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Providers' Attitudes and Knowledge of Motivational Interviewing with Opioid Dependent Clients

Katrina Agneauelle Gary-Forte'
Walden University

Walden University

College of Social and Behavioral Sciences

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Katrina A. Gary-Fortè

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Review Committee
Dr. Jody Dill, Committee Chairperson, Psychology Faculty
Dr. Matthew Geyer, Committee Member, Psychology Faculty
Dr. Elisha Galaif, University Reviewer, Psychology Faculty

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

Walden University
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Abstract

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Proposal Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

General Psychology

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Abstract

Clients who suffer from opioid use disorders are at an increased risk of overdose and death. Researchers have indicated the need for studies that focus on ways to increase the use of evidenced-based practices (EBPs) in opioid use disorder treatments. Previous research suggests that motivational interviewing (MI) is an EBP that is effective in promoting behavioral change. The purpose of this study was to contribute to the research on MI by examining which variables predict mental health provider use of MI when treating opioid-dependent clients. The theory of planned behavior was the chosen theoretical framework for this study because it allowed an investigation of the mechanisms of action related to MI, and then test whether the MI attitudes and knowledge of mental health providers predicted the use of MI. A cross-sectional survey, with 71 participants, was used to collect data using Leffingwell's motivational interviewing knowledge and attitudes test. Results of the linear regression tests indicated that neither attitudes towards nor knowledge of MI were predictors of likelihood to use MI. The insight gained from this research may contribute to positive social change by aiding researchers in creating more effective MI training protocols, as well as contribute to the current scholarly literature that serves as the foundation for understanding what constitutes effective opioid treatment.

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Dedication

I dedicate this dissertation to, first of all, my Lord and Savior for providing me with the dedication, strength, and wisdom needed to complete this milestone in my life. To my husband, Quincy Gary-Fortè, for your patience and support even when times were very rough. To my son, Donovan Edward Gary-Fortè, Mommy is finishing this journey a couple of weeks before you are due to arrive in this world. You have given her the needed push, and motivation to finish this race, Mommy loves you!

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Chapter 1: Introduction to the Study

In the United States, 600,000 individuals met the diagnostic criteria for opioid use disorder in 2015 (Substance Abuse and Mental Health Services Administration, 2017). Americans consume close to 400,000 pounds of opioids per year (Behavioral Health Trends in the United States, 2014). Overdosing on a narcotic is one of the leading causes of accidental death in the United States and is a major public health concern (Centers for Disease Control and Prevention, 2014). Thus, there is a need to increase the effectiveness of treatment options to combat this epidemic.

One promising evidenced-based practice (EBP) used in treating opioid dependency is motivational interviewing (MI). Miller and Rollnick (2013) developed MI as a person-centered counseling technique to elicit behavioral change. Since its inception, MI has been used across a variety of clinical problems. In MI, mental health providers use a set of counseling techniques to help clients develop action plans, resolve ambivalence, and implement change (Miller & Rollnick, 2013). Miller and Rollnick (2013) assert that the skill level and the attitudes of mental health providers regarding MI contribute to how successfully MI is implemented in the therapeutic setting. Thus, understanding mental health providers' attitudes and knowledge of MI may assist in developing more effective MI training protocols geared toward encouraging the use of MI in opioid dependency treatment. The results of this study may contribute to positive social change by allowing for the development of more effective training for clinicians who work with opioid-dependent clients as well as better treatment options for suffers of opioid use disorders.

Chapter 1 includes an overview of the study, background, problem statement, and purpose. This chapter also includes the research questions and hypotheses, theoretical foundation, nature of the study, and definitions. In addition, the assumptions, scope and delimitations, limitations, the significance of the study, and a summary are provided.

Background

Opioid dependence is a complex medical and psychological problem that health care professionals must address (National Institute on Drug Abuse, 2014). Individuals who take prescription opioid medication for nonprescribed reasons are at risk for abuse, misuse, overdose, and death (New Data on Marijuana Laws, Opioid Use, and Opioid Overdose, 2018). In response, there has been significant progress and expansion in the development of EBPs to combat the complexities of substance-use disorders (Jhanjee, 2014). Research suggests cognitive behavioral therapy (CBT), MI, and relapse prevention are effective in treating many substance-use disorders (Can et al., 2016).

MI is a set of counseling techniques and strategies that mental health providers employ to help clients develop personalized action plans to implement change (Miller & Rollnick, 2013). When correctly implemented, MI has proven to be more effective (10%–20%) compared to no treatment, and equal to other viable treatment options across a variety of presenting problems (Ayres et al., 2014; Chang, Compton, Almeter, & Fox, 2014; Li, Zhu, Tse, Tse & Wong, 2016). MI is most effective when combined with other psychosocial interventions (Jhanjee, 2014); nevertheless, MI may be offered either as a stand-alone treatment or in combination with other treatments. Mental health providers' knowledge of and attitudes regarding MI are important aspects to study to create more

effective training programs and increase positive therapeutic outcomes (Can et al., 2016). A large part of effectively implementing MI is dependent on the attitudes and knowledge of the mental health provider (Can et al., 2016).

A mental health provider's decision to use MI with a client is strongly influenced by the skill level and characteristics (attitudes, training, and knowledge) of the provider (Hagger & Hardcastle, 2014; Hall, Staiger, Simpson, Best, & Lubman, 2015). Research on MI has suggested the attitude of providers, rather than their knowledge of theories and techniques, facilitates behavioral change in clients (Csillik, 2013; Hall et al., 2015; McGovern, Fox, Xie, & Drake, 2004). Luciano et al. (2014) found that providers' attitudes are the catalyst for providing clients with a therapeutic atmosphere that invites change. In contrast, Huebner and Tonigan (2007) and Magill et al. (2014) were unable to determine which providers' attitudes lead to these positive outcomes.

Aletraris, Shelton, and Roman (2015b) studied providers' attitudes toward the use of contingency management (the application of operant conditioning to change behavior) versus MI and CBT in the therapeutic setting, as well as the significance those attitudes played in influencing therapeutic outcomes. They found that clinicians viewed MI and CBT as more acceptable interventions than contingency management. Aletraris, Edmond, Paino, Fields, and Roman (2015a) examined counselors' knowledge of and attitudes toward the use of Methadone and Buprenorphine for opioid-use disorder. The results indicated that counselors did not perceive themselves as sufficiently knowledgeable about opioid antagonist therapies, which influenced their receptiveness toward using such treatments.

Abraham, Rieckmann, McNulty, Kovas, and Roman (2011) examined counselors' attitudes and behaviors toward using Naltrexone (an opioid antagonist that reduces cravings for opioids) to treat opioid-use disorders. Abraham et al. (2011) found the organizational context, in which the counselors were employed, played a larger part in their receptiveness toward Naltrexone treatment than did their attitudes and behaviors. Hall et al. (2015) found that the personal attributes and attitudes of clinicians significantly influenced their implementation of MI after they received training in the "spirit" of MI. Results indicated that despite such training, clinicians do not sustain a change in practice unless follow-up training is provided on a regular basis, adherence is strongly defined, and the attributes and attitudes of the clinicians are considered.

Previous researchers have studied the attitudes, skills, and knowledge of mental health providers who use MI to treat clients with various disorders (Can et al., 2016; Magill et al., 2014; Parrilla, 2016). Additionally, researchers have studied these factors in certain substance use disorders. To date, however, there have been no studies examining which factors lead a provider to use MI in opioid use disorder treatment, nor how such providers view this treatment intervention with the opioid-dependent population. These inconclusive findings have suggested a need for further exploration of the impact mental health providers' knowledge of and attitudes toward MI have on their likelihood to use the treatment with opioid-dependent clients.

Problem Statement

Despite previous attempts to regulate access to opioids and current treatment methods, overdosing by means of opioids remains one of the leading causes of accidental

death in the United States (New Data on Marijuana Laws, Opioid Use, and Opioid Overdose, 2018). Previous research has suggested CBT, MI, and relapse prevention can be effective EBPs across many drugs of abuse (Can et al., 2016). MI has been shown to be an effective treatment option in substance use disorders (Ayres et al., 2014; Chang et al., 2014; Li et al., 2016). Research on the effectiveness of MI in certain substance use disorders is abundant, and researchers have indicated that the way MI is implemented is affected by the attitudes and skill level of mental health providers (Gantiva, Guerra, & Vila, 2015; Miller & Rollnick, 2013). Mental health providers' attitudes toward and knowledge of MI are important aspects to study to create effective training programs; however, there is a gap in the literature regarding mental health providers' attitudes and knowledge of MI with opioid-dependent clients (Can et al., 2016). The way MI techniques are incorporated into the therapeutic setting is influenced by the knowledge and attitude of the provider; therefore, measuring mental health providers' attitude toward and knowledge of MI are important to develop effective training for mental health providers who treat opioid use disorders. The results of this study may contribute to positive social change by contributing to the availability of care, a variety of treatment options, and interventions that are more effective for those with opioid use disorders.

Purpose of the Study

The purpose of this quantitative study is to contribute to the literature that identifies which variables increase mental health provider usage of MI when treating opioid-dependent clients (Jhanjee, 2014; National Institute on Drug Abuse, 2014). As it stands, research is limited on the effectiveness of training for mental health providers

who use MI to treat opioid-dependent clients. This study is designed to examine whether attitudes and knowledge of mental health providers regarding MI predict the likelihood of using the MI approach when treating opioid-dependent clients. I will use a cross-sectional survey to collect data through the Motivational Interviewing Knowledge and Attitude Test (MIKAT). The MIKAT measures the variables of clinicians' knowledge of MI and attitudes toward MI. The two predictor variables are attitudes toward MI and knowledge about MI. The criterion variable is the likelihood of mental health providers to use MI with clients who suffer from opioid use disorder, which will be determined by self-report.

Research Questions and Hypotheses

The research questions and hypotheses follow:

Research Question 1: Are mental health providers' attitudes about MI a significant predictor of using MI with opioid-dependent clients, as measured by the Motivational Interviewing Knowledge and Attitudes Test (MIKAT)?

$H_0$1: Mental health providers' attitudes about MI do not significantly predict the likelihood of using MI to treat opioid dependency.

H_a1: Mental health providers' attitudes about MI do significantly predict the likelihood of using MI to treat opioid dependency.

Research Question 2: Is mental health providers' knowledge of MI a significant predictor of using MI with opioid-dependent clients, as measured by the Motivational Interviewing Knowledge and Attitudes Test (MIKAT)?

$H_0$2: Mental health providers' knowledge of MI does not significantly predict the likelihood of using MI to treat opioid dependency.

H_a2: Mental health providers' knowledge of MI does significantly predict the likelihood of using MI to treat opioid dependency.

Identified covariates such as gender, age, number of years practicing, and previous use of MI, were addressed using linear regression (Pallant, 2013).

Theoretical Framework

The theoretical framework that will guide my research is the theory of planned behavior (Ajzen, 1985). This approach shares a respect for the autonomy of the provider, much like the principles of MI (Miller & Rollnick, 2013; Wood, Wood & Boyd, 2015). This approach, an extension of Ajzen and Fishbein's 1980 theory of reasoned action (TRA), was created to improve the predictive power of the theory (Ajzen, 1985). TRA considers the person, the attitudes toward a behavior, and the subjective norms of influential people and/or groups that could influence those attitudes and beliefs (Yzer, 2017). TPB includes all components of TRA but adds the concept of perceived behavioral control (PBC; Ajzen, 1991). Unlike its predecessor, the TPB assumes that the primary drive behind behavior is PBC. PBC serves as the moderator between behavior and intention, whether an individual carries out the behavior is based on their belief that performing the behavior will result in a specific outcome (Glanz, Rimer, & Viswanath, 2015). Traditionally, mental health providers choose to employ specific interventions and/or techniques in treatment based on the belief that doing so will lead to a positive therapeutic outcome for the client with whom they are working (Gantiva et al., 2015).

This framework is appropriate because of its focus on the attitudes and knowledge that lead to action, as well as the perceived behavioral control an individual has over that

action. This framework will serve as the lens through which I examine whether the attitudes and knowledge of mental health providers influence their decision to use MI with opioid-dependent clients. Detailed information on the theoretical framework of this study is provided in Chapter 2.

Nature of the Study

The aim of this quantitative study is to advance a broader understanding of the impact mental health providers' attitudes and knowledge of MI have on their use of MI with opioid-dependent clients. I will use regression to investigate the relationship between attitudes about and knowledge of MI and mental health providers' intent to use MI with opioid-dependent clients. A cross-sectional survey design is appropriate for investigating the relationship between the predictor variables and the criterion variable because it is a cost-effective and efficient way to collect data in a short timeframe (Setia, 2016). In this study, attitude about MI and knowledge of MI are the predictor variables, as measured by the MIKAT (Leffingwell, 2006; see Appendix B). The criterion variable is the likelihood of mental health providers to use MI with opioid-dependent clients, as measured by self-reporting questionnaires.

The target population includes mental health providers who work with opioid-dependent clients. These mental health providers completed the MIKAT via Survey Monkey. The MIKAT measures attitudes and knowledge of MI and is divided into two separate components with separate scores for both attitudes and knowledge (Leffingwell, 2006). The MIKAT has been used to evaluate training programs and providers who use MI (Doran, Hohman, & Koutsenok, 2011; Leffingwell, 2006). This study will employ

regression analysis to test whether providers' attitudes about MI and knowledge of MI predict their usage of MI with opioid-dependent clients. It is best practice to use an effect size that is neither too small nor too large when employing regression in a study, to minimize the probability of Type 1 error, which may lead to rejecting the null hypothesis in error, and Type 2 error, which may lead to not rejecting a false hypothesis. For this reason, this study will use a medium effect size of .30 (Maxwell, Delaney, & Kelley, 2018). Using a medium effect size will improve the chances of decreasing the probability of type one and two errors from occurring while increasing the likelihood of determining whether actual statistical significance exists between the variables (Cohen, Manion, & Morrison, 2018; Linneman, 2018; Maxwell et al., 2018). Chapter 3 will provide a more in-depth analysis of the instrument and methodology used in this study.

Definitions

These terms will be used throughout this dissertation and are defined as follows:

Ambivalence: Uncertain feelings regarding a change in behavior (Miller & Rollnick, 1995, 2013).

Attitudes toward MI: Beliefs that are either consistent or not with the MI approach (Leffingwell, 2006).

Clients: Individuals in this study who are receiving psychological treatment for opioid use disorder.

Opioid Use Disorder: The *DSM-5* (2013) defines opioid use disorder as a "problematic pattern of opioid use, such that leads to clinical impairment or distress occurring within a 12-month period" (p. 256).

Knowledge of MI: The ability to accurately identify MI techniques and approaches (Leffingwell, 2006).

Likelihood to use MI: The probability, as measured by self-report, a mental health provider will employ the MI approach in treatment (Leffingwell, 2006).

Mental health provider: A practitioner trained to work with patients suffering from psychological and emotional disorders (Corey, 2015). The various types of mental health providers include psychiatrists, psychologists, social workers, licensed chemical dependency counselors, and licensed professional counselors; for the current study, mental health providers will refer specifically those who have experience treating opioid-dependent clients.

Motivational interviewing (MI): A person-centered counseling technique developed by Miller and Rollnick (1995) to enhance behavioral changes in clients.

Spirit of MI: A providers' style of employing MI techniques when implemented in the therapeutic setting (Miller & Rollnick, 1995, 2013).

Assumptions

I assume that participants will interpret all questions on the questionnaire accurately, will understand all questions being asked, and will respond accordingly. I also assume the participants will complete their questionnaires completely and on a voluntary basis. I assume the participants completing the survey meet the basic competency requirements to treat opioid-dependent clients. These assumptions are necessary to increase the accuracy and relevancy of this study.

Scope and Delimitations

This study focused on MI attitudes and knowledge of mental health providers who work with clients with opioid-use disorders. The study was further limited to mental health providers who work with opioid-dependent clients and were members of the Facebook group, Recovery to Practice. Limiting participants to members of Recovery to Practice allowed me to reach the target population in a timely manner, and decreased costs associated with this study**.** The scope of this study included three variables: attitudes toward MI, knowledge of MI, and likelihood to use MI. Other variables outside of knowledge and attitudes toward MI were not included in this study because they were not relevant to this study. Therefore, the results cannot be generalized beyond mental health providers who have provided opioid treatment and are familiar with MI techniques.

Limitations

This study has several limitations. Because participants did not complete the survey in my presence, I was unable to clarify survey questions that may have confused the participants. To help overcome this limitation, I provided a number and e-mail address to allow participants to contact me if necessary. Another limitation was nonresponse bias. Some potential participants did not complete and return the study, which might have influenced the outcome of the study (Maxwell et al., 2018). To mitigate this limitation, participants were sent a reminder post once I received confirmation they had received their questionnaire. Another limitation was identified covariates associated with the variables of interest. In order to control for covariates, it is important for a researcher to collect data on all previously identified covariates (Pallant,

2013). To minimize this limitation, covariates were addressed by using linear regression. Linear regression allowed me to examine the associations between multiple covariates, eliminate covariates, and isolate the relationship of interest (see Pallant, 2013).

Other limitations may be directly related to threats to validity, which can be the result of using specific methods to measure attitudes and beliefs. Some of these threats include the sabotage effect, which involves participants providing disingenuous attitudes, and refusal bias, which is the refusal of participants to provide responses because they fear that unacceptable or controversial attitudes and beliefs may be revealed and social desirability bias. Research bias and selection bias are other limitations to this study, which may have affected the generalizability of this study. To minimize these limitations, I collected no identifying information on individual questionnaires, and all responses remained confidential and anonymous.

Significance of the Study

This study is designed to measure the attitudes about and knowledge of MI amongst mental health providers who provide therapeutic services to opioid-dependent clients. The results may add to the scholarly literature and contribute to positive social change by improving scholars' and practitioners' understanding of the role providers' attitudes about and knowledge of MI have on providers' usage of MI. The findings may contribute to the knowledge base for developing effective interventions that promote behavioral change in opioid-dependent clients. McGovern et al. (2004) noted that the characteristics and attitudes of providers are determining factors in whether they are receptive to adopting MI and other EBPs in the therapeutic setting. This study is designed

to provide more insight into the role providers' attitudes and knowledge of MI have on their use of MI with opioid-dependent clients. The results of this study may also contribute to the development of more effective MI training protocols for mental health providers working with opioid-dependent clients by allowing for a better understanding of what constitutes effective opioid dependency treatment and how attitudes and knowledge impact the use of MI in the therapeutic setting. This study may contribute to positive social change by bringing to light the need to increase MI knowledge and training protocols as a way of encouraging behavioral changes to those with opioid use disorders.

Summary

Researchers have found a need to increase treatment effectiveness in opioid-use disorders (Can et al., 2016). MI is an EBP that has been successful with a variety of clinical problems, including opioid dependency, medication adherence, eating disorders, mental health problems, and chronic disease (Csillik, 2013; Macdonald, Hibbs, Corfield, & Treasure, 2012; Palacio et al., 2014). According to the research, mental health providers' attitudes about and knowledge of MI influence treatment outcomes in the therapeutic setting. Although researchers have discovered potential benefits to using MI in the therapeutic setting, there has been little research on the efficacy of using MI with opioid-dependent clients. Identifying the relationship attitudes about MI and knowledge of MI share with providers' use of MI with opioid-dependent clients may offer a better understanding of how to tailor training to encourage the use of MI in a therapeutic setting.

Chapter 2 provides the literature search strategy and the theoretical foundation of the study. I also provide an exhaustive review of the literature on MI and an analysis of the research on the knowledge and attitudes of clinicians regarding MI. Finally, the summary and conclusions will be presented.

Chapter 2: Literature Review

Introduction

Overdosing on a narcotic remains one of the leading causes of accidental death in the United States and has become a significant public health concern (Centers for Disease Control and Prevention, 2014). In the United States, about 1.9 million Americans are dependent on opioids, and more than 130 Americans die from an opioid overdose each day (Behavioral Health Trends in the United States, 2014; Bradbury, 2019; National Institute on Drug Abuse, 2014). The current literature mainly focuses on pre-modern treatment options (Jhanjee, 2014; U.S. Department of Health and Human Services, Food and Drug Administration, 2015; U.S. National Library of Medicine, 2013), which have failed to produce satisfactory long-term results and decrease opioid dependency, evident by an annual increase in opioid-related death (American Society of Addiction Medicine, 2016; Behavioral Health Trends in the United States, 2014). With this massive increase in opioid dependency, more clinicians are necessary to combat this epidemic.

Mental health providers have sought to understand substance use disorders and prevent such diseases from overtaking individuals suffering from them. MI is an EBP developed to assist with behavioral change and the resolution of ambivalence when considering a change. Recent studies have given much attention to MI because of the promising treatment outcomes it has yielded (Ayres et al., 2014; Chang et al., 2014; Fitzsimmons & Barrowclough, 2019; Li et al., 2016; Miller & Rollnick, 2013; Riper et al., 2014). The attitudes, training, and beliefs of mental health providers strongly influence their use of MI with a client (Hall et al., 2015; Miller & Rollnick, 2013) as well

as contribute to more favorable treatment outcomes (Corey, 2015; Csillik, 2013; Mesters, Keulen, Vries, & Brug, 2017; Patterson, 1964).

Indeed, the attitude of therapists, rather than their knowledge of theories and techniques, facilitates behavioral change in clients (Csillik, 2013). Focusing on which characteristics play a significant role in increasing positive treatment outcomes may allow mental health providers to more efficiently implement MI into the therapeutic setting. Corey (2015) stated that the quality of a client-therapist relationship is the prime determinant of the outcomes in the therapeutic process. Patterson (1964) argued that the attitude of the mental health provider was the catalyst to provide the client with the necessary corrective atmosphere. Mesters et al. (2017) concluded that human dimensions are more powerful determinants of the outcomes of therapeutic effectiveness than the theories or techniques implemented.

Previous researchers have studied the attitudes, skills, and knowledge of the professionals who use MI to treat clients with various disorders (Can et al., 2016; Magill et al., 2014; Parrilla, 2016). To date, however, there have been no studies examining which factors lead to a provider using MI in treating opioid use disorder, or how such clinicians view this treatment with the opioid-dependent population. The purpose of this quantitative study is to contribute to the literature that identifies which variables increase mental health provider usage of MI when treating opioid-dependent clients (Jhanjee, 2014; National Institute on Drug Abuse, 2014).

This chapter presents the literature search strategy, the theoretical foundation of the study and the relevant literature on MI. The review then includes an analysis of the

research on the knowledge and attitudes of clinicians about MI. The chapter ends with a summary and my conclusions.

Literature Search Strategy

The literature search was focused on current and classical literature as well as peer-related articles that were digitally retrieved from PsychArticles, ProQuest Dissertations & Theses Global, Google Scholar, ScholarWorks, and PsychInfo databases predominantly dated between 2011 and 2019. I also examined relevant organizational websites such as the National Survey on Drug Use and Health and the National Institute on Drug Abuse. The following keyword search was performed: *motivational interviewing, motivational interviewing and opioid use disorder, motivational interviewing and substance abuse, motivational interviewing on clinical problems, the theory of reasoned action, the theory of planned behavior and motivational interviewing, the theory of planned behavior, attitudes, knowledge, perceived behavior control, clinicians' attitudes and motivational interviewing, Ajzen, clinicians' knowledge of motivational interviewing, clinical skill sets in motivational interviewing, mental health providers' attitudes towards motivational interviewing, mental health providers' knowledge, challenges of motivational interviewing, spirit of motivational interviewing, 12-step program, Alcohol Anonymous, opioid treatments, Narcotics Anonymous, Methadone, Buprenorphine, Suboxone, Subutex, opioid use disorder,* and *substance use disorders, withdrawal symptoms, overdose,* and *DSM-5*.

Theoretical Foundation

Theory of Planned Behavior (TPB)

Ajzen's theory of planned behavior (TPB; 1985) focuses on the mechanisms behind why mental health providers choose whether to use MI in opioid-use treatment; TBP focuses on the attitudes, knowledge, and autonomy of the mental health provider. The TBP is an extension of Fishbein and Ajzen's 1980 theory of reasoned action (TRA), which is utilized to improve the predictive power of the theory (Ajzen, 1991). The TRA was initially designed to explain the relationship between attitude and behavior, but it failed to consider behavior that people have little control over such as a successful treatment outcome, client-therapist relationship, providers' beliefs, rapport, and client willingness to participate in treatment (Ajzen & Fishbein, 1980). In an attempt to consider these behaviors, Ajzen developed TPB, which examines how an individual will behave based on his or her attitude, subjective norms, and perceived behavioral control (PBC) (Steinmetz, Knappstein, Ajzen, Schmidt, & Kabst, 2016). Ajzen (1991) states that an individual is more likely to engage in a specific behavior if their attitude toward the behavior is more favorable. If an individual views the outcome of performing a behavior as favorable, he/she will have a positive attitude toward that behavior. Subjective norms are influences the decision-maker believes to be of importance to him/her (Ajzen, 1991). The greater the pressure an individual feels from subjective norms, the more likely they are to perform a specific behavior. Ajzen (1991) defines PBC as the faith one has in his/her ability to perform a specific behavior. The greater the PBC, the more likely a specific behavior will be performed (Ajzen & Fishbein, 1980). TBP suggests that some

individuals do not possess the necessary resources, control, nor knowledge, to perform a behavior; therefore, PBC can have a direct influence on behavior (Steinmetz et al., 2016).

Research suggests that general motives only influence intentions when mediated by attitude, subjective norms and PBC from the TPB (Arnautovska, Fleig, Ocallaghan, & Hamilton, 2018). The TPB assumes that the primary driver behind behavior is perceived behavioral control, which serves as the moderator between behavior and intention (Glanz et al., 2015). Whether an individual carries out an action is based on their belief that performing that behavior will result in a specific outcome.

Rationale for the Choice of This Theory

The TPB has been a chosen framework for studying behavioral change interventions, explaining behavior, and predicting behavior (Steinmetz et al., 2016). Several studies have validated the TPB's ability to predict behavior and explain the key determinants of specific behaviors (Akbar, Anderson, & Gallegos, 2015; Arnautovska, et al., 2018; Kothe & Mullan, 2014; Overstreet, Cegielski, & Hall, 2013; Steinmetz et al., 2016; Tyson, Covey, & Rosenthal, 2014). Steinmetz et al. (2016) suggested that examining behavioral change methods using a behavioral change theory allows for influences of action to be investigated, in this case, whether a provider chooses to use MI techniques to treat opioid-dependent clients.

The TBP has been recently used as a framework to examine behavioral change interventions in nutrition (Akbar et al., 2015; Lavoie et al., 2014); sexual behavior (Tyson et al., 2014); public health (Kothe & Mullan, 2014); alcohol consumption (Armitage, Rowe, Arden, & Harris, 2014); and smoking Fingrut, Stewart, & Cheung, 2016). The

usefulness of this theory to predict behavior has been supported by research in attitudes toward donating blood (Conner, Godin, Sheeran, & Germain, 2013); the decision to participate in preventive care (Overstreet et al., 2013); the decision to undergo hormone replacement therapy (HRT; Schaller & Malhotra, 2015); and an individual's intention to practice safe-sex (Tyson et al., 2014). Arnautovska et al. (2018) used TPB to examine how general motives influence an individuals' intention to engage in physical activities. The results of the study indicated that motives were considered, along with attitude and PBC, when deciding whether to engage in physical activities. McDermott et al. (2015) examined an individuals' intention to eat healthy using TBP. The results of the study indicated that attitude, subjective norms, and perceived behavioral control were all influential factors in predicting healthy eating. Murnaghan, Blanchard, Rodgers, Larosa, Macquarrie, Maclellan, and Gray (2010) found that previous knowledge and perceived behavioral control significantly influenced teenagers' intention not to engage in smoking. Norman and Smith (1995), however, found that past behavior was the only significant predictor of an individual's health-related behavior.

A strength of this framework is that it can be applied to various behavioral change interventions when addressing substance use, sexual behavior, and other health-related behavior (Conner et al., 2013; Overstreet et al., 2013; Sniehotta, Presseau, & Araújo-Soares, 2014; Steinmetz et al., 2016; Tyson et al., 2014). The TPB has not been used to assess mental health providers' behavior toward using MI with clients who suffer from opioid use disorder. Mental health professionals must have a solid understanding of MI principles before using them in the therapeutic setting (Corey, 2015). Providers must

possess certain skill sets and knowledge about MI because of the complexities of certain content-related MI techniques (Hardcastle et al., 2015). Singh (2018) emphasized the need for congruence in the level of knowledge of clinicians who use MI, which has been linked to their receptiveness of using such treatment. Providers are then able to use acquired knowledge of MI to make a decision on whether implementing MI would be beneficial in promoting behavioral change. Research has shown that if a provider is more knowledgeable about a theory or technique, they are more likely to implement that technique in the therapeutic setting (Malikiosi-Loizos, 2013). If a provider is inadequately trained or does not feel knowledgeable enough to perform MI techniques, they may stray away from implementing such techniques in the therapeutic setting, despite favorable attitudes (Aletraris et al., 2015a). Recently, Aletraris et al., (2015a) examined counselors' knowledge of and attitudes toward the use of Methadone and Buprenorphine for opioid-use disorder. The counselors were not receptive to using these treatments because they did not perceive themselves as knowledgeable about opioid antagonist therapies.

When deciding whether to use MI in treatment, clinicians' knowledge and attitudes associated with MI often become accessible to conscious awareness. This awareness causes one to deliberate and influences one's decision. The TPB suggests that dormant intentions accessible in memory can be brought to conscious awareness and measured via means of a self-report (Haggard & Eitam, 2015). The above findings substantiate the usefulness of using TPB as the framework theory in this study.

This framework will serve as the lens through which I will explore how mental health providers' attitudes about, and knowledge of MI influence their decision to use MI with opioid-dependent clients. The current study uses the TPB to investigate the mechanisms of action related to MI, and then test whether the attitudes and knowledge of mental health providers toward MI predict the use of MI in opioid dependency treatment.

Literature Review Related to Key Variables and/or Concepts

Substance-Related and Addictive Disorders

The number of Americans with substance use disorders (SUDs) has continuously increased in recent years, inflicting grave consequences on the individuals who are using and their families, communities, and society (Centers for Disease Control and Prevention, 2014). Drug abuse can lead to crime, severe health consequences, child abuse and neglect, and death (Rigg & Monnat, 2015). These consequences have led to calls for improved understanding of these disorders, their effects, and suitable treatment options.

SUDs are classified as maladaptive patterns leading to clinically significant impairment or distress for at least 12 months (APA, 2013). The DSM-5 categorized such SUDs based on the severity of the disorder as mild, moderate, or severe, determined by the assessment of mental health professionals (APA, 2013). 50.5% of individuals obtain opioids from family members or friends, 22.1% of individuals obtain opioids from a physician, and others will turn to the black market to obtain opioids (Bradbury, 2019). Overdosing on a drug is the number one cause of death in the United States, with six out of 10 deaths involving the use of an opioid (Centers for Disease Control and Prevention, 2014). Thus, understanding opioid use disorder has become a top priority for mental

health providers, and determining their knowledge and attitudes about using MI as an intervention method may contribute to the scholarly literature on opioid use disorder treatment.

Opioid Use Disorder

The devastation that opioid-related deaths have caused can be seen in many aspects of society. Katz (2017) reported that up to 65,000 individuals die in the United States from an opioid overdose annually. Opioid-related deaths are close to the number of deaths caused by automobile accidents nationally (Rudd, Aleshire, Zibbell, & Gladden, 2016). Opioid dependency costs have become a financial and emotional burden, affecting everyone from the health profession to family members of the opioid-dependent individual (Substance Abuse and Mental Health Services Administration [SAMHSA], 2017). Considering these consequences, understanding the causes of opioid use disorder and finding an effective treatment for this disorder is crucial.

Opioids are classified as analgesics that include naturally occurring alkaloids (e.g., morphine), semisynthetic (e.g., buprenorphine), and synthetic (e.g., methadone and meperidine) compounds (Gray, 2016). Opioids mimic the effects of the production of endorphins in the brain; individuals feel a sense of well-being and pain relief (Wood et al., 2015). When taken correctly, opioids have been successful in reducing pain, but concern arises when individuals do not take opioids as prescribed. Many people overuse opioids because of the false sense of well-being they create, and the pain-reducing effect (Pacula, 2017). Opioid intoxication occurs when an individual takes too much of it, but not enough to result in an overdose of an opioid. Such intoxication can result in impaired

functioning, drowsiness, and coma, which poses a risk to the individual as well as to others (Gray, 2016). There is a need to educate individuals more effectively on the use and purpose of opioids because of the high risk of opioid intoxication and overdose associated with taking opioids (Klapheke & Pasarica, 2017).

To educate individuals more effectively, mental health providers need to have the correct understanding of the purpose and use of opioids themselves. Successful opioid therapy occurs when the reduction of pain is achieved and overall functioning remains intact (Chou et al., 2015; Gagnon, Stanos, van der Ende, Rader, & Harden, 2013). Regular use of opioids eventually leads to a suppression of the body's ability to produce endorphins, leading to a breakdown in the body's natural pain management mechanism, and the development of a psychological dependency (Cicero & Ellis, 2017).

Opioid use disorder is a chronic disease wherein individuals continue to use the product despite the negative consequences (Katz, 2017). The *DSM-5* (2013) defines opioid use disorder as a "problematic pattern of opioid use, such that leads to clinical impairment or distress occurring within a 12-month period" (p. 256). Opioid use disorder is a complex medical issue that requires extensive professional help to overcome (Gray, 2016). Better understanding the complexity of this disease allows providers to better educate and treat individuals who suffer from these disorders (Glanz et al., 2015).

Traditional Treatment Approaches for Opioid Use Disorders

Traditional Treatments

Several traditional treatments are available for opioid use disorders. Amongst these are: medication replacement therapy, contingency management, 12-step programs,

and MI (Csillik, 2013; Granerud & Toft, 2015; Macdonald et al., 2012; Miller & Rollnick, 2013; Palacio et al., 2014; Whelan & Remski, 2012). Many who suffer from these disorders require multiple treatment attempts because substance use disorders are often chronic and treatment-resistant (SAMHSA, 2017). Even with numerous treatment options existing, those who willingly participate in treatment can face barriers. The following section is an overview of selected treatment approaches as well as the pros and cons of each option.

Replacement therapy. Many individuals turn to replacement therapies to avoid the physiological and psychological effects of withdrawals, or after many unsuccessful opioid cessation attempts. The Food and Drug Administration (FDA) approved medication replacement therapies for opioid treatment more than 50 years ago. Researchers have suggested that these replacement therapies have been a useful treatment option for improving the quality of life for the opioid-dependent individual (Chang et al., 2014). Two of the most common replacement therapies to treat opioid use disorders treatments are methadone and buprenorphine (SAMHSA, 2017; Whelan & Remski, 2012). Methadone and buprenorphine are milder forms of opioids that are provided to the client under the care of a trained professional (Whelan & Remski, 2012). Clients are typically provided a prescription for these milder opioids to help reduce both cravings and withdrawal symptoms from the cessation of opioid use.

Methadone, a synthetically made analgesic commonly used for pain management, is metabolized in the liver. When it is consumed in high doses it can be toxic (Lussier, 2013). Unlike methadone, buprenorphine is a partial opioid antagonist that has less

potential for abuse and side effects (Daubresse, Saloner, Pollack, & Alexander, 2017). Although buprenorphine therapy has shown some effectiveness while treating opioid use disorder, it has not been as successful as methadone therapy (Whelan & Remski, 2012). Despite these findings, buprenorphine treatment is still a widely used replacement therapy in opioid use treatment (Tran, Griffin, Stone, Vest, & Todd, 2017).

These medications require constant care from a trained professional, and the potential to misuse these prescriptions remain high. Methadone and buprenorphine have mixed results when it comes to their effectiveness to treat opioid use disorder long-term (Whelan & Remski, 2012), evidenced by the number of overdoses and other health effects associated with using these replacement therapies (Chou et al., 2015). Granerud and Toft (2015) studied clients' perceptions of using opioid maintenance treatment as their only dependency treatment option. These clients were more successful than those who did not use this method, but they were very dissatisfied with the overall process and the rules they had to abide by (Granerud & Toft, 2015).

Even though researchers have had mixed results, methadone and buprenorphine remain amongst the top treatment therapies used in opioid use disorder treatment, as they provide some benefits to those who use them. Some of these benefits include a lower risk of death than other treatments, reduction of cravings, and pain management (Smirnov & Kemp, 2012; Whelan & Remski, 2012). Those who stay on methadone and buprenorphine replacement therapy are at a lower risk of death than those who choose not to (Whelan & Remski, 2012). Finding a suitable treatment to minimize the number of

opioid-related deaths remains a necessity because there is a high risk of overdose (Rudd et al., 2016).

12-step programs. A more conventional treatment approach in treating opioid use disorder is 12-step programs. Alcoholics Anonymous (AA) is the oldest and most publicized 12-step group. Developed in 1935, AA now has over 1.3 million members (AA General Service Conference, 2017). AA's counterpart Narcotics Anonymous (NA) holds more than 67,000 weekly meetings and is the largest 12-step program that focuses on drug use (Current Membership of the International Narcotics Control Board, 2015). Despite the long history of 12-step programs, Filges, Nielsen, and Jørgensen (2014) found that the programs are neither better nor worse than other interventions in treating drug dependency. Connors, DiClemente, Velasquez, and Donovan (2016) reported 80% of the individuals who attend such programs relapse within six months of attendance. Donovan et al. (2013) found a higher rate of abstinence amongst individuals who attended 12-step meetings in conjunction with some ongoing treatment.

Ouimette, Finney, and Moos (1997) found evidence to the contrary. They found that individuals who attend 12-steps meetings have higher rates of abstinence compared to individuals who do not attend such meetings (Donovan et al., 2013). In the Ouimette study, participants (N = 3,018) were separated into three different substance use treatment regimens to determine which regimen was the most effective. The three used regimens included 12-step programs, cognitive behavioral therapy, and a combination of both 12-step programs and cognitive behavioral therapy. There were no significant changes found across regimens; they were all equally effective in decreasing substance use (Ouimette et

al., 1997). With an opioid crisis this vast, more evidence-based treatment options are needed that lead to positive outcomes.

Contingency management. One evidence-based practice that has been implemented in substance use treatment is contingency management (CM) in which providers focus on using reward systems to help clients change problem behavior (Roll & Fruci, 2014). Contingency management is often used by itself or with another EBP when treating substance use disorder. Rewards are provided to the client for the performance of desirable behavior, such as refraining from alcohol or attending sessions, to reinforce the behavior (Alessi, 2013). These rewards are used to supplement the rewards the client receives from his or her alcohol or drug use in addiction treatment. Much controversy surrounds the use of CM in addiction treatment because of the use of external rewards and incentives (Roll & Fruci, 2014). Aletraris et al. (2015a) examined counselors' attitudes toward using contingency management for substance use disorder treatment. When compared to other treatment options, CM was the least effective and accepted treatment approach in treating substance use disorders (Aletraris et al., 2015a). Other EBPs have been developed to help in a variety of clinical problems. One of the most promising EBPs, in substance use disorders, is MI.

Motivational Interviewing: Its Development and Application

In recent years, the popularity of MI in the clinical setting has increased, especially in the treatment of SUDs. MI is a humanistic, person-centered, psychosocial, and modestly directive counseling approach developed by Miller and Rollnick in the early 1980s (Miller & Rollnick, 1995). Miller originally developed MI as a psychological

intervention for clients with alcohol dependency (Miller & Rollnick, 2013). MI is an EBP used to treat a variety of clinical problems, including substance abuse, medication adherence, eating disorders, mental health problems, and chronic disease (Csillik, 2013; Macdonald et al., 2012; Palacio et al., 2014). Research has suggested implementing MI in substance use disorder treatment is beneficial. Several researchers (Aviram & Westra, 2011; Gantiva et al., 2015; Lundahl & Burke, 2009) found that using MI to treat substance use disorders resulted in increased recovery success rates and increased the readiness of participants to observe the change in themselves and lower drug consumption. Using MI to treat opioid use disorder in older adults has led to decreased misuse, increased motivation to change, increased self-efficacy, and reduced rates of substance use (Ayres et al., 2014; Chang et al., 2014; Li et al., 2016). Clients who were exposed to therapy were more likely to complete their treatment and benefit from increased self-esteem (Tolin, 2016).

The "Spirit" of MI

For MI to occur and be implemented correctly, the so-called spirit of MI must be present in the therapeutic setting. According to Naar-King, Safren, and Miller (2017), without the spirit of MI, the procedures and techniques used in the counseling setting would not be considered MI techniques. Miller and Rollnick (2013) identify two distinct components in MI: a technical, and a relational component. The relational component of MI (the spirit of MI) includes four key principles: partnership, evocation, acceptance, and compassion (Miller & Rollnick, 2013). The technical component of MI includes evoking and reinforcing client 'change talk' (Can et al., 2016). A mental health professional must

have a solid understanding of the four principles before applying these principles in the therapeutic setting (Corey, 2015). Professionals can encourage clients to become more self-efficient, self-reliant, resourceful, and, ultimately, to sustain changes made to problem behavior (Miller & Rollnick, 2013). Can et al. (2016) stated that when signs of readiness to change, decreased resistance to change, and increased talk about change occurs, a critical phase of MI begins. MI is designed to evoke and explore both the discrepancies and ambivalence that may occur when looking to change problem behavior (Miller & Rollnick, 2013).

Given the importance of the spirit of MI, newer research has been dedicated to exploring ways to effectively emphasize the spirit of MI to those who use MI techniques. Mallisham and Sherrod (2016) designed an MI training program for psychiatric nursing staff that emphasized the spirit and intent of MI in the hope of expanding the staff's knowledge of MI. The authors found that individuals in the nursing profession were more knowledgeable and successful in implementing MI when their training emphasized the spirit of it (Mallisham & Sherrod, 2016). Hall et al. (2015) found that personal attributes and attitudes of clinicians significantly influenced their implementation of MI in the therapeutic setting after they received training in the spirit of MI. They indicated that despite such training, clinicians do not sustain a change in practice unless follow-up training is provided on a regular basis, adherence is strongly defined, and the attributes and attitudes of clinicians are considered (Hall et al., 2015). Considering such findings, having the correct understanding of MI plays an intricate role in the successful

implementation of MI. Using MI techniques in opioid dependency treatment may increase successful treatment outcomes.

MI has been shown to be effective as a relatively brief intervention for a wide range of clinical problems (Hardcastle et al., 2015; Macdonald et al., 2012; Naar-King et al., 2017). Researchers have documented that MI increases behavioral change outcomes of those with eating disorders, in correctional programs, and with medication adherence (Höjdahl, Magnus, Mdala, Hagen, & Langeland, 2015; Macdonald et al., 2012; Palacio et al., 2014). Naar-King et al. (2017) suggested that using MI to treat substance use disorders is beneficial for client engagement, progress, and goal clarification.

The effectiveness of MI in many clinical settings encourages further exploration of the use of MI in opioid use disorder treatment. Aviram and Westra (2011) found that MI is a successful psychological intervention for increasing clients' self-efficacy and the number of individuals who successfully achieve abstinence. MI techniques have been found to emphasize clients' self-responsibility and promote an invitational style for working cooperatively with clients in generating alternative solutions to behavioral problems (Corey, 2015). Miller and Rollnick (2013) found that individual counseling, promoting the recognition of self-efficacy, and reflective listening were all MI techniques that the counselor could incorporate to maximize client change. The results of conducted research suggest that MI is a promising approach to treating opioid use disorder. To date, however, researchers have not examined which factors lead a provider to use MI in treating opioid use disorder, or how such mental health providers view this treatment with the opioid-addicted population.

Role of mental health providers

Research has provided some insight into the importance of mental health providers' roles in MI. Miller and Rollnick (2013) describe MI as a collaborative conversation style for strengthening a person's motivation and commitment to change. When implemented correctly, MI for substance use disorders has led to more favorable outcomes than other treatment methods (Macdonald et al., 2012; Miller & Rollnick, 2013). Macdonald et al. (2012) examined treatment outcomes in substance use disorders and found an increase in readiness and motivation to change when mental health professionals incorporated MI in their interventions. Rosengren (2009) emphasized that the practice of MI requires mental health providers to have certain skill-sets, including the providers' ability to recognize their attitudes (whether ambivalent, indifferent, positive, or negative) about the therapy (Zuckoff, 2013). To develop the necessary skill-sets, providers must understand the purpose of MI and implement it in the therapeutic setting correctly.

MI can be a complex intervention. Barriers include language and culture (Wilkinson, 2015), and proficiency in MI takes training, supervision, and feedback (Naar-King et al., 2017). Miller and Rollnick (2013) stated that when MI is implemented correctly, positive client change is increased. Miller and Rollnick (1995) believed that several critical elements needed to be present in MI to trigger the motivation for change. Hester and Miller (2003) developed the acronym FRAMES to describe these critical elements of MI. FRAMES involves six guiding principles of MI: (a) Providing feedback, so the client has an opportunity to reflect on his or her present situation, (b) Client's

responsibility for change, (c) Provide clear recommendations or advice about the need for change, (d) Offering a menu of alternative strategies to the patient for changing problem behavior, (e) Using supportive and reflective listening skills, and (f) Reinforcing the patient's belief in his or her ability to succeed in a specific task, such as change (Hester & Miller, 2003).

There is no one unique way of practicing MI (Miller & Rollnick, 2013) and there has been increased latitude for therapists to share their reactions, confront clients in a caring way, and participate more actively and entirely in the therapeutic process (Hall et al., 2015). Miller and Rollnick (2013) stated that therapists must function within the "spirit" of MI, rather than just employ its strategies. The essence of MI has become a large focal point in the training of MI as it is important in the provider-client relationship.

The Impact of Attitudes on Fidelity and Adherence to MI

Researchers have attempted to determine the best ways to increase mental health providers' fidelity to MI and its impact on treatment outcomes. McGovern et al. (2004) studied the characteristics, attitudes, and readiness of clinicians to adopt specific EBPs in substance use treatment. They found that clinicians were more motivated to adopt MI, CBT, and other EBPs over more traditional treatment methods. Can et al. (2016) studied counselor reflections in MI to evaluate provider fidelity to MI using taped therapeutic session transcripts. This study used a method to automatically detect counselor reflections of MI to determine adherence to MI techniques. A collection of data was compiled from three different MI interventions: a community primary care clinic and two different populations of college students. The results of the study suggest that using natural

language process methods could allow for a more accurate evaluation of provider fidelity to MI as well as better insight into the evaluation of the components of specific treatments (Can et al., 2016). Abraham et al., (2011) examined counselors' attitudes and behaviors toward using Naltrexone (an opioid antagonist that reduces cravings for opioids) to treat opioid-use disorders. Abraham et al. (2011) found the organizational context in which the counselors were employed, played a larger part in their receptiveness toward Naltrexone treatment than did their attitudes and behaviors. Hall et al. (2015) found that the personal attributes and attitudes of clinicians significantly influenced their implementation of MI after they received training in the "spirit" of MI. Results indicated that despite such training, clinicians did not sustain a change in practice unless follow-up training was provided on a regular basis, adherence was strongly defined, and the attributes and attitudes of clinicians were considered.

Hall et al. (2015) examined 20 studies that measured training outcomes for MI in the treatment of substance use disorders. The study focused on the proficiency level of clinicians using MI once they completed training in the spirit of MI. A successful outcome was determined when 75% of clinicians who received training met the level of proficiency. Only 11 of the 20 studies reported follow-up results and only two studies met the study's criteria (Hall et al., 2015). Results indicated that personal attributes and attitudes of clinicians significantly influenced their implementation of MI in the therapeutic setting after they received training in the spirit of MI. Hall et al. (2015) indicated that despite such training, clinicians did not sustain a change in practice unless follow-up training was provided on a regular basis, adherence was strongly defined, and

the attributes and attitudes of clinicians were considered (Hall et al., 2015). These results suggest that a better understanding of the mechanisms behind providers' fidelity and adherence to MI needs more exploration.

Attitudes and Knowledge of Mental Health Providers concerning MI

Previous research has shown that a lot of the effectiveness of MI is a direct result of the characteristics of the mental health provider employing the technique (Csillik, 2013; Magill et al., 2014). As researchers continue to study the efficacy of MI, new information becomes available to strengthen training protocols. Trainings have a direct impact on the effectiveness of EBPs and treatment effectiveness (Naar-King et al., 2017). When investigating the effects of trainings, attitudes and knowledge are important factors to study. Several studies have been conducted on providers' knowledge of MI and attitude about MI, before and after receiving training in MI (Can et al., 2016; Hall et al., 2015). These studies have suggested more positive attitudes about MI and more knowledge of MI after the provider has attended training. Many researchers (Doran et al., 2011; Leffingwell, 2006; Parrilla, 2016; Simon & Ward, 2014) have used Leffingwell's MIKAT (2006) to measure providers' attitudes and knowledge of MI before and after such training. Leffingwell has suggested a need for future studies to better understand the impact of attitudes and knowledge on training effectiveness (Leffingwell, 2006). A review of the literature suggests limited studies (Can et al., 2016; Hall et al., 2015; Naar-King et al., 2017) in this area, as well as no studies on the attitudes and knowledge of mental health providers working with opioid use disorders.

Summary and Conclusions

MI is a non-directional intervention that helps people work through uncertainty in changing behavior by using a person-focused technique of guiding (Macdonald et al., 2012; Miller & Rollnick, 2013). Problem conduct is typically accompanied by an absence of motivation to change despite the negative results of a person's conduct (Donovan, Ingalsbe, Benbow, & Daley, 2013). Researchers have observed MI to be compelling in working with populations wishing to change their conduct, including those with substance use disorders (Aviram & Westra., 2011; Gantiva et al., 2015; Lundahl & Burke, 2009), elderly substance users (Chang et al., 2014), those with eating disorders (Macdonald et al., 2012), those in correctional facilities (Höjdahl et al., 2015), and with medication adherence (Palacio et al., 2014).

Mental health providers' attitudes of and knowledge about MI have been observed to be an imperative component in better understanding fidelity to MI (Csillik, 2013; Martino, Ball, Nich, Frankforter, & Carroll, 2008; Spohr, Taxman, Rodriguez, & Walters, 2016; Vader, Walters, Prabhu, Houck, & Field, 2010; Zuckoff, 2013). MI training, supervision, and feedback are required for a mental health provider to become proficient in MI techniques (Naar-King et al., 2017). Continued research is needed on the attitudes of mental health providers about MI with opioid-dependent clients, as findings are inconclusive (Huebner & Tonigan, 2007; Magill et al., 2014). With an improved understanding of providers' attitudes toward and knowledge about MI, more successful training protocols and treatment techniques may be established. Once it is clear why mental health providers either incorporate or fail to use MI with opioid-dependent clients,

better interventions may be developed that target specific attitudes and more in-depth knowledge of MI techniques. Using the TPB as a theoretical framework may enable others to understand better, how attitudes and knowledge influence decision-making.

In Chapter 2, I provided an overview of opioid use disorders, an overview of the components of MI, and reviewed previous treatment options for opioid use disorder. I also considered the literature on the applicability of the theory of planned behavior on fidelity to MI, particularly as used with opioid-dependent clients. The literature on MI suggests that mental health providers' training, skill-sets, and attitudes play a significant role in substance use treatment outcomes (Hagger & Hardcastle, 2014; Hall et al., 2015). TPB was chosen as the main theoretical framework for this study because of the emphasis on the attitudes, skill-sets, and the training of mental health providers. The chapter concludes with a review of current literature concerning the role of mental health providers in practicing MI, their attitudes about MI and EBPs, and the need for continued research on effective interventions for opioid use disorder treatment.

The development of effective interventions for opioid use disorder treatment stems from mental health providers being adequately trained in MI. One way to assess the effectiveness of their training is to examine the attitudes and knowledge of mental health providers. I will explore how mental health providers' attitudes about, and knowledge of MI influence their decision to use MI with opioid-dependent clients. Mental health providers studied will be those who work with individuals with opioid use disorder.

Chapter 3 will include the research design and rationale for this study. In addition, the methodology and threats to validity and reliability will be detailed. Finally, a summary of the chapter will be provided.

Chapter 3: Research Method

Introduction

The purpose of this study is to determine the relationship attitudes about MI and knowledge of MI have with providers' use of MI with opioid-dependent clients. A review of the literature revealed the importance of mental health providers' attitudes about and knowledge of MI in the therapeutic setting. Attitudes about MI and knowledge of MI will be examined to provide insight into their roles in explaining the intention to use MI with clients who suffer from opioid use disorder.

This chapter includes a description of the research design and rationale. This chapter will also detail the methodology, population, setting and sample, procedure for recruitment, participation, and the data collection process. Information on instrumentation and operationalization of constructs, threats to validity and reliability, and ethical procedures will also be addressed.

Research Design and Rationale

For this study, the predictor variables are attitudes about MI and knowledge of MI. The variables will be measured by the Motivational Interviewing Knowledge and Attitudes Test (MIKAT; Leffingwell, 2006 [See Appendix C]). The dependent variable is the self-reported likelihood of mental health providers to use MI with opioid-dependent clients, as measured by self-reporting questionnaire.

A quantitative research design is commonly utilized for testing theories that are geared toward determining if relationships exist between variables (Creswell, 2014). Determining the correct method of data collection is important in research as it can

increase the reliability and validity of a study (Creswell, 2014). The self-administered survey will focus on determining the relationship attitudes about MI and knowledge of MI (predictor variables) have on mental health providers' intention to use MI (dependent variable). In similar studies, the measurement of attitudes and knowledge were measured directly through self-reporting surveys, observations, and association tests (Leffingwell, 2006; Parrilla, 2016). Surveys will be used to capture the provider's attitudes and knowledge in a way that will allow for numerical data and statistical analysis to support a quantitative research design.

Regression analysis will be used with the purpose of investigating the relationship attitudes about MI and knowledge of MI have with mental health providers' intent to use MI with opioid-dependent clients. Regression analysis is appropriate for investigating the relationship between the independent variables and the dependent variable because it is a cost-effective and efficient way to collect data in a short timeframe and it allows for isolation of the variables of interest (Linneman, 2018). Aizen's TBP (1985) will serve as the foundation for exploring the relationship between the variables of this study.

The research questions follow:

Research Question 1: Are mental health providers' attitudes about MI a significant predictor of using MI with opioid-dependent clients, as measured by the Motivational Interviewing Knowledge and Attitudes Test (MIKAT)?

Research Question 2: Is mental health providers' knowledge of MI a significant predictor of using MI with opioid-dependent clients, as measured by the Motivational Interviewing Knowledge and Attitudes Test (MIKAT)?

Methodology

Population

In the United States, approximately 1,400 mental health providers are group members of the Facebook group 'Recovery to Practice' (Recovery to Practice, 2017). Recovery to Practice is currently funded by the UT Addiction Technology Transfer Center (ATTC) and is supported by the University of North Texas. Named after adherence to SASHA's 10 principles of recovery, Recovery to Practice has over 1,400 members on Facebook in the United States (Davidson, 2011). Therefore, the target population for this research was 68 mental health providers who had knowledge of MI, were licensed mental health providers, worked with clients who have opioid use disorder, and were members of Recovery to Practice.

Sampling and Sampling Procedures

The participants included mental health providers who work with opioid-dependent clients using purposive sampling. Mental health providers were considered for the research regardless of age, race, or background to open the research to a larger population, allowing for a more representative sample. The procedure for sampling included an advertising post placed on the Recovery to Practice Facebook page.

To be eligible to participate in this study prospective participants must be licensed mental health providers who self-reported being familiar with MI, had self-identified experience working with opioid-dependent clients for at least 2 years, and were at least 18 years or older. People who did not meet these criteria were be excluded. Due to time and

financial constraints, I was not able to reach all mental health providers and incentives were not offered to participants.

Using the statistical program G*Power 3.1.9.2 (Faul, Erdfelder, Buchner, & Lang, 2009), a power analysis revealed that for regression analysis, the anticipated minimum sample size is 68 participants. The sample size was determined by setting the alpha level at the standard .05 for psychological research with an accepted value for power of .80 (Cohen, 2013), and a medium effect size of .30 (Maxwell et al., 2018). Using a medium effect size will improve the chances of decreasing the probability of Type 1 and 2 errors from occurring while increasing the likelihood of determining whether actual statistical significance exists between the variables (Cohen et al., 2018; Maxwell et al., 2018). Previous studies have estimated the effect size for similar studies to be between R^2 =0.14 and R^2 =0.28 (Leffingwell, 2006; Leedy, Paul, Ormrod, & Jeanne 2013; Li et al., 2016).

Procedures for Recruitment, Participation, and Data Collection

Once Walden University's Institutional Review Board (IRB) approved the research proposal, a post was placed on the Recovery to Practice Facebook page requesting their members' participation in the study and the survey instrument was created with the online tool, SurveyMonkey. This e-mail included an introduction of the study, an informed consent form, the length of time needed to complete the survey, the purpose of the study, and the inclusion criteria. Participants were recruited voluntarily from the Recovery to Practice Facebook group list.

Informed consent was presented to potential participants prior to participation in the survey. The informed consent form was presented on the SurveyMonkey link prior to

the participants reaching the survey. This form included participants' rights, confidentiality, the purpose of the study, ethical concerns, and how the study will be used. Participants had to read and agree to all parts of the informed consent form prior to participating in the study. No compensation was offered for completing the survey and participants were able the study at any time, without penalty. No follow-up was required from participants. No personal information was collected from participants; instead, they were given a unique number that was generated by Survey Monkey and all data was collected anonymously.

Instrumentation and Operationalization of Constructs

This section will review the potential survey instrument that were used. The survey included three measures: an informed consent form, a demographic and screening questionnaire, and the MIKAT. Each measure is detailed below.

Informed Consent. Participants reviewed the informed consent form via Survey Monkey, prior to being allowed to participate in the survey. All participants were required to click an acknowledgment button to indicate that they had read and accepted the content of the informed consent form.

Demographic and Screening. Demographic information about providers was collected after informed consent was obtained via a demographic and screening questionnaire (see Appendix A). The information included: the participant's gender, age, number of years of practice, number of years working with opioid-dependent clients, previous and/or current use of MI, and their likelihood to use MI with opioid-dependent clients, as well as capture information about the dependent variable. The dependent

variable was scored on a Likert Scale of 1 to 5, where 1 was not at all likely and 5 was extremely likely (eg., 'How likely are you to use the MI approach with clients who suffer from opioid dependency?'). The demographic and screening questionnaire took approximately two to three minutes to complete.

MIKAT. Participants' attitudes about and knowledge of MI was measured by the MIKAT (Leffingwell, 2006). Leffingwell (2006) developed the MIKAT as a means for measuring the knowledge and attitudes of clinicians toward MI. Leffingwell is a clinical health psychologist and currently works as a professor and head of the psychology department at Oklahoma State University. He originally used this test as a pretest and posttest before and after MI training to measure the attitudes and knowledge of clinicians. He also used it to encourage researchers to use MIKAT as a tool to develop more effective training programs (Leffingwell, 2006). Leffingwell (2006) has provided open permission for the MIKAT to be used as a form of research if credit is given to the appropriate author. The MIKAT is the chosen instrument for this study because it is cost-efficient and allows for needed information to be quickly collected (Leffingwell, 2006).

Scoring. The MIKAT is an efficient and effective measure of clinicians' knowledge of and attitudes about MI. The MIKAT measures attitudes and knowledge of MI and is divided into two separate components with separate scores for both attitudes and knowledge (Leffingwell, 2006).

The first part of the MIKAT survey (see Appendix B) consists of a 14-question true-false quiz, which focuses on capturing providers' attitudes about MI. The first 10 of the 14 questions are myths about substance use disorder and individuals who suffer from

substance use disorder (e.g., “Therapists’ expectancies for their clients’ abilities to change have no effect upon whether change occurs.”), and the last four of the 14 questions are principles that are consistent with the MI approach (“The best way to motivate substance users is to help them resolve their ambivalence about change”). All incorrect answers on the true-false quiz received a 0; all correct answers received a 1 (see Appendix C). The sum of participants’ scores from all 14 questions were calculated to indicate their final attitudinal score. High scores were associated with more favorable attitudes toward MI; lower scores were associated with less favorable attitudes toward MI.

The MIKAT also includes a checklist of 15 MI behavioral strategies to measure providers’ knowledge of MI (Leffingwell, 2006). Participants checked each of the behavioral strategies they believe reflected the principles of MI techniques when treating substance use. According to Leffingwell, participants’ selections will indicate their knowledge of MI (Leffingwell, 2006). Examples of behavioral strategies include “express empathy” and “develop discrepancies.” All incorrect answers on the true-false quiz received a 0; all correct answers received a 1 (see Appendix C). The MIKAT checklist contains 5 MI components that are consistent with MI practices, therefore, the range of scores for correctly identifying MI components is 0-5. The sum of participants’ scores were calculated to indicate their final knowledge score. High scores indicated sufficient knowledge of MI (3-5); lower scores indicated less sufficient knowledge of MI (1-2).

Reliability and validity. Leffingwell completed extensive research on the development, implementation, and pilot testing of The MIKAT survey. The MIKAT has been used in evaluating training programs and by providers who use MI (Doran et al., 2011; Leffingwell, 2006). Leffingwell (2006) conducted a study of 71 providers using the MIKAT to test if there was a variation in scores from the time the pretest and posttest were administered. The results suggest the MIKAT has a high construct validity ($p < .01$) with an effect size of 1.37, t (70) = 5.72 for beliefs consistent with MI and the identification of MI behaviors (Leffingwell, 2006).

Doran et al. (2011) used the MIKAT in a study investigating the effectiveness of MI training with correction officers. Internal consistency reliability was tested and showed that the Cronbach's alpha coefficient was .84**.** Simon and Ward (2014) conducted a study of 17 lay advisors using the MIKAT to determine if there was an increase in knowledge of MI after they attended MI training, however since participants underwent MI training prior to their retesting sessions the reliability of this test is questionable. In these tests, test-retest reliability ranged from .07 to .29.

Data Analysis

Once data collection was complete, I used the software Statistical Package for Social Sciences (SPSS) for data analysis (Field, 2013). I entered the data into SPSS 25.0 once the survey closed, three weeks after the study opened. The analysis included two stages: A Preliminary Analysis and the Main Analysis. The first stage included data cleaning, assumption testing, and descriptive statistics. The second stage included

hypothesis testing using regression analysis. Data that was incomplete, incorrect, or duplicated were removed prior to conducting the second stage of analysis.

Preliminary Analyses

Once all data were collected, results were checked for accuracy and missing data. To check for accuracy, I ensured that all the information gathered in the surveys and demographic questionnaires on SurveyMonkey were properly brought over to SPSS. Frequencies were then run on all variables to ensure that missing data was caught and removed.

Once the data had been entered and data cleaning has occurred, I ran frequencies and percentages for categorical data, standard deviations, and means for all variables that were continuous. Prior to the statistical analysis being conducted, assumptions of simple regression were be checked.

Assumptions Underlying Regression

Homoscedasticity. The assumption of homoscedasticity suggests that the variance of the dependent variable should be independent from all independent variables (Pallant, 2013). This assumption determines whether the errors of the means are uncorrelated. Violations of this assumption decrease the significance of tests (Field, 2013). This assumption was checked by plotting the predicted values and residuals on a scatterplot (Field, 2013).

Normality. The assumption of normality indicates that all independent predictors will be normally distributed. This normal distribution will increase the validity and

reliability of the results (Field, 2013). I used the Shapiro-Wilks test to check for normality (Pallant, 2013).

Linearity. A linear relationship needs to exist between the independent and dependent variables in this type of test (Pallant, 2013). To determine if linearity exists, a test of linearity was conducted with all of the data. Linearity is not a concern if predictors are evenly distributed and homoscedasticity exists (Pallant, 2013).

Main Analyses - Linear Regression

Linear regression was conducted to evaluate the following research questions:

Research Question 1: Are mental health providers' attitudes about MI a significant predictor of using MI with opioid-dependent clients, as measured by the Motivational Interviewing Knowledge and Attitudes Test (MIKAT)?

$H_0$1: Mental health providers' attitudes about MI do not significantly predict the likelihood of using MI to treat opioid dependency.

H_a1: Mental health providers' attitudes about MI do significantly predict the likelihood of using MI to treat opioid dependency.

Research Question 2: Is mental health providers' knowledge of MI a significant predictor of using MI with opioid-dependent clients, as measured by the Motivational Interviewing Knowledge and Attitudes Test (MIKAT)?

$H_0$2: Mental health providers' knowledge of MI does not significantly predict the likelihood of using MI to treat opioid dependency.

H_a2: Mental health providers' knowledge of MI does significantly predict the likelihood of using MI to treat opioid dependency.

To answer research question one, I conducted a simple linear regression to determine whether attitudes about MI significantly predict the use of MI. To answer research question two, I conducted a simple linear regression to determine whether knowledge of MI significantly predicts the use of MI.

Evaluating the model. Linear regression assessed whether a relationship between the independent variables and the dependent variable existed, after cofounding variables had been excluded (Field, 2013). I used F values to determine how much attitudes about and knowledge of MI predicted mental health providers' intent to use MI with opioid-dependent clients (Pallant, 2013). To assess significance, I set the alpha level at .05, with a one-tailed test in all statistical testing done in this study (Cohen, 2013).

All collected data has been be stored on a computer that requires a secure password to access, as well as on a USB drive that is locked in a safe. The collected data will be stored for five years and then it will be destroyed.

Threats to Validity

Typically, in research studies, both threats to internal and external validity are a reality. For purposes of this study, such threats will be discussed, as well as the precautions that were taken to minimize noted threats.

Threats to External Validity

One threat to external validity that existed in this study was the threat of generalizability (Taylor, 2013). The generalizability of the results may be limited because of the use of purposive non-probability, self-selected sampling for purposes of convenience. To address this threat, participant recruitment of approximately 1,400

people (counselors who are Recovery to Practice members) from all over the United States was conducted allowing for a more representative sample to be obtained. The inclusion criteria required participants to be licensed mental health providers who had experience providing treatment to opioid-dependent clients, as well as familiarity with MI techniques. Therefore, the results of this study cannot be generalized beyond mental health providers who are members of the Recovery to Practice group, have provided opioid treatment, and are familiar with MI techniques.

Threats to Internal Validity

Threats to internal validity are important to address because they can affect one's ability to accurately draw conclusions from results. Reactivity is one factor that could affect the internal validity of this study. Due to the use of self-administered surveys in this study, the participants were expected to self-report. Participants sometimes provide responses they believe the researcher wants rather than truthful responses (Leedy et al., 2013). To minimize this threat to internal validity, the responses to the survey were provided anonymously. This was done for each participant so that there was no way anyone, including myself, could identify participants; this also addressed the threat of researcher bias. Other threats to internal bias are identified covariates in this study. Linear regression addressed covariates such as gender, age, number of years practicing, and previous use of MI, and isolate the variables of interest.

Threats to Construct Validity

The results of a study are only valid if a test is measuring what it is intended to measure (Creswell, 2014). So that this test minimizes threats to construct validity, a

testing measure with known construct validity was used, allowing more accurate inferences to be drawn from the results. The MIKAT is a validated measure, which has been widely used as was extensively described in the instrumentation section.

Ethical Procedures

Walden University's Institutional Review Board (IRB) must approve research prior to data being collected to ensure that research is ethically conducted and that risks to potential participants are reduced. In 2014, I completed the National Institutes of Health (NIH) training on research involving human participants during her studies at Walden University and ethical risk to participants in this study is minimal. Participants were provided with an informed consent form prior to participating in the survey so they were aware they were participating in a research study and that there were no consequences associated with withdrawing from the study at any time. If a participant chose to exit the study, they were able to click on the exit button located on the bottom of the SurveyMonkey page.

Identifiable personal information was not collected during the survey, as all data collected was done so anonymous, so that confidentiality was maintained. There was no foreseeable physical or mental health risk associated with participating in this study. No coercion or deception was involved in this study and no incentives was provided to participants ensuring that participation was voluntary. Once data was downloaded from Survey Monkey, it was stored in my computer that is secured by a password and only accessible to me. All stored data will be deleted in five years, which follows ethical research guidelines (Emanuel, 2004).

Summary

The purpose of this quantitative, nonexperimental research study was to determine the relationship attitudes about MI and knowledge of MI have with providers' use of MI with opioid-dependent clients. Participant recruitment was conducted via a post that is distributed to FaceBook group members of Recovery to Practice. Attitudes about MI and knowledge of MI was collected using the MIKAT and all data was analyzed using SPSS.

The purpose of Chapter 3 was to detail the research design and rationale, methodology, population, setting, and sample. Further, the procedure for recruitment, participation, and data collection process was explained. Information on instrumentation and operationalization of constructs, threats to validity, ethical procedures, and a summary were also included in this chapter.

Chapter 4 will provide a detailed description of the data collection process, participant demographics, and descriptive statistics of the scales. The research questions and hypothesis testing will also be explained. Finally, the results of this study will be described.

Chapter 4: Results

Introduction

The purpose of this quantitative study was to examine whether the attitudes and knowledge of mental health providers about MI predict their likelihood of using MI as an intervention with opioid-dependent clients. Participants in this study included mental health providers who were members of the Facebook group 'Recovery to Practice', who were familiar with the MI intervention, had self-identified experience working with opioid-dependent clients, and were at least 18 years or older. The research questions and hypotheses were as follows:

Research Question 1: Are mental health providers' attitudes about MI a significant predictor of using MI with opioid-dependent clients, as measured by the Motivational Interviewing Knowledge and Attitudes Test (MIKAT)?

$H_0$1: Mental health providers' attitudes about MI do not significantly predict the likelihood of using MI to treat opioid dependency.

H_a1: Mental health providers' attitudes about MI do significantly predict the likelihood of using MI to treat opioid dependency.

Research Question 2: Is mental health providers' knowledge of MI a significant predictor of using MI with opioid-dependent clients, as measured by the Motivational Interviewing Knowledge and Attitudes Test (MIKAT)?

$H_0$2: Mental health providers' knowledge of MI does not significantly predict the likelihood of using MI to treat opioid dependency.

H_a2: Mental health providers' knowledge of MI does significantly predict the likelihood of using MI to treat opioid dependency.

Chapter 4 describes the data collection method, a description of the population, and the recruitment methods. This chapter includes descriptive statistics and preliminary tests to determine if assumptions of linear regression were met. Also included in this chapter are a quantitative analysis of data and a summary of the research findings.

Data Collection

The target population for this research included mental health providers who had self-reported knowledge of MI, were licensed mental health providers, had self-identified experience working with opioid-dependent clients, were 18 years or older, and were members of the Recovery to Practice Facebook group. Published information suggests that the Recovery to Practice group consists of at least 1400 members; approximately 1400 mental health providers were part of the total target population of which 108 were respondents (Recovery to Practice, 2017). Out of these 108 respondents, 71 respondents completed their survey in its entirety and met the inclusion criteria. As a result, the response rate was 66%. The recruitment and data collection timeframe was 21 days. Once data cleaning was completed, there were no discrepancies in the data collection method or processes.

Upon approval by the Institutional Review Board of Walden University (approval number: 17:05:33-05'00') in August of 2019, I began the recruitment of mental health providers who were at least 18 years of age, held a professional license or certification as a counselor/dependency counselor, currently worked as or had experience working with

opioid-dependent clients for at least 2 years, had a knowledge of MI, and were members of the Facebook group 'Recovery to Practice'. Data were collected through the MIKAT and self-administered surveys completed online by participants (*N*=71). The electronic link to the survey was shared on Facebook in the Recovery to Practice group by two of the group's administrators between August 23, 2019, through September 13, 2019, to obtain an adequate sample. Seventy-one mental health providers completed the survey. These included 11 (15.3%) men and 60 (84.7%) women. According to the Labor Force Statistics from the Current Population Survey Overview (2017), the counseling field consists of 75.7% women and 24.3% men. In this study, the gender discrepancy was reflective of the target population. Seventy-one (100%) participants had previously used MI and 34 (48.4%) had 2-5 years of experience working in the mental health field (see Table 1). This study's sample is not representative of the larger population of mental health providers. Participants in this study were required to be members of the Recovery to Practice Facebook Group, whereas licensed counselors are not required to participate in group membership. Additionally, the study's population only included 1400 mental health professionals; however, there are approximately 577,000 mental health professionals in the United States (Grohol, 2019).

Table 1

Frequencies: Demographics N= 71

	N	%
Gender		
Female	60	84.7%
Male	11	15.3%
Previous usage of MI		
Current or Previous Usage of MI	71	100%
Years of Experience in the Field		
2-5 years	34	48.4%
6-10 years	19	26.4%
11-15 years	4	5.6%
16-20 years	6	8.4%
21-30 years	6	8.4%
More than 30 years	2	2.8%
DV: How likely are you to use MI with opioid-dependent clients?		
Not at all likely	1	1.4%
Somewhat unlikely	6	8.5%
Somewhat likely	14	19.7%
Likely	25	35.2%
Extremely likely	25	35.2%

Results

Preliminary Analysis

Frequencies were conducted to determine if data were missing or any errors occurred after data were collected and exported into SPSS. Missing data were found and 37 respondents with missing data were excluded from data analysis. After missing data were removed and remaining data were checked, MI attitudinal and knowledge scores

were computed in two steps. First, for each respondent, all correct attitudinal and knowledge scores were assigned a 1 and all incorrect scores were assigned a 0. Second, each respondent's overall score was computed by summing these scores. MI attitudes were computed by the sum of the 14 MI attitudinal questions and MI knowledge was computed by the sum of the 15 MI knowledge questions. Frequencies were then performed to determine if any missing scores or calculation errors occurred, once sum scores were computed for both MI knowledge and attitude variables. There were no calculation errors or missing scores.

Preliminary analyses also involved testing assumptions for the linear regression used to test Research Question 1, which included normality, linearity, and homoscedasticity. The results of the histogram of the standardized residuals showed no deviation in normality as the histogram followed the bell-shaped curve, indicating no violation of the assumption of normality (see Figure 1; Field, 2013). Furthermore, the result of the Shapiro-Wilks test of normality was not significant (S-W= .960, df= 71, p = .324). A nonsignificant p value on the Shapiro-Wilk's test indicates that no violation of normality exists in distribution (Pallant, 2013).

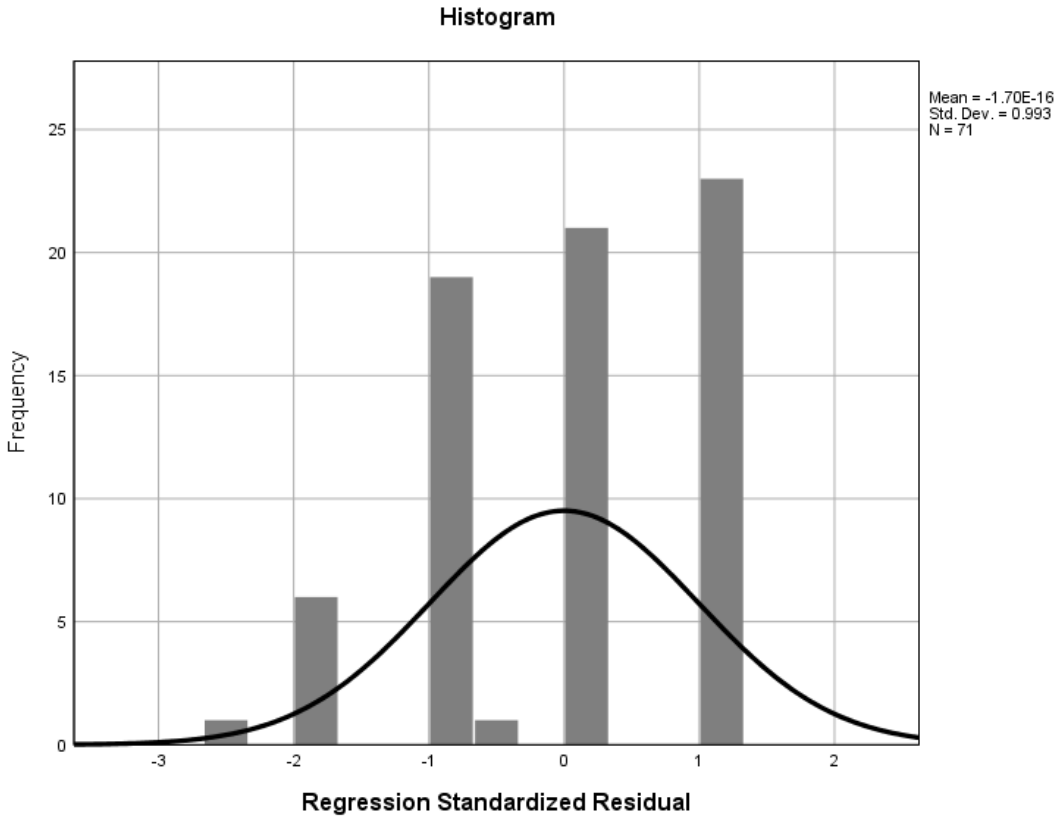

Figure 1. Histogram of the regression standardize residuals shows a normal distribution.

Linearity and Homoscedasticity

The assumptions for linear regression were met as the variables followed a linear path, rather than another type of path (Field, 2013). A plot of the standardized residuals and the standardized predicted values showed no violation in homoscedasticity, where the residuals appear to be evenly scattered in a rectangular (see Figure 2). The scatterplot pattern was rectangular in shape and the variables followed a linear path; therefore, the assumptions of linearity and homoscedasticity were met (Field, 2013).

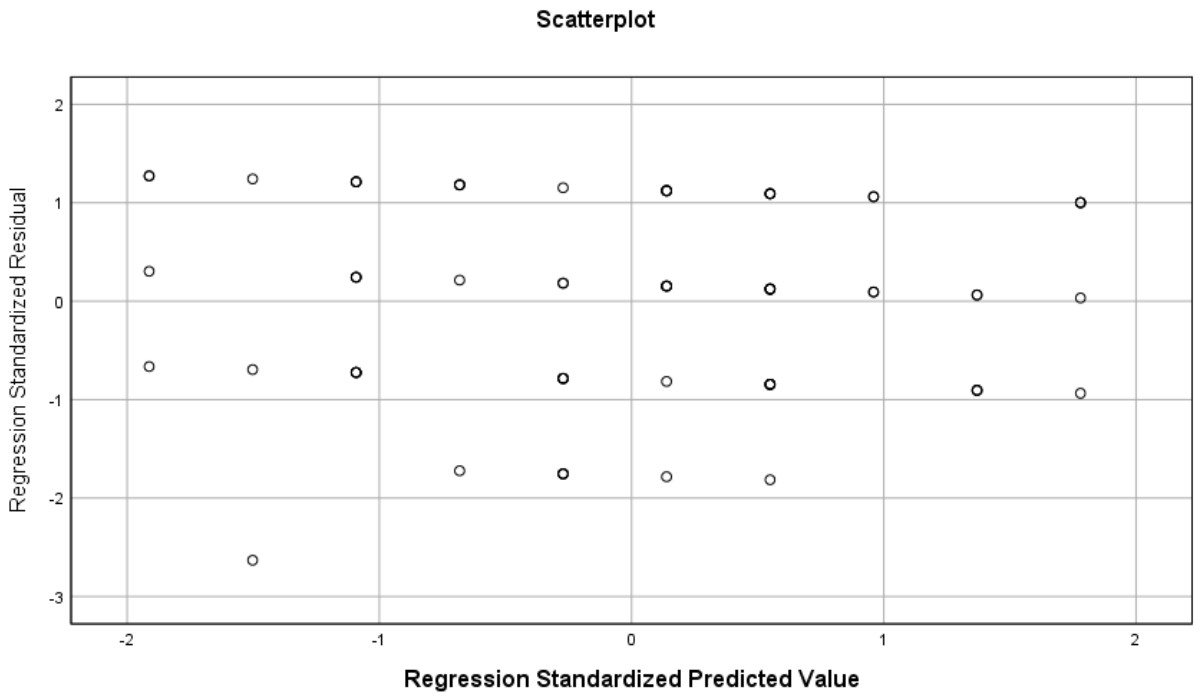

Figure 2. The plot of standardize residuals and regression standardize predicted values indicated no violation in the assumptions of homoscedasticity or linearity.

Research Question 2 preliminary analyses were also completed and involved testing assumptions for the linear regression used to test Research Question 2. These assumptions included normality, linearity, and homoscedasticity. The results of the histogram of the standardized residuals indicated no deviation in normality as the histogram followed the bell-shaped curve, indicating no violation of the assumption of normality (see Figure 3; Field, 2013). Furthermore, the result of the Shapiro-Wilks test of normality was not significant (S-W= .827, *df*= 71, *p* = .101). The scatterplot of the standardized residuals and predicted values showed a random displacement of scores that take on a rectangular shape with no clustering, indicating that the assumptions of linearity and homoscedasticity have been met (see Figure 4).

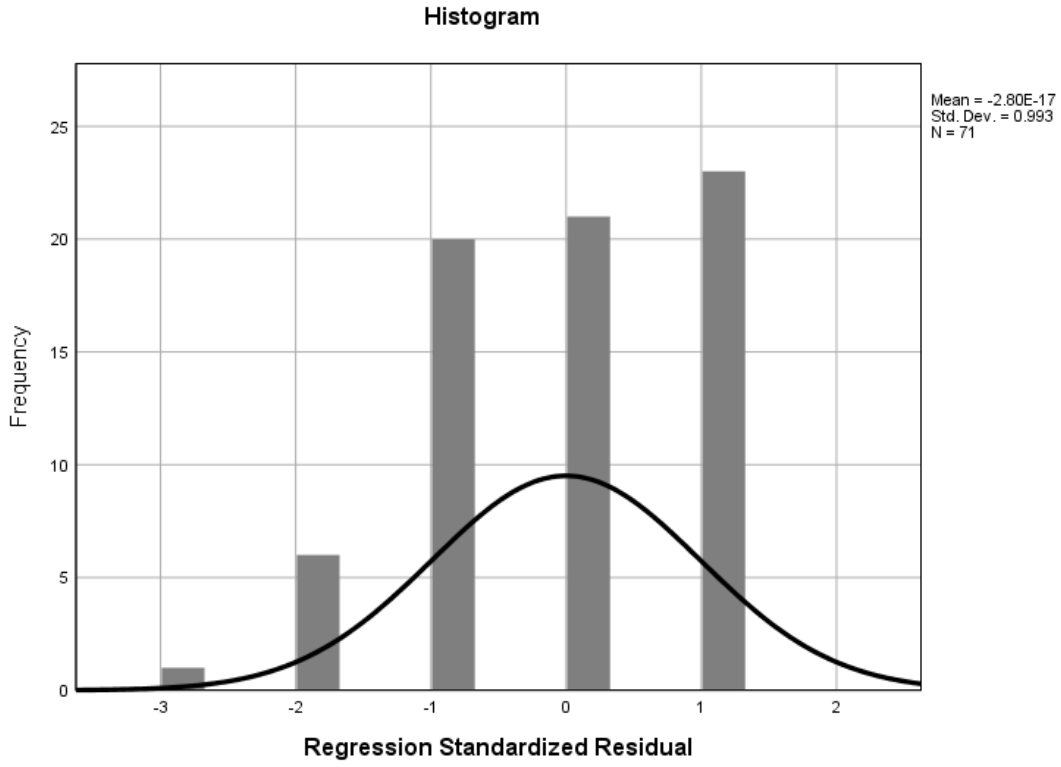

Figure 3. Histogram of the regression standardize residuals shows a normal distribution.

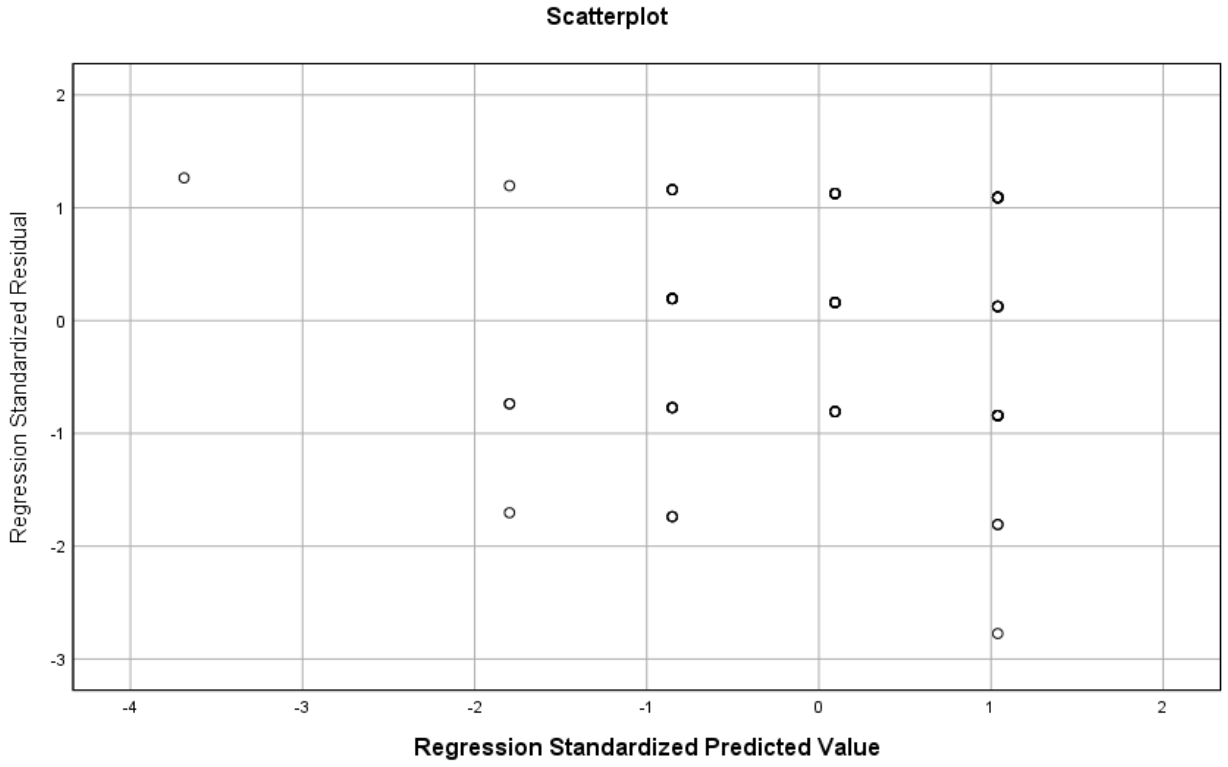

Figure 4. The plot of standardized residuals and regression standardized predicted values indicated no violation of the assumptions of homoscedasticity or linearity.

Main Analysis

Research Question 1: Are mental health providers' attitudes about MI a significant predictor of using MI with opioid-dependent clients, as measured by the Motivational Interviewing Knowledge and Attitudes Test (MIKAT)?

Linear regression was conducted to determine whether MI attitude was a significant predictor of a mental health provider's likelihood to use the MI approach with opioid-dependent clients. MI attitude was the predictor variable, where scores ranged from 0 to 14, and low scores indicated less favorable attitudes toward MI and high scores indicated more favorable attitudes toward MI. The mean for MI attitudinal scores was

9.33 (SD= 2.44). The criterion variable was the likelihood to use MI with opioid-dependent clients. The criterion variable scores ranged from 1 (not at all likely) to 5 (extremely likely) and the criterion variable mean scores were 3.83 (*SD*= 1.03).

The bivariate regression analysis indicated that MI attitudes were not a significant predictor of likelihood to use MI, F (1, 69) = .378, beta = -.074, and (*p*) = .541. Therefore, the null hypothesis (*H*0) cannot be rejected.

Table 2

ANOVA: Likelihood to use MI regressed on MI attitudes

Model		Sum of Squares	df	Mean Square	F	*p*
	Regression	.403	1	.403	.378	.541
	Residual	73.569	69	1.066		
	Total	73.972	70			

Table 3

Coefficients: Likelihood to use MI regressed on MI attitudes

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	T	*p*
1	(Constant)	4.122	.488		8.438	.000
	MI Attitudes	-.031	.051	-.074	-.615	.541

Research Question 2: Is mental health providers' knowledge of MI a significant predictor of using MI with opioid-dependent clients, as measured by the Motivational Interviewing Knowledge and Attitudes Test (MIKAT)?

An additional bivariate regression analysis was conducted to determine if MI knowledge was a predictor of the likelihood to use MI with opioid-dependent clients. MI knowledge was the predictor variable, where scores ranged from 0 to 15, and the mean was 3.90 (SD= 1.06). The criterion variable was the likelihood to use MI. Again scores of the criterion variable ranged from 1 (not at all likely) to 5 (extremely likely) and the criterion variable mean scores were 3.83 (SD= 1.03).

The bivariate regression analysis indicated that MI knowledge was not significant predictor of likelihood to use MI, F (1, 69) = .095, beta = .308, (p) = .758. Therefore, the null hypothesis ($H0$) cannot be rejected.

Table 4

ANOVA: Likelihood to use MI regressed on MI Knowledge

Model		Sum of Squares	*df*	Mean Square	F	*p*
1	Regression	.101	1	.101	.095	.759
	Residual	73.871	69	1.071		
	Total	73.972	70			

Table 5

Coefficients: Likelihood to use MI regressed on MI Knowledge

Model		Unstandardized Coefficients		Standardized Coefficients	*t*	*p*
		B	Std. Error	Beta		
1	(Constant)	3.691	.472		7.812	.000
	SumIV2	.036	.117	.037	.308	.759

Summary

Results and descriptions of the study methods and data analyses for research questions 1 and 2 were discussed. The first research question examined to what extent does mental health providers' attitudes about MI, as measured by MIKAT, predict their likelihood of using MI with opioid-dependent clients. The results of the bivariate regression analysis for Research Question 1 indicated that MI attitudes of MI were not a significant predictor of the likelihood to use MI with opioid-dependent clients. The second research question examined to what extent does mental health providers' knowledge of MI, as measured by MIKAT, predict their likelihood of using MI with opioid-dependent clients. The results of the bivariate regression analysis for Research Question 2 indicated that MI knowledge was not a significant predictor of the likelihood to use MI with opioid-dependent clients.

Chapter 5 will provide an overview of the research study and a summary of the findings. This chapter will also include an interpretation of the findings and the limitations of the study. Finally, chapter 5 will include recommendations and implications for future research.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this quantitative study was to examine whether the MI attitudes and MI knowledge of mental health providers predicted their likelihood of using MI as an intervention with opioid-dependent clients. The second purpose of this study was to contribute to the literature that identifies which variables increase mental health provider usage of MI when treating opioid-dependent clients (Jhanjee, 2014; National Institute on Drug Abuse, 2014). The findings may be used to create more effective training for mental health providers who use MI to treat opioid-dependent clients. The participants of this study were mental health providers who were members of the Facebook group 'Recovery to Practice', familiar with the MI intervention, had self-identified experience working with opioid-dependent clients, and were at least 18 years of age or older. This research study used a quantitative cross-sectional survey to collect data using the MIKAT, as well as a self-administered demographic questionnaire. This chapter will present the findings of the study and interpret them in the context of the theoretical framework. Limitations of this study, implications of the results, and recommendations for future research are also addressed in this chapter.

Summary of Key Findings

Research Question 1: Are mental health providers' attitudes about MI a significant predictor of using MI with opioid-dependent clients, as measured by the Motivational Interviewing Knowledge and Attitudes Test (MIKAT)?

$H_0$1: Mental health providers' attitudes about MI do not significantly predict the likelihood of using MI to treat opioid dependency.

H_a1: Mental health providers' attitudes about MI do significantly predict the likelihood of using MI to treat opioid dependency.

The results of the study indicated that the relationship between mental health providers' attitudes about MI and their usage of MI was not statistically significant. Mental health providers' attitudes about MI, as measured by the MIKAT, did not predict their likelihood of using MI with opioid-dependent clients. Therefore, according to the results of RQ1, the null hypothesis could not be rejected.

Research Question 2: Is mental health providers' knowledge of MI a significant predictor of using MI with opioid-dependent clients, as measured by the Motivational Interviewing Knowledge and Attitudes Test (MIKAT)?

H_o2: Mental health providers' knowledge of MI does not significantly predict the likelihood of using MI to treat opioid dependency.

H_a2: Mental health providers' knowledge of MI does significantly predict the likelihood of using MI to treat opioid dependency.

The results of the study indicated that the relationship between mental health providers' knowledge of MI and their usage of MI was not statistically significant. Mental health providers' knowledge of MI, as measured by the MIKAT, did not predict their likelihood of using MI with opioid-dependent clients. Therefore, according to the results of RQ2, the null hypothesis could not be rejected.

Interpretation of the Findings

Findings from Literature Review

An overview of the background for this study was provided in the literature review in Chapter 2. MI is an EBP developed to assist with behavioral change and the resolution of ambivalence when an individual is considering a change. Recent studies have given much attention to MI because of the promising treatment outcomes it has yielded in a wide range of clinical problems (Ayres et al., 2014; Chang et al., 2014; Fitzsimmons & Barrowclough, 2019; Li et al., 2016; Miller & Rollnick, 2013; Riper et al., 2014). Studies have documented the usefulness of MI in eating disorders, correctional programs, nutrition, substance use disorders, and medication adherence (Höjdahl et al., 2015; Macdonald et al., 2012; Palacio et al., 2014). Research suggests individuals who have been diagnosed with opioid use disorders respond favorably to MI interventions (Ayres et al., 2014; Chang et al., 2014; Li et al., 2016). However, there have been no studies examining which factors lead to a provider using MI in treating opioid use disorder, or how such clinicians view this treatment with the opioid-dependent population.

The effectiveness of MI in many clinical settings encourages further exploration of the use of MI in opioid use disorder treatment, as well as ways to increase provider's usage of MI in such settings (Aviram & Westra, 2011). The results of the study did not confirm the hypotheses of this study, as no significant relationship was found between provider's attitudes and knowledge of MI and predicting their intention to use MI with opioid dependent clients. Furthermore, the findings of this study did not confirm previous

research that suggests, the attitudes, training, and beliefs of mental health providers strongly influence their use of MI with a client (Hall et al., 2015; Miller & Rollnick, 2013).

Interpretation of Findings and Theoretical Framework

The purpose of this study was to examine the attitudes and knowledge of mental health providers toward MI and to examine if these two variables predict their likelihood of using MI as an intervention with opioid-dependent clients. The results of the study did not confirm the hypotheses of the study, as no significant relationship was found between provider's attitudes about MI and predicting their intention to use MI with opioid dependent clients. Additionally, the results of the study did not confirm the hypotheses of this study, as no significant relationship was found between provider's knowledge of MI and predicting their intention to use MI with opioid dependent clients.

The literature suggests TBP provides an appropriate framework for predicting an individual's intention to engage in a specific behavior because of its focus on the attitudes and knowledge that lead to action, as well as the perceived behavioral control an individual has over that action. When deciding whether to use MI in treatment, clinicians' knowledge and attitudes associated with MI often become accessible to conscious awareness. This awareness causes an individuals to deliberate and influences their own decisions. The TPB suggests that dormant intentions accessible in memory can be brought to conscious awareness and measured via means of a self-report (Haggard & Eitam, 2015). TBP has been used as a framework previously in behavioral change interventions and several studies have validated the theory's ability to predict behavior

and explain the key determinants of specific behaviors (Akbar et al., 2015; Arnautovska, et al., 2018; Kothe & Mullan, 2014; Overstreet et al., 2013; Steinmetz et al., 2016; Tyson et al., 2014).

For RQ1, TBP predicted that higher attitudinal scores of MI would be associated with a higher likelihood of using MI with opioid-dependent clients. Results of RQ1 did not confirm this prediction as higher attitudinal scores did not predict the usage of MI with opioid-dependent clients. For RQ2, TBP predicted that higher knowledge scores of MI would be associated with a higher likelihood of using MI with opioid-dependent clients. Results of RQ2 did not confirm this prediction as higher knowledge scores did not predict the usage of MI with opioid-dependent clients. Overall, MI attitudes and knowledge of MI were not significant predictors of usage of MI and the study did not confirm the predictions of TBP.

Limitations of the Study

One limitation of this study was my inability to clarify participants' questions because the study was not conducted in person. To help overcome this limitation, I provided participants with a number and e-mail address to contact me if necessary, in which none did. A second limitation of this study was nonresponse bias. Some participants did not complete the study in its entirety and in order to mitigate this limitation, two reminder posts were posted in the Facebook group and incomplete surveys were deleted prior to interpreting the data. Out of the possible 108 respondents, 71 respondents completed their survey in its entirety, met the inclusion criteria, and were included in data analysis; therefore, nonresponse bias was not a limitation in this study.

Other limitations of this study were self-report and researcher bias. Participants were expected to self-report in this study, because of the usage of self-administered surveys. To address the limitations of self-report bias and researcher bias, the responses to the survey were kept anonymous. This was done for each participant so that there was no way anyone, including myself, could identify participants. Social desirability bias was considered as a limitation in the study because the participants had the ability to search for correct answers to questions my absence. To test if social desirability bias was present in this study, mean scores were considered. If social desirability bias was present in this study, mean scores would have been inflated; however, they were not.

Another limitation of this study was the generalizability of this study. This study was limited to mental health providers who were members of the Recovery to Practice Facebook group who worked with opioid-dependent clients. If this study was conducted with mental health providers with other affiliations, their responses may differ. In addition, because of the low response rate of males in this profession, this study may also not be generalizable to males in the field Self-selection bias was also another limitation of this study. Participants were provided with the opportunity to self-select themselves as participants in the study, as long as they met the inclusion criteria, as opposed to being randomly selected. In order to minimize this limitation, no compensation was offered to participants and all participants remained anonymous. The sabotage effect was also considered as a potential limitation in this study. To overcome this limitation, no identifiable information was collected, and all responses remained confidential and anonymous.

Recommendations

This study revealed that mental health providers' knowledge of MI and attitudes toward MI did not predict their likelihood of using MI in opioid dependency treatment. This may be explained by the amount of follow-up training and the advanced skill sets it takes to effectively implement MI techniques, which may have been lacked by the majority of the study's respondents. Hall et al. (2015) found that despite MI training, providers did not sustain a change in MI practice unless follow-up training was provided on a regular basis. MI training, supervision, and feedback are required for a mental health provider to become proficient in MI techniques (Naar-King et al., 2017). Additionally, previous research has shown that a lot of the effectiveness of MI is a direct result of the characteristics of the mental health provider employing the technique (Csillik, 2013; Magill et al., 2014). Most respondents, 34 (48.4%), had only two to five years of experience in the mental health field. The lack of tenure in the field may have affected the provider's ability to obtain the sufficient follow-up training required to effectively and comfortably implement MI in the therapeutic setting. In future research, it is recommended that the likelihood of using MI be measured in MI follow-up training with mental health providers who have at least 5 years of experience in the field.

Additionally, it is common for providers to incorporate MI techniques into treatment modalities that are already commonly used in the profession rather than using MI as a stand-alone EBP in treatment. When correctly implemented, MI has proven to be more effective (10%–20%) compared to no treatment, and equal to other viable treatment options across a variety of presenting problems (Ayres et al., 2014; Chang et al., 2014; Li

et al., 2016). MI is most effective when combined with other psychosocial interventions (Jhanjee, 2014); nevertheless, MI may be offered either as a stand-alone treatment or in combination with other treatments. Therefore, it is recommended that the dependent variable be adjusted to include intention to use MI, in conjunction with other treatment modalities in future research. From this study, future researchers could focus on examining which other variables affect a provider's intention to use MI with opioid-dependent clients using a qualitative methods, which may allowing for a more in-depth understanding of which variables influence the usage of MI techniques.

Future researchers could also focus on examining how MI techniques are already incorporated into the treatment modalities used by current providers. In order to avoid some of the limitations seen in this study, it is recommended that researchers use random selection in studies similar to this one. It is also recommended that future researchers replicate this type of study using a different population of mental health providers so that the results of the study may be generalizable to a larger population of providers.

Implications

Overdosing by means of opioids continues to be one of the leading causes of accidental death in the United States (New Data on Marijuana Laws, Opioid Use, and Opioid Overdose, 2018). A variety of treatment options have been employ in an attempt to address the opioid epidemic in the United States, however, these options have failed to produce satisfactory long-term results and decrease opioid dependency, evident by an annual increase in opioid-related death (American Society of Addiction Medicine, 2016; Behavioral Health Trends in the United States, 2014). MI is a promising evidence-based

intervention that has been used in a variety of clinical problems, including substance use disorders (Ayres et al., 2014; Chang et al., 2014; Fitzsimmons & Barrowclough, 2019; Li et al., 2016; Miller & Rollnick, 2013; Riper et al., 2014). Miller and Rollnick (2013) suggest the skill level and attitudes of mental health providers regarding MI contribute to how successfully MI is implemented in the therapeutic setting. Furthermore, mental health providers' attitudes toward MI and knowledge of MI have been observed to be an imperative component in better understanding the intention to use MI in the therapeutic setting (Csillik, 2013; Spohr et al., 2016; Vader et al., 2010; Zuckoff, 2013). The TPB provides a unique approach of collecting data to assess an individual's intention to perform a specific behavior, such as a provider's intentions to use MI in the therapeutic setting. Previous research indicates that no studies exist that examine which factors lead a provider to use MI in opioid use disorder treatment. This study sought to examine whether the MI attitudes and MI knowledge of mental health providers predicted their likelihood of using MI as an intervention with opioid-dependent clients.

The results of this study indicated no significant relationship between MI knowledge and attitudes of mental health providers and predicting mental health providers' intention to use MI with opioid-dependent clients. The results of this study may contribute to positive social change by contributing to the development of more effective training protocols for providers who work with clients diagnosed with opioid use disorder. The results of this study may also allow researchers the ability to better understand and investigate which mechanism increase a provider's fidelity to MI. In addition, this study may contribute to the current scholarly literature that serves as the

foundation for understanding what constitutes effective opioid treatment, thus contributing to positive social change.

Methodological Implications

Examining the differences between MI knowledge and MI attitudes in different tenured mental health providers may allow for a better understanding of why providers choose to use MI with opioid-dependent clients. For example, mental health providers who have been in the mental health field over 5 years may have more advanced training opportunities in MI, which may result in a higher likelihood of using MI. Examining how MI techniques are being assimilated into the treatment modalities already used in the profession may allow for a better understanding of which variables increase a providers usage of MI. Therefore, it is recommended that future studies use provider's tenure and the assimilation of MI as moderator variables.

Conclusion

The TBP framework was beneficial in examining whether mental health providers' attitudes towards MI and knowledge of MI predicted their intention to use MI with opioid-dependent clients. The study's null hypotheses suggest that no relationship exist between mental health provider's MI attitudes, MI knowledge, and mental health providers' likelihood of using MI with opioid-dependent clients. The results of this study suggest that mental health provider's attitudes and knowledge of MI were high, but no significant relationship existed between the predictor variables and the criterion variable. This may be because the majority of respondents had only 2-5 years of experience in the mental health field, limiting their opportunity for extended, high quality MI training. This

may also be because MI is rarely used as a standalone option and is often used in combination with other treatment modalities. In the future, it is suggested that future research in this area consider provider's tenure and the assimilation of MI as moderating variables to determine if these aspects affect the relationship between mental health provider's attitudes and knowledge of MI and their likelihood to use MI with opioid-dependent clients.

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Appendix A: Demographic and Screening Questionnaire

Completion of this questionnaire is significant for the study. All records will remain confidential.

Please check or fill the appropriate line.

Gender:
_____ Male
_____ Female
_____ Transgender
_____ Gender-neutral
_____ Not Listed

Age _____

What type of professional license do you hold (please spell out acronyms)?
_____

Do you provide services to clients with opioid use disorder?
_____ Yes
_____No

How many years of experience do you have working as a mental health provider post-licensure? _____

Have you previously, or are you currently using MI with clients with opioid use disorder?
_____Yes
_____No

How likely are you to use the MI approach with clients who suffer from opioid dependency? Please use a scale of 1 to 5, where 1 is not at all likely and 5 is extremely likely
_____

1 – Not at all likely
2 – Somewhat unlikely
3 –Somewhat likely
4 – Likely
5 – Extremely likely

Appendix B: Motivational Interviewing Quiz By Dr. Leffingwell

The following statements are either factually true or false or consistent with ("true") or inconsistent with ("false") a motivational interviewing approach. Indicate your response by circling the appropriate item to the right.

1.	Substance users must accept their problem (for example: "I am an alcoholic/addict.")	True	False
2.	Denial is a characteristic of the disease of addiction.	True	False
3.	Therapists' expectancies for their client's abilities to change have no effect upon whether	True	False
4.	Research has failed to find support the existence of an "addictive personality."	True	False
5.	Substance users need to "hit bottom" before they can	True	False
6.	If clients are resistant to talk about changing substance use, direct confrontation and	True	False
7.	Resistance to talking about substance use is the direct result of denial, a symptom of the	True	False
8.	Counselors should emphasize personal choice over clients' behaviors, including substance	True	False
9.	Substance abusers are generally incapable of making sound decisions in their current state of	True	False
10.	Resistance is best thought of as a product of the interpersonal context in which it is observed.	True	False
11.	Addicts and alcoholics are not capable of exerting control over their substance use	True	False
12.	Readiness to make change is the client's responsibility – no one can help them until they	True	False
13.	The best way to motivate substance users is to help them resolve their ambivalence about	True	False
14.	External pressure and consequences is the only way to make substance abusers change.	True	False

15. Which of the following are principles of a Motivational Interviewing approach to dealing with substance use? (select all that apply):

D Breakdown denial D Develop discrepancies D Confront resistance

D Express empathy

D Acceptance of label ("alcoholic/addict") is required

D Educate about risks

D Maximize external pressure

D Use subtle coercion

D Support self-efficacy

D Roll with resistance

D Give direct advice

D Give clear consequences

D Require abstinence as only acceptable goal

D Encourage submission to disease

D Avoid argumentation

Appendix C: Motivational Interviewing Quiz - Key

1.	Substance users must accept their problem (for example: "I am an alcoholic/addict.") before they can get help.	True	**False**
2.	Denial is a characteristic of the disease of addiction.	True	**False**
3.	Therapists' expectancies for their client's abilities to change have no effect upon whether change occurs.	True	**False**
4.	Research has failed to find support the existence of an "addictive personality."	**True**	False
5.	Substance users need to "hit bottom" before they can change.	True	**False**
6.	If clients are resistant to talk about changing substance use, direct confrontation and persuasion are required to help the	True	**False**
7.	Resistance to talking about substance use is the direct result of denial, a symptom of the disease of addiction.	True	**False**
8.	Counselors should emphasize personal choice over clients' behaviors, including substance use.	**True**	False
9.	Substance abusers are generally incapable of making sound decisions in their current state of addiction.	True	**False**
10.	Resistance is best thought of as a product of the interpersonal context in which it is observed.	**True**	False
11.	Addicts and alcoholics are not capable of exerting control over their substance use behavior.	True	**False**
12.	Readiness to make change is the client's responsibility – no one can help them until they decide they are ready.	True	**False**
13.	The best way to motivate substance users is to help them resolve their ambivalence about change.	**True**	False
14.	External pressure and consequences is the only way to make substance abusers change.	True	**False**

15. Which of the following are principles of a Motivational Interviewing approach to dealing with substance use? (select all that apply):

D Breakdown denial 0 **Develop discrepancies** D Confront resistance

0 **Express empathy** D Acceptance of label ("alcoholic/addict") is required

D Educate about risks

D Maximize external pressure D Use subtle coercion 0 **Support self-efficacy**

0 **Roll with resistance** D Give direct advice D Give clear consequences

D Require abstinence as only acceptable goal

D Encourage submission to disease

0 **Avoid argumentation**