 2016).

Substance abuse. The excessive use of a substance to the point of dependency (National Institute of Health, 2018). For this study, any substance, including prescription opiates was included.

Assumptions, Limitations, and Delimitations

Assumptions

One aspect of MI treatment is the ability to explore why the convicted substance abuser keeps using. MI treatment is used to understand what may diminish the risk of the offender returning to a detention facility. The most important aspect of MI is understanding the convicted person's motivator regarding what can trigger them to use and/or what motivates them to stay clean. If there were a program, such as MI, to help the individual understand why they continue to use, they may be able to incorporate new strategies as opposed to committing additional crimes related to their substance use. Therefore, I assumed that MI could help reduce recidivism by helping the substance abuser understand the motivations of their substance abuse. Another assumption of the study was that the sample of treatment programs and individual subjects was representative of the population incarcerated substance abusers. This assumption was necessary to generalize the findings of the study. A final assumption of this study was that the data collected on recidivism rates were accurate, because this was necessary to ensure the validity of the findings.

Limitations

Limitations of a study are those things over which the researcher has no control. However, there were evident limitations that were potential weaknesses of this study. One of the limitations inherent to a quantitative method is that the researcher cannot examine the depth and underlying details of participants' subjective experiences (Mitchell & Jolley, 2001). In this study, however, the objective measurement of quantifiable variables was preferred over rich, detailed qualitative data. Another limitation was that the correlational nature of the study did not allow the researcher to draw causal conclusions from the results. Although it was possible that MI caused reduced recidivism in substance use offenders, it was also possible that substance use offenders who were less likely to recidivate may have been more likely to choose to attend MI. The researcher's biases and perceptual misrepresentations are potential limitations in qualitative studies, but these biases did not influence this study, as historical (preexisting) data were used.

Delimitations

The importance of the study was to explore whether MI has a significant effect on reducing recidivism among incarcerated substance users. The research is centered on MI and how this program can contribute to helping substance users in reducing recidivism. By doing so, a MI program may be able to assist the substance abuser with understanding what motivates them to continue to use. Because I was primarily concerned with the relationship between MI and recidivism, the scope of the study was limited to MI availability and attendance. Additionally, the outcome of interest was limited to recidivism, because the primary concern in this study was to examine if MI could help

reduce repeat offenses among substance use offenders. To examine recidivism among substance use offenders specifically, I limited the population of interest to substance use offenders with at least one prior conviction. The results of this study may be generalizable to convicted substance use offenders in detention facilities that either have or do not have a MI program available.

Significance of the Study

Implementing MI may contribute toward positive social change as it may assist in the rehabilitation of substance use offenders, thus reducing their recidivism. Substance abuse is consistently on the rise and correctional facilities are overpopulated with minor substance user offenders who never receive the appropriate treatment for their illness; therefore, they continue to offend (Maisto et al., 2014). MI focuses on the cause of the substance abuse and attempts to treat the source, rather than the outcome. Implementing MI may cause a decrease in recidivism, thus reducing the number of offenders committing substance-use related offenses (Maisto et al., 2014; Nakamura & Bucklen, 2014).

Existing studies have not focused specifically on MI among substance use offenders. Thus, the findings of this study may offer additional strategies for correctional personnel to utilize with offenders. By adopting MI, future endeavors in treating individuals with substance use disorders can benefit from the findings of the study because correctional personnel will have an additional strategy to combat substance abuse and recidivism.

Summary

Incarcerated individuals with substance use problems have increased likelihood of

recidivism as compared to incarcerated individuals without substance use problems (Moore et al., 2018). Evidence-based treatment options for individuals with substance use problems in prison are limited, which is affecting the rate of recidivism among these individuals (Moore et al., 2018; Simoneau et al., 2018). MI is one such option and was explored in depth in this study. In this dissertation, important findings are presented regarding the use of MI that may help decrease recidivism among substance users who offend to support their substance addiction. MI is a program that can help individuals identify why they abuse substances. It may offer insight in how to assist individuals with their substance abuse. In this study, I provide a connection among correctional program research as well as research regarding changing an individual's behavior, which can contribute toward reducing recidivism (Healy, 2014).

In Chapter 1, I presented an introduction to the study including the problem and purpose statements and research questions and is followed by Chapter 2. Chapter 2 consists of a comprehensive review of the current literature regarding MI and recidivism. Chapter 2 also includes an in-depth assessment of Bandura's (1969) extrinsic motivation as it relates to my study.

Chapter 2: Review of the Literature

Introduction

The purpose of this study was to explore whether MI has a significant effect on reducing recidivism among drug users. Understanding the effect of MI on recidivism may lead to reduction of the number of offenders who return to prison within 3 years of release. Further, exploring the effectiveness of MI in reducing recidivism among drug users may offer correctional personnel an alternate option for treating drug offenders to rehabilitate them while they are incarcerated.

In Chapter 2, I present an exhaustive review of the literature regarding MI. The chapter includes a review of extrinsic motivation, which serves as the theoretical foundation for the current study. In addition, this chapter includes discussion of the following: MI, recidivism, MI and addiction, MI and recidivism, drug offenders and recidivism, and short-term drug treatment programs.

Literature Search Strategy

The search for peer-reviewed articles published between 2014 and 2018 began with online databases. These databases included Academic OneFile, Academic Search Complete, ERIC, Gale, InfoTrac, JSTOR, Sage Journals, PsycNet, and First Search. I used the following search terms to locate articles specific to this study: *recidivism*, *drug abuse*, *drug treatment*, *comorbidity among female detainees in drug treatment*, *substance abuse*, *criminal thinking*, *psychiatric diagnoses*, *multiyear criminal recidivism in a Canadian provincial offender population*, *predictive validity of the Personality Assessment Inventory (PAI)*, *completion of an in-jail addiction treatment program*,

erasing the engram, *motivational interviewing (MI)*, and *web-based motivational interviewing.*

Theoretical Foundation

The framework for this study was extrinsic motivation, which is derived from Bandura's (1969) social cognitive theory. Extrinsic motivation refers to motivation that comes from outside influences that cause a person to desire to grow and improve as an individual (Bandura, 1969). In this study, extrinsic motivation was used to understand how offenders who are drug addicts may be motivated to reduce their risk of recidivism through MI. Because the core of MI aligns with the principles of extrinsic motivation, it allowed me to evaluate the influence and effectiveness of MI on the study sample. The outside influence, or extrinsic motivator, in this study was the subject's participation in MI. Evaluating the effectiveness of MI as an extrinsic motivator enabled me to evaluate the likeliness of recidivism in the study sample.

Social Cognitive Theory

Social cognitive theory is concentrated on understanding peoples' behaviors. Social cognitive theory indicates that peoples' behaviors are influenced by their observations of others (Bandura, 1969). Observations of others can also affect peoples' cognition and thought processes. An important factor of social cognitive theory is that it provides a framework for new and current behavioral research. In this study, the focus was on MI as an influencing factor of recidivism, and, thus, having a framework for understanding behavior was beneficial.

Extrinsic Motivation

Extrinsic motivation is a reward-driven behavior that can increase productivity (Hennessey, Moran, Altringer, & Amabile, 2015). Operant conditions are a form of extrinsic motivation that can be used to modify individuals' behavior by using rewards or punishments to increase or decrease certain behaviors. Thus, extrinsic motivation was a foundation of this research because it helped me understand the effect of motivating factors on likelihood of recidivism, such as MI.

Motivational Interviewing

MI is a form of client-centered interviewing where dialogue is established to elicit the reasons, desires, and willingness to achieve one's goal. It is also intended to assist the client in realizing a clear path and motivation to obtain their goal (Moyers, 2014). MI was developed in drug treatment programs to assist with reducing recidivism rates concerning drug abuse.

Motivational Interviewing and Addiction

MI is a goal-oriented style of communication with collaborations of material (Miller & Rollnick, 2014) with well-documented efficacy in addiction treatment (Lee et al., 2015). The spirit of MI is geared to promote a therapeutic climate to elicit and evoke the patient's own thoughts, feelings, and opinions about change. It is commonly defined as the counselor's collaborative, accepting, and empathic attitude toward the patient's feelings (Lee et al., 2015). Additionally, the psychotherapist uses specific behaviors, patterns, or therapeutic tactics such as open-ended questions and active listening prescribed by MI (Oh & Lee, 2016) to elicit the patient's constructive self-motivational statements about anticipated behavior change (Lee et al., 2015). The motivational

interviewing treatment integrity (MITI) is a coding arrangement that assesses therapist MI spirit and MI behavior counts (Lee et al., 2015). Raters are trained to review transcripts and give evaluations for MI spirit and empathy (Lee et al., 2015).

Second, raters give behavior tallies for each MI-specific therapist performance: giving information, MI adherent and nonadherent performances, questions, reflections, or therapist declarations about the patient's utterances (Lee et al., 2015). Simple images repeat what the applicant has said, and multifaceted reflections add an understanding of the patient's unspecified meaning (Lee et al., 2015). For example, there are respondents who say "I'd like to quit drinking someday, I am confident that it affects my health and well-being," where a simple reflection would be: "I want to quit drinking someday, because I am confident it affects my health and well-being" (Lee et al., 2015). A complex reflection would be: "When you're willing and ready, you will quit drinking because you're concerned about your health and well-being" (Lee et al., 2015).

MI is a useful strategy in working with individuals who are uncertain about changing their addictive behavior (Barrera, Smith, & Norton, 2016). Probation service clients are seldom self-motivated; however, voluntary participants who are seeking to enter a therapeutic counseling association to affect a positive change in their life and its circumstances are self-motivated (Barrera et al., 2016). The typical profile of an offender is as an involuntary client, resistant to change, subject to relapse, and obliged to attend with a probation officer by a court (Barrera et al., 2016). The alternative is often serving a prison sentence (Barrera et al., 2016).

Motivational Interviewing and Recidivism

The tasks of a probation officer are complicated (Barrera et al., 2016). The order of the court must be fulfilled and balanced with the desire to motivate the client in the direction of positive change while also managing probable risks to the community (Barrera et al., 2016). The challenge of the dual role of the care versus control dilemma for probation officers can be effectively handled by MI approaches because clients do not need traditional motivation; rather, MI offers methods to bring about motivation in those without it (Barrera et al., 2016). The same viewpoint may not be shared by the client, the probation officer, and the court (Barrera et al., 2016).

In using MI, probation staff can detect how to impose sanctions and build helpful relationships (Barrera et al., 2016). In addition, with training, agents can build the skills and services to supervise for compliance and increase the offender's readiness for change (Barrera et al., 2016). MI is a suitable and worthwhile intervention tool for this task. Employing the Wheel of Change—a six-stage model of change developed by Prochaska, DiClemente, and Norcross (1992)—as a border of reference can help to move people frontward in addressing their addiction (Barrera et al., 2016). Prochaska et al. (1992) conducted research to determine how people change regarding applications of addictive behaviors. For example, once individuals decide they need to change their behavior, preparation is in place that is combined with intention and behavioral criteria (Prochaska et al., 1992). Therefore, individuals' actions occur in small periods of time. Thus, larger scale behavioral changes are often unsuccessful if they are not broken down into smaller stages that interventions like the Wheel of Change and MI can help with (Barrera et al., 2016; Prochaska et al., 1992).

In further research on cessation of addictive behaviors, Marlatt, Curry, and Gordon (1988) found that when individuals decide they want to quit smoking, they hold to that decision. Further, the motivating factors to change behavior affect individuals' likelihood to accomplish the change (Marlatt et al., 1988). Marlatt et al.'s findings demonstrated that motivation is an important factor in changing behavior, and thus interventions such as MI can be useful in aiding individuals with addiction and substance use problems.

This alone may be the starting point on which to base intervention in probation work with offenders and repeat offenders (Barrera et al., 2016). The primary task of the probation officer is to provoke this concern and build on it so it will help to increase motivation to change in the offender (Barrera et al., 2016). According to Miller and Rollnick (2014), "Motivational interviewing [is] a collaborative counseling style for strengthening a person's own motivation and commitment to change" (p. 234). Clearly, some probation service clients may have uncertainty about whether their addiction is something that they wish to, or feel ready to, address and disclose (Barrera et al., 2016). MI provides a way to help people reach their own decision to change their lives and give a personal commitment to that change (Barrera et al., 2016).

MI is a treasured, suitable, and genuine technique in probation work with offenders. It is surely not a cure-all, but it is a complete approach that has real value in guiding the way in which we think about and attempt to work with offenders and their addictions (Barrera et al., 2016). In combination with the Cycle of Change or Wheel of Change, MI can engage clients with drug abuse problems toward positive changes in their lives (Barrera et al., 2016). The standards and principles of MI are reinforced by the

commitments to in-service training and work environment of the probation service (Barrera et al., 2016).

The potential for change, for all clients, is the essential building block for probation work with offenders and repeat offenders (Barrera et al., 2016). MI provides significant skills and information in its technique. It is an effective, valuable intervention approach in the probation service, and unquestionably an appropriate model for engaging clients with drug and alcohol problems (Barrera et al., 2016).

MI is a pragmatic counseling tactic in which a therapist uses a collective, nonconfrontational, and nonjudgmental strategy when trying to resolve a client's uncertainty to changing their behavior (Osilla, Watkins, D'Amico, McCullough, & Ober, 2018). During MI sessions, clients tend to change their perception by changing their talking statements, such as "maybe I should stop abusing marijuana," and sustain talk (ST), or those statements in opposition to change, such as "I don't think I should stop using marijuana; it is really not hurting me at all" (Osilla et al., 2018). This type of thinking may cause client confusion regarding which direction to take, and these comments express the client's opposite sides of uncertainty (Osilla et al., 2018). Therapists are stimulated to produce and help clients' change talk (CT) and decrease examples of sustain talk within the tactical use of open-ended questions, reflections, affirmations, and summaries (Osilla et al., 2018).

Some clients expressed CT regarding the target behavior, which showed their readiness to want change, whereas clients who showed ST were typically more undecided about change (Osilla et al., 2018). In fact, CT is an important component of MI interventions (Osilla et al., 2018). Oscilla et al. sought to contribute to understanding

adolescent population progression by observing whether session gratification was connected with CT/ST and whether subtypes of CT/ST were associated with alcohol use disorder (AUD; Osilla et al., 2018). Oscilla et al. found that CT comments occurred twice as frequently as ST observations, which suggested that Free Talk, a manualized MI intervention, was successful in producing CT among non-treatment-tracking at-risk youth. Generally, the adolescents had more CT and ST comments during sessions involving personalized normative responses (Osilla et al., 2018).

The adolescents had few CT and ST comments on AUD, which is not uncommon because the former sessions can stimulate more conversations given their levels of comfortability (Osilla et al., 2018). For instance, open-ended questions were used to elicit a normative reaction concerning some type of feedback, such as conversations regarding personal goals (Osilla et al., 2018). The final session mainly was based on education and involved open-ended questions to simplify the discussions concerning the long-term significances of AUD (Osilla et al., 2018).

Drug Treatment Programs

The first drug treatment program for inmates took place in Dade County, Florida, in 1989 (Berger, LeBel, & Fendrich, 2012). Drug treatment programs were developed in ways that would help reduce recidivism of drug abuse. Now, there are around 2,500 similar courts across the United States (Berger et al., 2012). A drug treatment program normally refers individuals to treatment as an alternative to jail or prison sentence (Berger et al., 2012). This includes certain crimes that could have some involvement directly or indirectly with a person's addiction (Berger et al., 2012). Around 1997, drug treatment programs began multiplying around the country. Recently, Mitchell, Wilson,

and Layton MacKenzie (2018) determined that drug treatment programs have a positive active role in reducing recidivism, especially with adults; drug treatment program graduation rates tend to be approximately 50%.

In addition, several current studies showed that drug treatment programs have developed an equal array of accepted models for treating and distracting drug-involved offenders (Berger et al., 2012). The main concern held by every state is that correction costs are high and drug treatment programs can assist to cast off individuals from the prison population (Berger et al., 2012). Drug treatment programs are less expensive than treating someone who has a drug-related addiction and who commits an offense to support their habit (Berger et al., 2012). In other words, it is less costly to carry a criminal offender through the court process than it is to send them straight to prison (Berger et al., 2012). The offender would need treatment anyway, so it would be beneficial if they were able to receive treatment before being sent to prison (Berger et al., 2012).

Drug treatment programs help as an alternative to prison (Berger et al., 2012). Individuals who have had problems with committing serious offenses that lead to prison time can be engaged in these programs (Berger et al., 2012). The programs are developed in such a way that they are supposed to offer criminals who have any drug-related addictions the treatment they need (Berger et al., 2012). Most of all, a treatment should be geared to help change an individual's undesirable behavior (Berger et al., 2012). Drug treatment can be very costly and individuals who do not have the necessary funds to support the cost have limited access (Berger et al., 2012). Drug treatment programs can help individuals engage the judicial system less like a defendant for a crime and more like a client in treatment (Berger et al., 2012).

The number of individuals released from prisons and jails is increasing because of decreasing local budgets and increasing corrections operations costs (Newton et al., 2018). Correctional facilities must support successful offender reentry and consider public safety (Newton et al., 2018). To do this, some jurisdictions are incorporating evidence-based practices (EBP), substance abuse treatment programs, cognitive behavioral training (CBT), vocational education and training programs, and treatment-oriented intensive supervision programs (Newton et al., 2018). These programs may contribute to offenders' successful reintegration into their communities all over the United States after being incarcerated (Newton et al., 2018).

MI is recognized as an EBP for substance abuse treatment. A primary concern of correctional officers regarding EBP is to increase the intrinsic motivation of offenders (Newton et al., 2018). This can also help offenders make necessary behavioral changes to try to stop committing crimes to support their drug habits (Newton et al., 2018). At the beginning of the new millennium, the corrections field welcomed MI (Newton et al., 2018). It is used as a treatment that includes different strategies, including statements and questions, to help offenders find their own voices to make changes in themselves (Newton et al., 2018). MI, if incorporated, can provide the necessary treatment to those who struggle with drug-related illnesses.

Substance Abuse and Age

The Hospital Elder Life Program (HELP) was created to assist older substance abusers by implementing evidence-based substance abuse treatment. The approach targets the main barriers that older adults face when they seek treatment (Cooper, 2012). HELP uses MI and CBT as a helping tool to treat older adults (Cooper, 2012). Many

studies have supported the efficacy of both MI (Reid, Eccleston, & Pillemer, 2015) and CBT in this population. HELP mainly focuses on implementing ways to intervene with this population by tailoring it to fit the unique needs of the geriatric substance-misusing population (Cooper, 2012). The benefits are that HELP modifies clinical intervention on site by ensuring clients access to treatment (Cooper, 2012). Also, the clinicians are known to be trained in several areas to help individuals change their substance abuse behavior (Cooper, 2012). In addition, they maintain good relationships with community service providers who address frequent mental comorbidities, and they provide a strong referral service regarding physical health and other needed services (Cooper, 2012).

MI also outlines a client-centered directive style of counseling that is designed to resolve ambivalence and help a client towards a behavior change (Cooper, 2012). Many substance abusers possess ambivalent feelings and internal conflicts about the pros and cons of changing their behavior (Cooper, 2012). Clients should learn to accept ideas, to resolve conflicts for themselves, and make any decisions about behavioral changes (Cooper, 2012). Reid et al. (2015) found that MI is an effective mechanism to achieve a range of health behavior changes in a relatively short time. In the HELP program, social workers use MI as a feedback tool to enable clients to identify substance abuse in relation to specific symptoms (Cooper, 2012).

One important MI factor that social workers have modified is aging and the specific consequences concerning the use of alcohol and other drugs (Cooper, 2012). Many older adults do not like change, nor do they recognize the effects of substance use (Cooper, 2012). However, change education is needed in this population to help ensure that older persons are apprised of the difficulties they would face regarding substance use

recovery (Cooper, 2012). Additionally, older adults may have physical health problems stemming from drug and alcohol use over time (Cooper, 2012). HELP workers perform background research sessions one and two on the link between drug use and health problems in older adults who may be struggling with understanding their illness during the interview (Cooper, 2012).

Substance Abuse and Gender

MI is also effective for women who have been incarcerated for substance abuse and trauma history (Cimino, Mendoza, Thieleman, Shively, & Kunz, 2015). After being incarcerated, many women are released back into communities without support needed to manage their intrapersonal challenges, substance abuse, and trauma history (Cimino et al., 2015). Often, women in the criminal justice or correctional system are vulnerable because of their risky health behaviors (Cimino et al., 2015).

Individuals with risky health behaviors can be vulnerable because alcohol and drug abuse is predictive of recidivism for men and women (Cimino et al., 2015). In addition, research on recidivism illustrates the importance between alcohol and drug use, and trauma (Cimino et al., 2015). Researchers have found that people who recidivated did so within an average of 589 days, of which 40% recidivated during that first year, 47% in 2–3 years, and 14% in 3 or more years; 14% were reconvicted on drug-related charges (Cimino et al., 2015). Researchers have also found that individuals with drug dependency, a greater criminal history, and less education recidivate quicker (Cimino et al., 2015). For example, women who had a history of criminal activity were more likely to recidivate than those who had a drug abuse or dependency issue (Cimino et al., 2015). Additionally, drug use and recidivism are related to education levels (Cimino et al.,

2015). These findings underscore the difference between MI and drug treatment courts. The difference between MI and drug treatment courts is that MI focuses on what motivates people to stop using drugs, and the main concerns of drug treatment courts are whether participants will complete the program, thus reducing recidivism (Dickerson & Stacer, 2015).

Substance Abuse and Ethnicity

Several factors relate to substance abuse, ethnicity, and reducing recidivism. These factors include the large percentage of minorities in the U.S. population (approximately one third of the population; Substance Abuse and Mental Health Services Administration [SAMHSA], 2018), lack of treatment access for substance abuse problems (SAMHSA, 2016), and spirituality (Ranes, Johnson, Nelson, & Slaymaker, 2017). People of color often lack the economic resources to get treatment, if needed. People of color have a higher rate of mental and substance use disorders than Whites in the United States, which may be influenced by the level of substance abuse treatment access that different ethnicities have (SAMHSA, 2018). Also, Ranes et al. (2017) indicated that spirituality is a factor in substance abuse treatment that affects people of color more than White people. People of color often receive the poorest access to care and economic risk factors as compared to Whites in the United States (SAMHSA, 2016). Although Ranes et al. (2017) reviewed ethnic differences concerning pervasiveness of substance abuse, treatment utilization among people of color with substance abuse disorders has received limited research attention. However, substance abuse treatment has been shown to reduce recidivism.

Substance Abuse and Level of Education

Level of education affects substance abuse in different ways. Individuals with low levels of education may have missed educational discussions about the long-term effects of substance abuse, which could influence these individuals' substance use. The risk factors associated with substance abuse are not discussed in depth in high school, so individuals who drop out of high school or do not pursue a higher education degree may not have full understanding of the effects of substance abuse as compared to individuals who do receive higher levels of education. Increased education regarding the health risks associated with substance abuse can be beneficial in reducing substance abuse prevalence in the United States.

Researchers have found that education level has an influence on likelihood of substance abuse. One study found that men and women ages 20–93 with low levels of schooling engaged in smoking, alcohol use, and drug use at higher rates than individuals with higher education (Dara Thailand, n.d.; Transcend, 2015). Further, almost half of all patients in treatment for substance abuse in the United States in 2001 never attended college or university (Dara Thailand, n.d.; Transcend, 2015). The Florida Department of Corrections found incorporated education in correctional facilities was effective, such that inmates who participated in different education offerings while incarcerated had lower rates of substance abuse and recidivism upon release (Florida Department of Corrections, n.d.). Therefore, level of education may be directly correlated to substance abuse prevalence.

Short-term Drug Treatment Programs

Studies have shown progress among jail inmates who have taken part in an intensive short-term drug treatment such as MI (Bahr, Harris, Strobell, & Taylor, 2013). Bahr et al. (2013) sampled 70 inmates who participated in a short-term drug treatment program and compared them to 70 inmates who did not to participate. The sample treatment showed a decrease in recidivism for those who participated in the treatment (Bahr et al., 2013). Among the non-participants, 46% returned to jail or prison (Bahr et al., 2013). During the qualitative study, participants mentioned that the program contributed positively to understanding their addiction (Bahr et al., 2013). Understanding and recognizing the consequences of their own behavior may contribute to changing an individual's perspective of their actions (Bahr et al., 2013). Additionally, the results demonstrated that an intensive, short-term drug program like MI, if incorporated into jails, may contribute to reducing the risk of recidivism (Bahr et al., 2013). Furthermore, this action could contribute to a social change among drug users and offer the treatment they need to reduce their chances of recidivism.

Specialists and policy makers in Illinois implemented a prison-based therapeutic community (TC) in one of the state's medium-security prisons to address prison-based substance-abuse treatment (Olson & Lurigio, 2014). In 2004, the Sheridan Correctional Center, located in Chicago, Illinois, was transformed into a fully committed TC mainly for adult male prison inmates (Olson & Lurigio, 2014). Because there was an established formal assessment completed, all the inmates who were placed in the Sheridan Correctional Center were identified as needing substance abuse treatment (Olson & Lurigio, 2014). TC was developed to allow daily housing for a population of 950 inmates

participating in the program (Olson & Lurigio, 2014). TC is an example of an MI program currently in place in prison.

The TC program was structured so that each inmate was assigned to a group that fit their needs (Olson & Lurigio, 2014). In each unit, there were inmates from which other inmates could learn (Olson & Lurigio, 2014). These actions taught inmates how to be open and share their experiences of drug use or how they developed their addictive behaviors (Olson & Lurigio, 2014). TC helped with peer interactions and influenced engagement, leading to positive outcomes (Olson & Lurigio, 2014). TC also helped inmates adapt to changes in society about their personal and social responsibilities after release from prison (Olson & Lurigio, 2014).

Programs for drug addiction treatment, such as MI, are made to decrease an individual's drug consumption while incarcerated, to reduce the amount of new drug users, and to improve the health of drug abusers and users (Sušić, Ničea Gruber, & Guberina Korotaj, 2014). Motivation is a critical factor in patients' changing their substance use behaviors (Sušić et al., 2014). Psychotherapists use techniques including (a) articulating empathy by enthusiastically listening to the patient lacking judgment; (b) disapproval, or blame, to gain a better understanding of the patient's condition and viewpoint; and (c) developing inconsistency in the patient's mind between present, past, and future behaviors (Sušić et al., 2014). Future goals established through investigation of continued substance use included evading argumentation and labeling, progressing with resistance by articulating instead of contesting against it, and supporting self-efficacy by presenting patients with samples of encouraging changes that others have made (Sušić et al., 2014).

Taking accountability and preparing individuals for change by helping them work through uncertainty about change through active listening and tender feedback procedures was critical (Sušić et al., 2014). Patients were more likely to absorb and hear information delivered in a respectful, not confrontational, and empathetic way, and based on a patient's needs (Sušić et al., 2014). Also, patients were heartened to develop replacement behaviors for their substance use behaviors specific to their situations and desires (Sušić et al., 2014). In this way, every patient shaped a personalized plan and one that the patient was more likely to follow over a long period of time (Sušić et al., 2014). The growing awareness about the biological effects of drugs increased patient's information about themselves and the nature of the problem behavior (Sušić et al., 2014). Incarceration is a setting with special complications for the promotion of health (Sušić et al., 2014).

At the individual level, prison takes away autonomy and may hinder or damage self-esteem (Sušić et al., 2014). Common difficulties, including bullying, mobbing, monotony, and social exclusion on discharge, may get worse as family ties are stressed by prison sentencing (Sušić et al., 2014). These complications make prison a problematic environment for promoting health, but also an exclusive opportunity for health promotion, health instruction, and disease prevention (Sušić et al., 2014). Prison presents an opportunity to address disparity in health opportunities by means of specific health interventions, as well as procedures that impact the wider causes of health. Each prison has the potential to create a healthy atmosphere; a single establishment can address spiritual, physical, social, and mental health and wellbeing (Sušić et al., 2014). For the many prisoners who led disordered lives prior to imprisonment, this is their only

opportunity to have a well-ordered approach for evaluating and addressing health needs (Sušić et al., 2014). Substance addiction is a chronic disorder subject to high relapse rates, and often requires long-term constant treatment.

Drug use is one of the chief problems facing prison organizations, threatening security, controlling relationships between prisoners and staff, and leading to extreme violence and bullying for both prisoners and their families and friends in the community (Sušić et al., 2014). Drug addiction services and procedures to address infectious diseases in prisons should be comparable to the services provided outside prisons (Sušić et al., 2014). This can best be accomplished through close collaboration and communication between prison and communal services, which MI can provide. Continuity of treatment for prisoners entering and leaving prison dictates a close cooperation among prisons and external agencies (Sušić et al., 2014). Relapse to drug use and fatal overdoses after release are widespread, and the risks need to be talked about during the time of imprisonment (Sušić et al., 2014). A widespread range of drug services must be available to prisoners, based on personal and individual needs (Sušić et al., 2014). Training for prison staff and prisoners on drugs and related health problems is essential. Drug services in prisons should be subject to monitoring, nursing, and evaluation (Sušić et al., 2014).

A large amount of literature covers how rehabilitation and supervision programs can be beneficial in reducing recidivism rates regarding individuals released from prison (Trotter, McIvor, & Sheehan, 2012). Surrounded by the growing literature concerning effective practices in reducing recidivism, Trotter et al. (2012) stated that a successful intervention includes: (a) readily available information when offenders need to access it; (b) an explanation of workers' roles; (c) a model showing how reinforcing prosocial

values and actions and can serve the appropriate use regarding the many challenges or confrontations one is faced with; (d) help so the client understands the problem; (e) facilitation in addressing problems; (f) help with one's focus on skill building, including social skills building, to deal with practical situations rather than feeling left out without any insight, which could help the client take a holistic view of the issues rather than staying on the one problem or symptoms; and (g) presentation of an optimistic view within a changed behavior (Trotter et al., 2012).

Recidivism

Dickerson and Stacer (2015) focused on the comparison of recidivism rates among substance abuse treatment and non-treatment groups of drug offenders. Dickerson and Stacer also observed how demographic factors, such as gender, age, and race, would have an impact on recidivism of drug offenders. The researchers found that ethnicity was related to recidivism in three of the five drug treatment programs studied. African American participants have been found to be more likely to recidivate than European American participants, and Latino/a participants have been found to be more likely than any other group to recidivate (Dickerson & Stacer). Notable findings from other studies of recidivism and drug treatment include issues related to education, marital status, employment, and drug of choice (Dickerson & Stacer, 2015). Drug treatment participants who were arrested during the follow-up period were less likely to have a high school diploma or General Education Diploma and more likely to be single than participants who were not rearrested (Dickerson & Stacer, 2015).

Recidivism and Age

In the United States, 18 is the age of majority (Fowler & Kurlychek, 2018). However, in all 50 states, individuals under 18 years old can be tried as adults for criminal offenses. Minors, or individuals under age 18, who are tried and convicted for criminal offenses as adults face damages to mental and physical health, increased recidivism rates, and increased government spending on resources and prisons (Fowler & Kurlychek, 2018; Swanson, 2018). Therefore, increasing the age at which individuals can be tried as adults may positively impact the lives of young individuals. Many minors who enter adult prisons do not have access to rehabilitative services that the juvenile justice system provides. Thus, minors tried and convicted as adults often have higher recidivism rates than older convicted individuals.

Pushing teens towards juvenile courts may initially increase costs for state and local governments, as this would increase the need for family court employees and representation for minors in juvenile systems (Swanson, 2018). However, evidence suggests that prosecuting more youth offenders in juvenile justice courts can and will save taxpayers money long term, as this decreases costs associated with recidivism, and offenders will then be able to contribute to society and join the workforce upon their exit from the juvenile justice system (Fowler & Kurlychek, 2018).

Recidivism and Gender

Mastrorilli, Norton-Hawkl, and Usher (2015) conducted secondary analysis of female recidivism rates based on data from the Bureau of Justice Statistics. They reported that of the sample of criminal offenders released in 1994, 57.6% of female offenders were rearrested within 3 years of release. This contrasts with 68.4% of male offenders being

rearrested within the same group of released prisoners (Durose, Cooper, & Snyder, 2014; Olson, Stalans, & Escobar, 2016). However, Yesberg, Scanlan, Hanby, Serin, and Polaschek (2015) found that female offenders' recidivism rates were significantly higher than male offenders' rates within one year of release from prison. Yesberg et al. found that within one year of release from prison 26% of female and 16% of male offenders were rearrested. Further, because prison populations are majority male, most research on recidivism has been based on male offenders and most rehabilitation programs for reducing recidivism are designed based on male offenders (Durose et al., 2014; Mastrorilli et al., 2015; Olson et al., 2016; Yesberg et al., 2015).

Recidivism and Ethnicity

Researchers have found that Latino/a and Black criminal offenders are more likely to recidivate than White offenders (Atkin-Plunk, Peck, & Armstrong, 2017; Durose et al., 2014; Wehrman, 2010). Atkin-Plunk et al. (2017) evaluated the differences in recidivism rates among White, Black, and Latino/a prison releasees by using three different recidivism measures: rearrests, reconviction, and reincarceration. Atkin-Plunk et al. explained that White releasees showed the lowest levels of recidivism, while Black releasees had the highest levels of recidivism. Wehrman (2010) also found that Black releasees were more likely to recidivate than White releasees. Wehrman explored how race was related to social disadvantages that may lead to crime and recidivism. However, Wehrman did not identify any significant relationship between disadvantage and recidivism rates. Race was the only significant predictor of recidivism.

Recidivism and Level of Education

Education can decrease recidivism rates when provided in correctional facilities (Hall, 2015). Hall's (2015) findings were based on data from 1995–2010 regarding correctional facility education offerings, and specifically college or higher education offerings. Despite existing research on the benefit of correctional education for incarcerated individuals and society via decreased recidivism, decreased spending on prisons and justice systems, and increased functioning and success of individuals, there is little support for correctional education (Hall, 2015).

Drug Offenders and Recidivism

In California, Proposition 36 was introduced that successfully routed several drug abusing offenders to treatment in a very short time by decreasing incarceration cost and increasing favorable outcomes (Evans, Li, Urada, & Anglin, 2014). Another study projected California's reoffending rate for 2004–2007 as being the second highest in the country, at 57.8%, which was a small improvement from the 61.1% rate in 1999–2002 (Mandiberg & Harris, 2014). Repeat offender populations are a major driver of prison and jail overcapacity and the huge public expenses to build prison beds and manage parolees in the community (Mandiberg & Harris, 2014). Recidivism partially drives the need for increased funding for prisons and jails (Mandiberg & Harris, 2014). High-risk offenders, however, commonly suffer from a lack of protected housing, re-association with peers involved in crime, use of drugs and alcohol, a lack of financial means, a lack of living-wage employed opportunities, and inadequate means of navigating post-release managerial obstacles (Mandiberg & Harris, 2014). Additionally, over half of the individuals who are in jail or prison have serious complications with drugs, including

alcohol, and they do not accept effective treatment while incarcerated (Mandiberg & Harris, 2014). It is, nevertheless, possible to decrease the rate of recidivism through providing of the right types of services (Mandiberg & Harris, 2014). The success of any given rehabilitation or treatment facility or program may be undecided (Mandiberg & Harris, 2014). In general, however, plans and programs providing facilities that target the contributing factors and give criminals the means and capacity to positively reenter society, undeniably reduce recidivism (Mandiberg & Harris, 2014).

Scholars advocate for a practical and result-driven method, and they embrace evidence-built rehabilitation and behavior programs (Mandiberg & Harris, 2014). Though strategies vary widely, three positive programs share mutual threads of "outcome-based performance, severe assessment, and an optimistic return on taxpayer investment" (Mandiberg & Harris, 2014, p. 846). Housing facilities, drug treatment centers, education facilities, and employment therapy services have been found to be effective (Mandiberg & Harris, 2014). This article sets out a method—focusing on alcohol and drug-free housing—that combines these operative intervention systems and significantly surges the rate at which contributing ex-felons return to normal, healthy, productive, and noncriminal lives (Mandiberg & Harris, 2014). In fact, a study by Portland State University found that successful involvement in treatment, alcohol- and drug-free public housing, and recovery, reduced participants' criminal activity by 93% (Mandiberg & Harris, 2014). Nonetheless, establishing such a program requires thoughtful and careful planning and execution, not only to ensure that the numerous elements are successfully maintained, but to navigate the often-tricky legal scopes that affect this type of housing as well (Mandiberg & Harris, 2014).

A relatively new rehabilitation approach is the good lives approach, which involves specifying the aims of therapy, providing a justification of these aims, identifying clinical targets, and outlining how treatment should proceed in alignment with assumptions and goals (Netto, Carter, & Bonell, 2014). However, there is no reliable proof documenting the efficiency of the good lives approach in reducing recidivism (Netto et al., 2014). Netto et al. conducted a review of the literature and found evidence that the good lives approach can have a positive impact on treatment engagement and motivation. Netto et al.'s study had a very small sample size (n = 47), however, and did not include a power calculation.

There appears to be some provisional proof of good lives interventions being as effective as risk-focused interventions in reducing attrition, and completely enhancing the engagement and motivation between participants (Netto et al., 2014). Although practitioners may value the potential of good lives interventions to greatly improve engagement, motivation, and lower attrition, the lack of high-quality evidence prohibits the drawing definitive conclusions (Netto et al., 2014). Furthermore, significant warnings should be made when generalizing these initially promising findings to other types of wrongdoers. As such, these findings do not apply to other types of offenders (Netto et al., 2014).

Offenders who have drug problems are a diverse group, so dealing with their relationship to drugs and crime can be complex (Olson & Lurigio, 2014). Offenders can become addicted to drugs as a result of genetic tendencies and various life circumstances, which can lead them to commit crimes (Olson & Lurigio, 2014). Whatever the attitude towards addiction and criminality, drug control policies must include understanding that

drug addiction behaviors represent a chronic relapse involving biological, psychological, social, and behavioral concomitants (Olson & Lurigio, 2014). Programs for drug-using offenders should be comprehensive and embrace a variety of treatments, such as social services (National Institute of Health, 2018), related to their problems (Olson & Lurigio, 2014).

The prison atmosphere has the potential as a unique chance to intervene. Prison may be one of the few chances for those in the community who have disordered lives to access treatment facilities that can attend to their compounded needs (Sindicich et al., 2014). Intervening now may also help to decrease the risk of relapse and unlawful recidivism post release. Additional research probing the efficiency of such interventions in very large prison facility samples is warranted (Sindicich et al., 2014). This may assist to lessen the health disparity between prisoners and the general population and reduce the weight on strained financial correctional properties (Sindicich et al., 2014).

Just as important is re-examining current procedures on drug use and addiction. Drug treatment programs suggest and offer a promising chance to shift from incarceration to treatment management (Wakeman & Rich, 2015). Nevertheless, stigma and misinterpretation about the evidence-based maintenance treatments is of incredible concern as are the insinuations of judges and other drug treatment program representatives making medical conclusions without the training or proficiency to do so (Wakeman & Rich, 2015). Change, on any terms, is a difficult process a mere vital ingredient in affecting and touching change is the essential motivation of the service user or users (Copeland, McNamara, Kelson, & Simpson, 2015). Furthermore, motivation is more indirect than just labeling individuals as being ready or in denial. The broader social

work world might learn from the approach to alter utilization in the substance use field (Copeland et al., 2015). MI materialized as a technique to augment intrinsic motivation to change and has developed into standard practice (Copeland et al., 2015).

MI presents an alternative method to using persuasion, coercion, or disagreement, all of which can be more probable to improve resistance (Copeland et al., 2015). A major asset of MI is its flexibility and adaptability, and similarity to concepts that social workers would learn in training (Copeland et al., 2015). Social workers are well positioned to understand MI because they are trained in communication skills, and especially in listening skills (Copeland et al., 2015).

Service users in numerous fields may feel ambivalent about confronting the changing situations of their lives (Copeland et al., 2015). Using MI to augment intrinsic motivation can make them partners in the modification process, rather than passive beneficiaries (Copeland et al., 2015). If modification strategies support and strengthen intrinsic motivation based on the opinions and visions that service user's value, then a meaningful engagement is likely to take place (Copeland et al., 2015).

Woodruff et al.'s (2014) case study found little to no support for the helpfulness of the SBIRT method for illicit drug use. The principal conclusion variable, past 30-day drug abstinence, was not noteworthy (Woodruff et al., 2014). Evaluations of ASI drug use combined scores using data that were imputed were also not noteworthy (Woodruff et al., 2014). Relating study outcomes to other populations may be problematic given the lack of similar study designs, types of drug users, and other important methodological differences (Woodruff et al., 2014).

Bernstein et al.'s (2005) research on momentary MI in treatment centers for opioid and cocaine users is the most comparable to the present study regarding design. Bernstein et al. (2005) demonstrated a 4.6% change in biologically validated past 30-day abstinence percentage rates among intervention and control collections at 6-month follow-up, compared to the 5% variance in abstinence rates reported (Woodruff et al., 2014). They also conveyed beneficial effects of the short-term intervention on ASI drug and medical composite scores (Woodruff et al., 2014).

Bernstein et al.'s (2005) results do not align with those of Woodruff et al. (2014), insofar as Woodruff et al. did not see decreases in ASI drug scores in the SBIRT intervention assembly. Differences in enrollment criteria, the racial/ethnic composition of participants, the content/intensity of what the control group received, and the type of drug users enrolled make formal comparison between the two study results difficult (Woodruff et al., 2014). It is also noteworthy that the Bernstein et al. study enrollees had much higher ASI drug use scores at baseline (.25 versus .06), and lower ASI medical scores (.56 versus .67) than Woodruff et al.'s (2014) participants. Perhaps the benefits of the SBIRT approach are more greatly realized among those at higher addiction levels (Woodruff et al., 2014).

Summary and Transition

Previous researchers highlighted important findings on MI use that may help decrease recidivism among drug users who offend to support their drug habits. MI can help individuals identify why they abuse drugs. It also helps to reduce one's drug habits. Correctional program research is connected to desistance research regarding changing an individual's behavior, which can contribute to reducing recidivism (Healy, 2014). In

Chapter 2, I presented an exhaustive review of the current literature regarding MI and recidivism, as well as an in-depth assessment of Bandura's extrinsic motivation theory as it relates to the present study. I also included an outline of the techniques used in understanding how to reduce recidivism.

Many criminal justice clients abuse and suffer from alcohol or drug habits, which are often also related to mental and personality disorders (Håkansson & Berglund, 2012). Research shows that patients must be collaborators during their treatment to create a therapeutic association that involves controlling countertransference and preservation of emotional detachment (Kelly, 2015). MI is a goal-oriented style of communication with collaborations of material and well-documented efficiency in addiction treatment (Arkowitz et al., 2015; Lee et al., 2015).

MI is a useful strategy in working with individuals who are uncertain about changing their addictive behavior (Barrera et al., 2016). MI is a pragmatic counseling tactic where a therapist uses a collective, nonconfrontational, and nonjudgmental strategy in trying to resolve a client's uncertainty in changing his or her behavior (Osilla et al., 2018). Additionally, over half of individuals in jail or prison have serious complications with drugs, including alcohol, and many do not accept treatment while incarcerated (Mandiberg & Harris, 2014). Furthermore, MI is more indirect than just labeling individuals as being ready or in denial. Social workers might learn from the approach to alter utilization in the substance use field (Copeland et al., 2015).

Studies have shown progress among jail inmates who have taken part in an intensive short-term drug treatment (Moore et al., 2018). The access to high-quality care can reduce reliance on emergency divisions and other costly acute care situations,

improve health status, and greatly reduce rates of recidivism by addressing some of the root causes of imprisonment (Rezansoff, Moniruzzaman, Gress, & Somers, 2013). A large amount of literature exists highlighting the importance of rehabilitation and supervision programs or reducing recidivism rates of individuals released from prison (Trotter et al., 2012). However, research is limited regarding recidivism prevention programs specifically for offenders with addiction problems. MI can be used as addiction treatment for individuals who are imprisoned or have been released from prison, and reflects an accurate interpretation of motivation. In presenting an alternative method to coercion or persuasion, MI is unwavering in its inevitability in the capacity for partnership employment and the potential to raise growth and change (Copeland et al., 2015).

In Chapter 3, I will include a thorough outline of the methodological approach of the study as well as the instruments used to measure the quantifiable aspects of the study variables. In Chapter 4, I will present the results of the study. Finally, in Chapter 5 I will include a discussion of the findings as well as recommendations for future research.

Chapter 3: Methodology

Introduction

The purpose of this study was to explore whether MI has a significant effect on reducing recidivism among drug users. Reducing recidivism among drug users may reduce the number of offenders who return to prison within 3 years of release. Furthermore, exploring the effectiveness of MI in reducing recidivism among drug users may offer correctional personnel an alternate option for treating drug offenders to rehabilitate them while they are incarcerated. This was a quantitative study involving the importance of incorporating MI to reduce recidivism within drug users.

This chapter contains a discussion of the research design and methodological issues relevant to the study. First, I will discuss the research design and rationale, followed by the population, sample, and procedures for data collection. This will be followed by descriptions of the study instrumentation, data analysis procedures, threats to validity, and ethical procedures.

Research Design and Rationale

The independent variable in this study was the presence of MI programs in county facilities. The dependent variable in this study was the county-level recidivism rate. I selected a quantitative nonexperimental design for this study. A quantitative research method is appropriate when variables of interest can be objectively measured or quantified (Howell, 2013). Recidivism rate is a quantifiable variable, so a quantitative method was appropriate for this study. Specifically, a quantitative nonexperimental design is appropriate when the aim of the researcher is to compare groups that cannot be randomly assigned. Because I used archival data and could not randomly assign facilities

or offenders to MI or no-MI groups in this study, a true experimental design was not feasible. Therefore, a nonexperimental design is appropriate for this study.

Methodology

Population

The population under investigation in this study was rehabilitation facilities in Indiana and the offenders within those facilities. The population was drug offenders who recidivated due to their drug use. Therefore, reducing recidivism among drug users may reduce the number of offenders who return to prison within 3 years of release. Furthermore, exploring the effectiveness of MI in reducing recidivism among drug users may offer correctional personnel an alternate option for treating drug offenders to rehabilitate them while they are incarcerated.

Sampling and Sampling Procedures

The sampling strategy for this study was convenience sampling. Convenience sampling is appropriate when it is not feasible to randomly sample from the population of interest. In this study, I could not ensure that all facilities in the population had an equal chance of being selected into the sample. Therefore, a convenience sample of available records for facilities and counties was appropriate for this study. County-level recidivism rates were obtained through the Indiana Department of Correction. These data are publicly available through the Indiana Department of Correction website (https://www.in.gov/idoc/2376.htm). To determine whether MI programs were present in facilities in each county, I contacted facility administrators within each county by phone or e-mail. The maximum possible sample size of counties in Indiana was 92. I conducted a power analysis using G*Power to determine the statistical power of the study with a

sample size of 92. The power analysis was based on an independent samples *t*-test with a medium effect size and a significance level of .05. The results of the power analysis showed that the statistical power for this study was .66.

Procedures for Recruitment, Participation, and Data Collection

To examine the research question, I collected historical data during a fixed time period measuring the recidivism rates among counties containing programs that had MI and counties containing programs that did not have MI. These data were measured at the county level. I included programs such as Out program, Proposition 3 (Prop36), and Snap. I measured recidivism as a continuous outcome variable, indicating the percentage of offenders who were released and returned to institutional custody within 3 years of their release date. I measured the availability of MI in each of these counties as dichotomous. The role I took was to examine archival data. Because this was archival (secondary) data, I had no direct participation in the intervention process. During this process I made comparisons among the different counties regarding what programs were offered that were similar to MI programs and the percentage of inmates that recidivated. Therefore, I analyzed data that already existed. The demographic area of the study was the state of Indiana.

Instrumentation and Operationalization of Constructs

I operationalized the presence of MI programs in facilities as a dichotomous categorical variable indicating whether each county had facilities with MI programs. I operationalized the county-level recidivism rate as a continuous variable indicating the percentage of offenders who were released and returned to institutional custody within 3 years of their release date.

Data Analysis Plan

I coded each variable according to the operational definitions described previously and I entered them into SPSS 24.0 for data analysis. I screened the archival data for missing data. I excluded cases with missing data for the variables of interest the analysis. I computed and reported descriptive statistics for the sample. I also computed frequencies and percentages for categorical variables, and means and standard deviations for continuous variables.

The research questions and hypothesis for this study were:

RQ1: Is the availability of MI in detention facilities significantly related to rates of recidivism?

$H_0$1: There is no significant relationship between the availability of MI in detention facilities and rates of recidivism.

H_a1: There is a significant relationship between the availability of MI in detention facilities and rates of recidivism.

To address Research Question 1, I conducted an independent samples *t*-test. An independent samples *t*-test is appropriate when the goal of the researcher is to compare two or more groups on a continuous dependent variable (Howell, 2013). In this analysis, the independent variable was the presence of MI programs in county facilities. The dependent variable was the county recidivism rate. Prior to interpreting the analysis, I tested the assumptions of the independent samples *t*-test. The independent samples *t*-test assumes that the data are normally distributed and there are equal variances between groups. I tested these assumptions using a Shapiro-Wilk test and a Levene's test,

respectively (Pagano, 2009). I determined statistical significance using a significance level of .05.

Threats to Validity

External validity refers to the extent that the results of the study are generalizable. A threat to external validity in this study was the use of convenience sampling to obtain the archival data. Because random sampling was not feasible, the sample of records from facilities and offenders obtained for this study may not be representative of the larger population. To address this threat, I provided descriptive information to characterize the sample. Internal validity is the extent that the results of the study are attributable to the independent variable. The main threat to internal validity in this study was that the independent variable (presence of MI) could not be randomly assigned. This limited my ability to draw cause and effect conclusions regarding the effects of MI on recidivism.

Confounding variables may partially explain any differences found in recidivism between the groups. For example, I excluded from the study individuals who were taking prescribed medication such as methadone, suboxone, naltrexone, and others substances, to curb cravings. Finally, statistical conclusion validity is the extent that the results of the statistical analyses can be accurately interpreted. To ensure high statistical conclusion validity, I conducted a power analysis to determine the statistical power of the analysis and I tested the assumptions of the analysis before interpreting the results.

Ethical Procedures

Prior to accessing the archival data, I obtained approval from the university Institutional Review Board. I also obtained permission from each facility as needed to access and use their records for research. I had no access to information that could

personally identify any individual offender. I collected the information from the facilities regarding statistical information only. I kept all archival data obtained in this study confidential. The facilities provided the data over encrypted e-mail servers, and then I stored the data on a password-protected personal computer. I will store all data for 5 years after the conclusion of the study, and after that time I will securely erase the data.

Summary

This chapter contained a discussion of the methodological issues of the study. I selected a quantitative, nonexperimental design for this study because the study involves comparing groups on a quantifiable outcome. I obtained archival data on county recidivism rates both from counties containing facilities with MI and counties containing facilities without MI. I conducted an independent samples *t*-test to determine whether there were differences in recidivism based on presence and attendance of MI. Chapter 4 will include presentation the results of the study. Finally, in Chapter 5, I will discuss the findings as well as recommendations for future research.

Chapter 4: Results

Introduction

The purpose of this study was to explore whether MI has a significant effect on reducing recidivism among drug users. I analyzed archival data from the Indiana Department of Correction. The research question and hypotheses that I addressed in this study were as follows:

RQ1: Is the availability of MI in detention facilities significantly related to rates of recidivism?

I examined the independent variable (availability of MI) and the relationship to the dependent variable (recidivism) using the following hypotheses:

$H_0$1: There is no significant relationship between the availability of MI in detention facilities and rates of recidivism.

H_a1: There is a significant relationship between the availability of MI in detention facilities and rates of recidivism.

This chapter contains a description of the collected data. Then, I present the results of the analysis. Finally, I conclude this chapter with a summary of the results.

Data Collection

I obtained publicly available county-level recidivism rates from 92 counties in Indiana from the Indiana Department of Correction website; I retrieved data from the 2018 recidivism report from the website approximately 2 weeks after IRB approval (approval number 0145236). The collection procedures were consistent with those that I outlined in Chapter 3. Because the data are publicly available, there were no problems with collecting the data.

I calculated the desired sample size using G*Power for an independent samples *t*-test assuming a medium effect size ($d = 0.50$), a power of .80, and a significance level of .05. The results showed that the desired sample size was 128 counties. The number of counties represented by the archival data was 92. Therefore, I conducted a post hoc power analysis to determine the statistical power achieved in the study. The results of the power analysis showed that the statistical power for this study was .66.

Demographics

Table 1 displays the availability of MI and recidivism rates for each county. Across all 92 counties, the recidivism rate ranged from 0.0% to 55.1%.

Table 1

Availability of MI and Recidivism Rate for Each County

County	Availability of MI	Recidivism rate (%)
Adams County	Available	35.7
Allen County	Available	38.0
Bartholomew County	Available	33.9
Benton County	Not available	14.3
Blackford County	Available	33.8
Boone County	Available	27.6
Brown County	Available	30.0
Carroll County	Not available	26.0
Cass County	Available	34.0
Clark County	Available	17.9
Clay County	Available	35.1
Clinton County	Not available	44.2
Crawford County	Available	27.3
Daviess County	Available	20.9
Dearborn County	Available	32.6
Decatur County	Available	33.0
DeKalb County	Available	27.7
Delaware County	Not available	29.9
Dubois County	Available	18.4
Elkhart County	Not available	24.8
Fayette County	Available	42.5

Floyd County	Not available	19.8
Fountain County	Available	25.0
Franklin County	Not available	28.9
Fulton County	Not available	35.5
Gibson County	Available	26.4
Grant County	Available	33.2
Greene County	Available	31.6
Hamilton County	Available	28.0
Hancock County	Not available	27.8
Harrison County	Available	20.0
Hendricks County	Available	28.7
Henry County	Not available	30.5
Howard County	Available	35.9
Huntington County	Available	38.7
Jackson County	Available	33.7
Jasper County	Not available	30.0
Jay County	Available	55.1
Jefferson County	Available	29.9
Jennings County	Available	27.7
Johnson County	Available	30.6
Knox County	Available	26.3
Kosciusko County	Not available	27.6
LaGrange County	Available	16.9
Lake County	Available	28.2
LaPorte County	Available	29.1
Lawrence County	Available	36.0
Madison County	Available	41.5
Marion County	Available	43.9
Marshall County	Available	20.5
Martin County	Available	35.0
Miami County	Available	20.9
Monroe County	Available	33.5
Montgomery County	Available	26.2
Morgan County	Available	33.1
Newton County	Not available	17.2
Noble County	Available	34.6
Ohio County	Available	37.5
Orange County	Available	41.7
Owen County	Available	16.1
Parke County	Available	25.5
Perry County	Available	31.9
Pike County	Not available	36.0
Porter County	Available	22.1

Posey County	Available	30.8
Pulaski County	Available	20.0
Putnam County	Not available	36.9
Randolph County	Not available	24.0
Ripley County	Available	42.0
Rush County	Available	29.0
Scott County	Not available	33.6
Shelby County	Available	35.8
Spencer County	Available	41.4
St. Joseph County	Available	32.9
Starke County	Available	17.9
Steuben County	Not available	30.4
Sullivan County	Available	23.8
Switzerland County	Available	18.2
Tippecanoe County	Available	33.3
Tipton County	Available	33.3
Union County	Available	26.7
Vanderburgh County	Available	30.0
Vermillion County	Available	34.5
Vigo County	Available	32.3
Wabash County	Available	39.0
Warren County	Available	0.0
Warrick County	Available	24.3
Washington County	Available	21.5
Wayne County	Available	27.6
Wells County	Available	35.4
White County	Not available	21.4
Whitley County	Available	32.4

Summary of the Results

I measured the presence of MI programs in facilities as a dichotomous categorical variable indicating whether each county had facilities with MI programs. Further, I measured the county-level recidivism rate as a continuous variable indicating the percentage of offenders who were released and returned to institutional custody within 3 years of their release date.

To determine if MI programs were present in facilities in each county, I contacted facility administrators within each county by phone or e-mail. Through these contacts, I determined whether MI programs were available in the facilities in each county. Most counties had MI available in their facilities (n = 73, 79.35%). Descriptive statistics for the 92 counties are displayed in Table 2. Next, the average recidivism rate across all 92 counties was calculated, 29.72% (SD = 8.01).

Table 2

Descriptive Statistics for Study Variables

Variable	*n*	%
Availability of MI		
Available	73	79.35
Not available	19	20.65
	M	*SD*
Recidivism rate	29.72%	8.01%

Prior to interpreting the analysis, I tested the assumptions of the independent samples t-test. The independent samples t-test assumes that the data are normally distributed and there are equal variances between groups. I tested these assumptions using a Shapiro-Wilk test and a Levene's test, respectively (Pagano, 2009). The result of the Shapiro-Wilk test was not significant, W = 0.97, p = .061. This result suggests that the distribution of recidivism rates was not significantly different from normal, indicating the normality assumption was met. The result of Levene's test was not significant, $F(1, 90)$ = 0.27, p = .608. This result suggests that the variance in recidivism rates in counties with MI was not significantly different from the variance in recidivism rates in counties without MI, indicating the assumption of equal variances was met.

Results

To address Research Question 1, I conducted an independent samples *t*-test. An independent samples *t*-test is appropriate when the goal of the researcher is to compare two or more groups on a continuous dependent variable (Howell, 2013). In this analysis, the independent variable was the availability of MI programs in county facilities. The dependent variable was county recidivism rate.

Table 3 displays the results of the independent samples *t*-test comparing the recidivism rates of counties with MI to counties without MI. The results of the independent samples *t*-test were not significant based on an alpha level of .05, $t(90) = 0.83$, $p = .408$, suggesting that counties with MI available in their facilities did not have significantly different recidivism rates than counties without MI available in their facilities. I did not reject the null hypothesis.

Table 3

Two-Tailed Independent Samples t-Test for Recidivism Rate by Availability of MI

	MI available		MI not available				
Variable	*M*	*SD*	*M*	*SD*	*t*	*p*	*d*
Recidivism rate	30.08	8.20	28.36	7.29	0.83	.408	0.22

Note. $N = 92$. *DF* for the *t*-statistic = 90. *d* represents Cohen's *d*.

Summary

I retrieved data for 92 counties in Indiana from the Indiana Department of Correction; I analyzed the data to determine if the availability of MI in detention facilities is significantly related to rates of recidivism. I conducted an independent samples *t*-test to answer the research question. The results of the *t*-test showed no significant difference in the recidivism rates of counties with MI compared with counties without MI, therefore, I

did not reject the null hypothesis. In the next chapter I will discuss these findings and directions for future research.

Chapter 5

Introduction

Individuals with substance use problems who have been incarcerated face increased risk of recidivism after release from prison compared with incarcerated individuals without substance use problems (Moore et al., 2018). Evidence-based treatment options for individuals with substance use problems in prison are limited, which negatively affects recidivism rate among these individuals (Moore et al., 2018; Simoneau et al., 2018). MI can be useful in treating individuals with substance use disorders (Miller & Rollnick, 2014). Research has indicated progress among incarcerated individuals who have taken part in intensive short-term substance abuse treatment programs, such as MI (Moore et al., 2018). Additionally, intensive, short-term substance abuse programs, such as MI, in detention facilities may contribute to reducing substance abusers' risk of recidivism associated with their substance use (Moore et al., 2018). Therefore, evaluating the effectiveness of MI as a treatment method to help reduce recidivism among incarcerated individuals with substance use disorders was important.

The purpose of this study was to explore whether MI had a significant effect on reducing recidivism among incarcerated substance users. Reducing recidivism among incarcerated substance users may reduce the number of offenders who return to prison within 3 years of release. Furthermore, exploring the effectiveness of MI in reducing recidivism among incarcerated substance users may offer correctional personnel an alternate option for treating substance abusers to rehabilitate them while they are incarcerated. I designed this quantitative study to examine the effectiveness of

incorporating MI as a treatment modality to reduce recidivism among incarcerated substance users.

The independent variable was the availability of MI in detention facilities (measured at the county level), and the dependent variable in the study was recidivism rate (measured at the county level). The research question that guided the study was: Is the availability of MI in detention facilities significantly related to rates of recidivism? I retrieved data for 92 counties in Indiana from the Indiana Department of Correction and analyzed them to determine if the availability of MI in detention facilities was significantly related to rates of recidivism. I conducted an independent samples *t*-test to answer the research question, and the results of the *t*-test showed no significant difference in the recidivism rates of counties with MI compared with counties without MI; the null hypothesis was not rejected.

Interpretation of the Findings

Extrinsic motivation is a reward-driven behavior that can increase productivity (Hennessey et al., 2015). Operant conditions are a form of extrinsic motivation that can be used to modify individuals' behavior by using rewards or punishments to increase or decrease certain behaviors. Thus, extrinsic motivation was a foundation of the present study because it helps understand the effect of motivating factors, such as those found in MI, on the likelihood of recidivism.

In using MI, probation staff can identify how to impose restrictions on individuals and build helpful relationships (Barrera et al., 2016). In addition, nonsignificant findings in the present study may indicate that training in MI is needed at the local level. With training, agents can build the skills and services to supervise for compliance and increase

the offender's readiness for change (Barrera et al., 2016). MI is a suitable and worthwhile intervention tool for this task, but it may require the use of additional methods and training to be effective, especially at local levels. For example, employing the Wheel of Change—a six-stage model of change Prochaska et al. (1992) developed—as a broader reference to stages of change can help to motivate people address their addictions (Barrera et al., 2016). Prochaska et al. (1992) conducted research to determine how people change regarding how they apply change intentions to their addictive behaviors. Once individuals decide they need to change their behavior, there is a preparation stage combined with intention and behavioral criteria (Prochaska et al., 1992). Therefore, individuals' actions occur in manageable stages. Thus, large-scale behavioral changes are often unsuccessful if they are not broken down into smaller stages, for which interventions such as the Wheel of Change and MI are designed (Barrera et al., 2016; Prochaska et al., 1992).

MI is a treasured, suitable, and genuine technique in probation work with offenders. It is surely not a cure-all, but it is a complete approach that has real value in guiding the ways in which practitioners think about and work with offenders and their additions (Barrera et al., 2016). MI is a combined, directorial conversational approach used for reinforcing a person's intrinsic motivation for and commitment to change. MI is a demonstrated successful, evidence-based intervention for facilitating positive behavior change and is utilized in the areas of substance abuse, mental health, and primary and specialty health care (Barrera et al., 2016). MI provides a basis for effective client-practitioner communication. As such, MI might be effective for decreasing recidivism if merged with other approaches such as cognitive behavioral therapy (CBT).

Limitations of the Study

External validity refers to the extent that the results of the study are generalizable. A threat to external validity in the study was the use of convenience sampling to obtain the archival data. Because random sampling was not feasible, the sample of records from facilities and offenders I obtained for this study may not be representative of the larger population. To address this threat, I provided descriptive information to characterize the sample. Internal validity is the extent that the results of the study are attributable to the independent variable. The main threat to internal validity in this study was that I could not randomly assign the independent variable (presence of MI). This limited the ability to draw cause and effect conclusions regarding the effects of MI on recidivism. Additionally, confounding variables may partially explain any differences found in recidivism between the groups. For example, individuals who were taking prescribed medication, such as methadone, suboxone, and naltrexone to curb cravings, were excluded from the study.

Finally, statistical conclusion validity involves the extent that the results of the statistical analyses can be accurately interpreted. To ensure high statistical conclusion validity, I conducted a power analysis to determine the statistical power of the analysis. The G*Power results showed that the desired sample size was 128 counties; however, the number of counties represented by the archival data was 92. Therefore, I conducted a post hoc power analysis to determine the statistical power in the study. The results of the power analysis showed that the statistical power for this study was .66. The study was underpowered, which compromised the statistical certainty of the results. Consequently, the results should be interpreted with this limitation in mind.

Recommendations for Further Research

The archival data on MI and recidivism rates for the study were retrieved from the county level and not from the state level. Therefore, future researchers might examine whether MI has a significant effect on reducing recidivism among drug users at the state level in Indiana prisons or at the state level in other state systems. Future researchers might consider targeting other state populations, which were not represented in the present study, to determine if there may be differences in the findings related to other state populations. I also recommend research on use and effectiveness of MI not only at different levels (e.g., county and state) but also among different regional groups (e.g., urban and rural). Additionally, it would be beneficial to conduct qualitative research to obtain in-depth comprehensive information and a better understanding of how MI is working for offenders.

The present study was also underpowered. Consequently, I recommend replicating the study with an adequate sample size. Further, I recommend research on other forms of intervention in addition to MI to help with recidivism in substance users. I also recommend further research on the effectiveness of MI training to determine if MI training is meeting objectives. Last, I recommend research on MI at other kinds of correctional and detention facilities.

Implications

The findings from this study provided several positive implications for social change at the county level in Indiana from the Indiana Department of Correction. Substance abuse is on the rise, and correctional facilities are overpopulated with substance use offenders who often do not receive the appropriate treatment for their

illness; therefore, they are at increased likelihood for recidivism (Maisto et al., 2014). MI focuses on the cause of the substance abuse and helps address the source of abuse rather than the outcomes. Existing studies have not focused specifically on MI among substance use offenders.

However, the findings of the present study suggest alternative approaches may be necessary for correctional personnel to use with offenders. Practitioners treating individuals with substance use disorders can benefit from the findings of the study. MI might not be effective for reducing recidivism for substance users, suggesting to correctional personnel that they should probably explore the efficacy of other methods. Positive social change implications are similar. Findings suggest that other methods besides MI may be necessary to reduce recidivism in substance users, leading both to decreased substance use and recidivism. Findings also indicate that the efficacy of MI training at local levels may be needed. Enhancing and improving MI training can help increase the effectiveness of MI as an intervention for substance use problems.

Study findings also suggest that MI may be more effective when used with other approaches. MI was initially developed to help build motivation for primary change; MI's approaches for initiating and maintaining change have only just been identified (Miller & Rollnick, 2012). According to Miller and Rollnick (2012), once initial motivation for change has been established, it may be a time to move forward with more action-oriented treatments such as CBT. As a result, including more action-oriented treatments may strengthen the behavior changes initiated during MI. Motivation may be inconsistent in strength and direction during change, indicating that supporting MI with CBT might lead to more effective behavioral treatment than using MI alone.

Conclusion

I conducted this study to fill in the gap in the literature on the extent to which MI has a significant effect on reducing recidivism among incarcerated substance users. Reducing recidivism among incarcerated substance users helps reduce the number of offenders who return to prison within 3 years of release. MI is an intervention used by corrections personnel to prompt change statements using techniques such as communicating empathy, circumventing arguing for change, and working on incongruity to strengthen obligation to change. However, corrections personnel may need to explore other methods for reducing recidivism in substance users at the county level. Or, it may be that MI can be more effectively used in conjunction with other treatments such as CBT.

Study results indicated that MI is not related to reducing recidivism among incarcerated substance users. Qualitative research is recommended, as well as research on MI at state levels and replicating the study with an adequate sample size. Study findings suggest that correctional personnel may need to explore alternate options for treating substance abusers and rehabilitate them while they are incarcerated to help reduce recidivism.

References

Arkowitz, H., Miller, W. R., & Rollnick, S. (Eds.). (2015). *Motivational interviewing in the treatment of psychological problems*. New York, NY: The Guilford Press.

Atkin-Plunk, C. A., Peck, J. H., & Armstrong, G. S. (2017). Do race and ethnicity matter? An examination of racial/ethnic differences in perceptions of procedural justice and recidivism among problem-solving court clients. *Race and Justice*, *9*(2), 151–179. doi:10.1177/2153368717691800journals.sagepub.com/home/raj

Bahr, S. J., Harris, P. E., Strobell, J. H., & Taylor, B. M. (2013). An evaluation of short term drug treatment among jail inmates. *International Journal of Offender Therapy and Comparative Criminology*, *57*(10), 1275–1296. doi:10.1177/0306624X12448650

Bandura, A. (1969). *Principles of behavior modification.* New York, NY: Holt, Rinehart, & Winston.

Barrera, T. L., Smith, A. H., & Norton, P. J. (2016). Motivational interviewing as an adjunct to cognitive behavioral therapy for anxiety. *Journal of Clinical Psychology*, *72*(1), 5–14.

Berger, L., LeBel, T. P., & Fendrich, M. (2012). Drug courts: An interview with Dr. Michael Fendrich. *Journal of Social Work Practice in the Addictions*, *12*(4), 438–445. doi:10.1080/1533256X.2012.728494

Bernstein, J., Bernstein, E., Tassiopoulos, K., Heeren, T., Levenson, S., & Hingson, R. (2005). Brief motivational intervention at a clinic visit reduces cocaine and heroin use. *Drug and alcohol dependence*, *77*(1), 49–59.

Cimino, A. N., Mendoza, N., Thieleman, K., Shively, R., & Kunz, K. (2015). Women

reentering the community: Understanding addiction and trauma-related characteristics of recidivism. *Journal of Human Behavior in the Social Environment*, *25*(5), 468–476. doi:10.1080/10911359.2014.983257

Cooper, C. S. (2012). *Drug court survey report: Executive summary*. Retrieved from National Criminal Justice Reference Service website: http://www.ncjrs.gov/

Copeland, L., McNamara, R., Kelson, M., & Simpson, S. (2015). Mechanisms of change within motivational interviewing in relation to health behaviors outcomes: A systematic review. *Patient Education and Counseling*, *98*(4), 401–411.

Cullen, F. T., & Jonson, C. L. (2017). Labeling theory and correctional rehabilitation: Beyond unanticipated consequences (Vol. 18). In D. P. Farrington & J. Murray (Eds.), *Labeling theory: Advances in criminological criminological theory* (pp. 63–85). New Brunswick, NJ: Transaction Publishers.

Dickerson, J. G., & Stacer, M. J. (2015). Participants and those who opted out: An exploratory recidivism study of the Vanderburgh county (Indiana) treatment court. *International Journal of Arts & Sciences, 8*(8)*,* 455–466.

Durose, M. R., Cooper, A. D., & Snyder, H. N. (2014). *Recidivism of prisoners released in 30 states in 2005: Patterns from 2005 to 2010*. Washington, D.C.: Bureau of Justice Statistics.

Evans, E., Li, L., Urada, D., & Anglin, M. D. (2014). Comparative effectiveness of California's Proposition 36 and drug court programs before and after propensity score matching. *Crime & Delinquency*, *60*(6), 909–938.

Florida Department of Corrections. (n.d.). Academic, vocational, and substance abuse program impacts. Retrieved from http://www.dc.state.fl.us/pub/recidivismprog/execsum.html

Fowler, E., & Kurlychek, M. C. (2018). Drawing the line: Empirical recidivism results from a natural experiment raising the age of criminal responsibility. *Youth Violence and Juvenile Justice*, *16*(3), 263–278. doi:10.1177/1541204017708017

Håkansson, A., & Berglund, M. (2012). Risk factors for criminal recidivism: A prospective follow-up study in prisoners with substance abuse. *BMC Psychiatry*, *12*(1), 111. Retrieved from http://www.biomedcentral.com/1471-244X/12/111

Hall, L. L. (2015). Correctional education and recidivism: Toward a tool for reduction. *Journal of Correctional Education*, *66*(2), 4–27.

Healy, D. (2014). Becoming a desister: Exploring the role of agency, coping and imagination in the construction of a new self. *British Journal of Criminology*, *54*(5), 873–891.

Hennessey, B., Moran, S., Altringer, B., & Amabile, T. M. (2015). Extrinsic and intrinsic motivation. *Wiley Encyclopedia of Management*, *11*, 1–4. doi:10.1002/9781118785317.weom110098

Howell, D. C. (2013). *Statistical methods for psychology* (8th ed.). Belmont, CA: Wadsworth Cengage Learning.

Kelly, T. M. (2015). The therapeutic alliance and psychosocial interventions for successful treatment of addiction. *Psychiatric Times*, *32*(4), 33.

Lee, C. S., Tavares, T., Popat-Jain, A., & Naab, P. (2015). Assessing treatment fidelity in a cultural adaptation of motivational interviewing. *Journal of Ethnicity in Substance Abuse*, *14*(2), 208–219. doi:10.1080/15332640.2014.973628

Madson, M. B., Schumacher, J. A., Baer, J. S., & Martino, S. (2016). Motivational interviewing for substance use: Mapping out the next generation of research. *Journal of Substance Abuse Treatment*, *65*, 1–5.

Maisto, S., Galizio, M., & Connors, G. (2014). *Drug use and abuse*. Retrieved from https://www.cengage.com/c/drug-use-and-abuse-7e-maisto/9781285455518PF/

Mandiberg, S. F., & Harris, R. L. (2014). Alcohol- and drug-free housing: A key strategy in breaking the cycle of addiction and recidivism. *McGeorge Law Review*, *46*, 843–895. Retrieved from http://digitalcommons.mcgeorge.edu/mlr/vol46/iss4/7

Marlatt, G. A., Curry, S., & Gordon, J. R. (1988). A longitudinal analysis of unaided smoking cessation. *Journal of Consulting and Clinical Psychology*, *56*(5), 715–720. doi:10.1037/0022-006X.56.5.715

Mastrorilli, M. E., Norton-Hawk, M., & Usher, N. (2015). Once a criminal always a criminal? A 15-year analysis of recidivism among female prisoners in Massachusetts. *Géneros: Multidisciplinary Journal of Gender Studies*, *3*(4), 784–805. doi:10.4471/generos.2015.1545

Miller, W. R., & Rollnick, S. (2014). The effectiveness and ineffectiveness of complex behavioral interventions: Impact of treatment fidelity. *Contemporary Clinical Trials*, *37*(2), 234–241.

Mitchell, M., & Jolley, J. (2001). *Research design explained* (4th ed). New York, NY: Harcourt.

Mitchell, O., Wilson, D., & MacKenzie, D. L. (2012). The effectiveness of incarceration-based drug treatment on criminal behavior: A systematic review. *Campbell Systematic Reviews*, *2012*, 1–75. doi:10.4073/csr.2012.1

Moore, K. E., Hacker, R. L., Oberleitner, L., & McKee, S. A. (2018). Reentry interventions that address substance use: A systematic review. *Psychological Services*, *17*(1), 93–101. doi:10.1037/ser0000293

Moyers, T. B. (2014). The relationship in motivational interviewing. *Psychology*, *51*(3), 358–363. doi:10.1037/a0036910

Nakamura, K., & Bucklen, K. B. (2014). Recidivism, redemption, and desistance: Understanding continuity and change in criminal offending and implications for interventions. *Sociology Compass*, *8*(4), 384–397. doi:10.1111/soc4.12150

National Institute of Health. (2018). *What is addiction?* Retrieved from https://easyread.drugabuse.gov/content/what-addiction

Netto, N. R., Carter, J. M., & Bonell, C. (2014). A systematic review of interventions that adopt the "good lives" approach to offender rehabilitation. *Journal of Offender Rehabilitation*, *53*(6), 403–432. doi:10.1080/10509674.2014.931746

Newton, D., Day, A., Giles, M., Wodak, J., Graffam, J., & Baldry, E. (2018). The impact of vocational education and training programs on recidivism: A systematic review of current experimental evidence. *International Journal of Offender Therapy and Comparative Criminology*, *62*(1), 187–207.

Oh, H., & Lee, C. (2016). Culture and motivational interviewing. *Patient Education and Counseling*, *99*(11), 1914–1919.

Olson, D. E., & Lurigio, A. J. (2014). The long-term effects of prison-based drug treatment and aftercare services on recidivism. *Journal of Offender Rehabilitation*, *53*(8), 600–619. doi:10.1080/10509674.2014.956965

Olson, D. E., Stalans, L. J., & Escobar, G. (2016). Comparing male and female prison releasees across risk factors and post prison recidivism. *Women & Criminal Justice*, *26*(2), 122–144.

Osilla, K. C., Watkins, K. E., D'Amico, E. J., McCullough, C. M., & Ober, A. J. (2018). Effects of motivational interviewing fidelity on substance use treatment engagement in primary care. *Journal of Substance Abuse Treatment*, *87*, 64–69. doi:10.1037/cou0000049

Pagano, R. R. (2009). *Understanding statistics in the behavioral sciences* (9th ed.). Belmont, CA: Wadsworth Cengage Learning.

Palermo, G. B. (2015). Offender recidivism: An international dilemma. *International Journal of Offender Therapy and Comparative Criminology*, *59*(2), 119–120. doi:10.1177/0306624X14566358

Peters, R. H., Wexler, H. K., & Lurigio, A. J. (2015). Co-occurring substance use and mental disorders in the criminal justice system: A new frontier of clinical practice and research. *Psychiatric Rehabilitation Journal, 38*(1), 1–6. doi:10.1037/prj0000135

Prochaska, J. O., DiClemente, C. C., & Norcross, J. C. (1992). In search of how people change: Applications to addictive behaviors. *American Psychologist*, *47*(9), 1102–1114. doi:10.3109/10884609309149692

Putwain, D., & Remedios, R. (2014). The scare tactic: Do fear appeals predict motivation

and exam scores? *School Psychology Quarterly*, *29*(4), 503–516. doi:10.1037/spq0000048

Ranes, B., Johnson, R., Nelson, L., & Slaymaker, V. (2017). The role of spirituality in treatment outcomes following a residential 12-step program. *Alcoholism Treatment Quarterly*, *35*(1), 16–33.

Reid, M. C., Eccleston, C., & Pillemer, K. (2015). Management of chronic pain in older adults. *BMJ*, *350*, h532-h532. doi:10.1136/bmj.h532

Rezansoff, S. N., Moniruzzaman, A., Gress, C., & Somers, J. M. (2013). Psychiatric diagnoses and multiyear criminal recidivism in a Canadian provincial offender population. *Psychology*, *Public Policy*, *and Law*, *19*(4), 443–453. doi:10.1037/a0033907

Saxena, P., Grella, C. E., & Messina, N. P. (2016). Continuing care and trauma in women offenders' substance use, psychiatric status, and self-efficacy outcomes. *Women & Criminal Justice*, *26*(2), 99–121.

Simoneau, H., Kamgang, E., Tremblay, J., Bertrand, K., Brochu, S., & Fleury, M. J. (2018). Efficacy of extensive intervention models for substance use disorders: A systematic review. *Drug and Alcohol Review*, *37*, S246–S262.

Sindicich, N., Mills, K. L., Barrett, E. L., Indig, D., Sunjic, S., Sannibale, C., . . . Najavits, L. M. (2014). Offenders as victims: post-traumatic stress disorder and substance use disorder among male prisoners. *The Journal of Forensic Psychiatry & Psychology*, *25*(1), 44–60. doi:10.1080/14789949.2013.877516

Substance Abuse and Mental Health Services Administration. (2016). *Key substance use and mental health indicators in the United States: Results from the 2015 National Survey on Drug Use and Health*. Retrieved from https://samhsa.gov/

Substance Abuse and Mental Health Services Administration. (2018). *Racial and ethnic minority populations*. Retrieved from https://samhsa.gov/

Sušić, E., Ničea, E., Gruber, E., & Guberina Korotaj, B. (2014). Bio-psycho-social model of treatment and rehabilitation of addicts during the conduction of safety measure of obligatory psychiatric treatment in prison hospital Zagreb. *Alcoholism and Psychiatry Research: Journal on Psychiatric Research and Addictions*, *50*(2), 93–109.

Swanson, H. L. (2018). *An empirical analysis of the effects of juvenile offender placement in adult facilities on recidivism rates* (Doctoral dissertation). Available from Graduate Theses and Dissertations Graduate Iowa State University Capstones database (UMI No. 16474).

Tabachnick, B. G., & Fidell, L. S. (2012). *Using multivariate statistics* (6th Ed.). Boston, MA: Pearson.

Transcend. (2015, November 19). *The relationship between one's level of education and addiction*. Retrieved from https://transcendrecoverycommunity.com/relationship-between-ones-level-education-addiction/

Trotter, C., McIvor, G., & Sheehan, R. (2012). The effectiveness of support and rehabilitation services for women offenders. *Australian Social Work*, *65*(1), 6–20. doi:10.1080/0312407X.2011.641985

Van Wormer, K., & Davis, D. (2012). *Addiction treatment*. Boston, MA: Cengage

Learning.

Wakeman, S. E., & Rich, J. D. (2015). Addiction treatment within US correctional facilities: Bridging the gap between current practice and evidence-based care. *Journal of Addictive Diseases*, *34*(2–3), 220–225. doi:10.1080/10550887.2015.1059217

Wehrman, M. M. (2010). Race, concentrated disadvantage, and recidivism: A test of interaction effects. *Journal of Criminal Justice*, *38*(4), 538–544.

Woodruff, S. I., Clapp, J. D., Eisenberg, K., McCabe, C., Hohman, M., Shillington, A. M., . . . Gareri, J. (2014). Randomized clinical trial of the effects of screening and brief intervention for illicit drug use: The life shift/shift gears study. *Addiction Science & Clinical Practice*, *9*(1), 8. doi:10.1186/1940-0640-9-8

Yesberg, J. A., Scanlan, J. M., Hanby, L. J., Serin, R. C., & Polaschek, D. L. (2015). Predicting women's recidivism: Validating a dynamic community-based 'gender-neutral' tool. *Probation Journal*, *62*(1), 33–48.