Buprenorphine as an Efficacious Treatment for Opioid Dependency?

A Survey of Counselors Attitudes

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This dissertation titled
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A Survey of Counselors Attitudes.

by

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Abstract

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Buprenorphine as an Efficacious Treatment for Opioid Dependency? A Survey of Counselor Attitudes (149 pp.)

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The purpose of this study was to measure the attitudes of a national representative population of counselors toward buprenorphine as a treatment for opioid addiction. The current study sought to build on the existing literature to include the attitudes of counselors in mental health settings, as these treatment providers are likely to encounter clients with addiction issues.

A sample of 65 substance abuse counselors and 57 non substance abuse counselors completed an online survey which examined their respective attitudes toward three treatment options for opioid addiction: 1) Buprenorphine; 2) Methadone; and 3) Counseling. Demographic information was gathered on the survey as well as information related to the experience and familiarity that counselors had with buprenorphine and methadone. Data was analyzed using a two-way Analysis of Variance (ANOVA) with a between and within factor. This analysis revealed a statistically significant difference in the mean scores between substance abuse counselors and non substance abuse counselors regarding their attitudes toward the three treatments for opioid addiction.

The results indicated that non substance abuse counselors had slightly higher mean scores for all three treatment measures than did substance abuse counselors. However, both groups of counselors had higher mean scores for methadone than for
buprenorphine. The reported preference for methadone over buprenorphine in this study suggests that buprenorphine has not yet been readily adopted as an efficacious treatment for opioid dependency.

Results further indicated that there were significant differences in attitudes toward treatment for opioid addiction based on buprenorphine, methadone and counseling as treatment options. Additionally, there was no interaction effect between counselor groups and treatment interventions. The implications of these findings, the limitations of the study, and directions for future research are discussed. This research supports the view that education of counselors regarding the efficacy of buprenorphine is critical if the medication is to increase the availability and accessibility of treatment to individuals with opioid dependency. It further highlights the need for counselor educators to incorporate information regarding pharmacotherapy into content for addiction courses.

Approved:_______________________________________________________________

Thomas E. Davis

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Chapter One: Introduction

Opioid abuse and addiction has emerged as a major public health issue in the United States (Mendelson, Flowers, Pletcher, & Galloway, 2008). The word opioid encompasses both illicit drugs (heroin) and licit drugs (prescription pain medications). Licit drugs include the many prescribed opioids such as Darvocets, Percocets, Vicodin, Oxycontin/Oxycodone, Codeine, Morphine, Ultram, and Diluadid.

Between 1990 and 2003, the rate of young adults initiating the use of prescription opioids that were not authorized by a physician, tripled. Young adults are more likely to start abusing prescription opioids than they are illicit opioids such as heroin (Mendelson, et al., 2008). In a national survey of 12th graders, the prevalence of prescription drug misuse was reported to be second, after marijuana, with the abuse of Vicodin (an opioid) reported as the most abused prescription drug (Compton & Volkow, 2006a).

Non-medical use of prescription opioids has been highly correlated with other drug use behaviors in adolescents such as cigarette smoking, heavy drinking, and marijuana use (McCabe, Cranford, & West, 2008). According to the Drug Abuse Warning Network (DAWN, 2005), visits to emergency departments, involving opioid abuse, have more than doubled between 2001 and 2005. Visits involving prescription opioid abuse over the same time period have increased by 24%.

People who misuse prescription opioids are not only accessing emergency departments, they have also been seeking treatment in record numbers. Between 1995 and 2005 the number of people accessing treatment for prescription opioid abuse more than tripled (Substance Abuse and Mental Health Services Administration (SAMHSA), 2005). According to the National Survey on Drug Use and Health (NSDUH) Report,
(SAMHSA, 2005), the estimated numbers of people over the age of twelve years who had used oxycodone non-medically, at least once in their lifetime was 11 million. In a 2008 report, opioid pain relievers in general, were second only to marijuana with regard to past year dependency or abuse, with an estimated 1.7 million classified with abuse of or dependency on pain relievers (SAMHSA, 2009).

Concurrent with the emergence of prescription opioid abuse and dependence, has been the increased emphasis on the treatment of pain. Physicians face disciplinary action if they fail to adequately treat pain, thus creating a dilemma between the imperative to treat pain and concerns about creating an addiction to prescription opioids which are prescribed for pain (Mendelson, et al., 2008).

A study of clients attending a methadone clinic found that 80% of people abusing prescription opioids reported that they started their use to relieve pain (Brands, Blake, Sproule, Gourlay, & Busto, 2004). It is estimated that approximately 75 million Americans experience chronic pain (National Pain Foundation, 2007). Thus the number of people at risk of potential addiction issues is significant.

While heroin use has increased in the United States, the increase has not been as dramatic nor have the numbers of people affected been as large as those engaging in prescription opioid use. According to statistics from the 2008 NSDUH which may underestimate heroin use, current (past-month) heroin users over the age of twelve grew in numbers from 153,000 in 2007 to 213,000 in 2008 (SAMSHA, 2008). It was estimated according to data from DAWN, 2002, that visits to the emergency department related to heroin use, numbered 93,519. The number of Americans that reported heroin
use at some time in their lives in 2003 was estimated to be approximately 3.7 million (National Institute on Drug Abuse (NIDA), 2003). While the numbers affected by heroin use are not as high as other substances of abuse such as marijuana, as will be discussed later in this chapter, the cost of both heroin and prescription opioid use to society and the individual is enormous.

In order to address the issue of opioid dependence and abuse in the United States, and to increase access to treatment, the pharmacological treatment option of buprenorphine was developed and launched in the USA in 2003. Buprenorphine is the first pharmacotherapy treatment to become available to clients on an outpatient basis in the privacy of a physicians office (NIDA, 2005). “As of March 2004, 3,951 U.S. physicians were eligible to prescribe buprenorphine to patients” (p. 6). The report did not indicate how many of these physicians were actually prescribing buprenorphine, or what percentage of the population of physicians the number represents. Buprenorphine is the generic drug name of a semi-synthetic opioid, marketed under the brand names Subutex and Suboxone.

This chapter provides an overview of opioid addiction in the USA, and continues with details of the study. The purpose of the study was to determine the attitudes of both substance abuse counselors and mental health counselors towards treatment interventions for opioid dependence. Substance abuse counselors specialize in addiction related issues, and it is important that they have knowledge and awareness of pharmacotherapy options for the treatment of opioid dependence. However, with the increase in opioid abuse and dependency across the US, mental health counselors are highly likely to encounter clients
with these issues. The chapter addresses the background to the study, a statement of the problem, the significance of the study, research hypotheses, limitations and delimitations, and definitions of terms used in the study.

**Background of the Study**

Opioid addiction continues to be a major public health problem in the United States. While the use of heroin accounts for a relatively small percentage of the total illicit drug use, approximately five percent, the consequences of heroin addiction surpasses that of more widely used illicit substances such as marijuana (Mark, Woody, Juday, & Kleber, 2001; Jones, et al., 2009). Opioid addiction has been associated with diminished quality of life, significant mortality rates, considerable societal costs, and a substantial burden on the criminal justice system (Becker, Sullivan, Tetrault, Desai, & Fiellin, 2008). Therefore, the development and implementation of effective treatment techniques remains a high priority.

Estimated heroin addiction treatment costs in the USA in 1996 were $1,241,000,000 for medical care costs; medical complications resulting from heroin addiction such as AIDS, Hepatitis B, Hepatitis C, pregnancy problems and tuberculosis were estimated at $5,040,000,000 (Mark, et al., 2001). Productivity costs due to mortality, unemployment, and incarceration were anticipated to be $ 11,513,000,000 and crime costs were estimated at $ 5,220,000,000. Finally, social welfare costs were projected to be approximately $ 99,000,000. The total economic cost of heroin addiction for the year 1996 was US$ 21.9 billion. According to Mark et al., (2001) the cost of heroin made up 20% of the total speculated economic costs of illicit drug use. When
calculating economic costs the authors reported erring on the side of conservative, hence the actual cost may even be higher than projected.

Similarly, prescription opioid abuse carries a significant economic cost. Annual costs in the Unites States have been estimated to be “…4.6 billion in the workplace, $2.6 billion in health care, and $1.4 billion to the criminal justice system (Jones, et al., 2009, p. 132). Apart from the large economic burden related to opioid addiction, high mortality and morbidity rates are characteristic of this disorder (Scherbaum & Specka, 2008; Smyth, Hoffman, Fan, & Hser, 2007).

A review of longitudinal studies that tracked people with opioid addictions for years after their initial episode of treatment, found high rates of both addictive use and mortality amongst those studied. Less than one third of initial samples were classified as alive and abstinent after decades of observation (Scherbaum & Specka, 2008). Similarly, a study that followed the progress of a cohort of 581 male heroin addicts over a period of more than 33 years found that nearly half (48.5%) were confirmed as deceased. The leading causes of death were (1) heroin overdose, (2) chronic liver disease, (3) accidents, (4) cardiovascular disease, and (5) homicide. The mean age at the time of death was 46.9 years (Smyth, et al., 2007). Other physical problems associated with opioid addiction include abnormal lung function and a higher incidence of infectious diseases (Hser, et al., 2004). The rate of exposure to hepatitis C has been reported as high as thirty times more than among the general population. Similarly the incidence of hepatitis B occurs at a significantly higher rate among opioid users (85.6%) than the general population (5.7%).
Three relevant characteristics of opioid dependent persons have been identified, 1) low retention in treatment; 2) continued illicit drug use; and 3) low motivation for treatment. This study was concerned with the low retention rate in treatment, more specifically with whether or not the attitudes of treatment providers toward this client population, may influence retention in treatment (Copenhaver, Bruce, & Altice, 2007).

Emphasis has been placed on the importance of the counselor’s emotional reactions to the client as a determinant of treatment outcomes (Najavits et al., 1995). The quality of the counseling relationship has consistently been correlated with client outcomes. Lambert and Barley (2001) reported that the therapeutic alliance between counselor and client, accounted for thirty percent of the variance in client outcome. The emotional and attitudinal responses of the counselor have been considered to be particularly critical in the treatment of people with substance abuse issues. “Therapists’ emotions toward substance abusers are presumed different from their response to other populations: more intense, more negative, and more likely to impact on treatment” (Najavits et al., 1995, p. 670).

**Statement of the Problem**

Despite empirical evidence that pharmacotherapy combined with counseling has consistently yielded the most effective substance abuse treatment interventions, relatively few clients receive medication as part of treatment (Fitzgerald & McCarty, 2009). It has been estimated that as few as 15% of those needing pharmacotherapy treatment for opioid addiction are receiving it (Merrill, 2002). An assessment of attitudes toward the use of buprenorphine indicated minimal support for the medication (Knudson, Ducharme,
Roman, & Link, 2005). More than two thirds of the participants (1,972 substance abuse counselors) reported not knowing whether or not they perceived buprenorphine as an effective treatment. The fact that buprenorphine is a relatively new form of treatment, introduced within the USA in 2003, may contribute to this latter finding.

Therefore, despite the availability of medication that may improve treatment outcomes for opioid dependent people, counselors’ lack of knowledge or negative attitudes toward the medication on the part of counselors may preclude it from being presented to the client as a treatment alternative. “Clinicians’ beliefs and awareness of treatment techniques may influence what innovations are perceived as needed and adoption of them” (Arfken, Agius, Dickson, Anderson, & Hegedus, 2005, p. 547). The current research sought to expand the focus of prior research on the topic with substance abuse counselors to also include the attitudes of community mental health counselors toward buprenorphine.

The introduction of buprenorphine for clients with opioid dependence was intended to increase the availability and accessibility of treatment for this population. However, since its inception there have been some barriers and challenges to the practical application of this treatment. Attitudinally, there have been significant concerns amongst traditional abstinence based treatment providers that those maintained on buprenorphine will be excessively resistant to addiction counseling (Caldiero, Parran, Adelman, & Piche, 2006). The Drug Addiction Treatment Act (DATA, 2000) mandates that patients being prescribed buprenorphine are required to be referred for counseling. However, compliance with this mandate is lacking and hence clients can simply receive their
medication without attending counseling services (Caldiero et al., 2006). The Drug Addiction Treatment Act of 2000 stipulates that when physicians submit notification to obtain the required waiver to practice opioid addiction therapy, they must attest to their capacity to refer their patients for appropriate counseling (DATA, 2000). Another identified issue in the acceptance of buprenorphine as a treatment for opioid dependent people has been the opposition to the use of medications in some 12-step treatment facilities where many of the staff are in recovery from addiction themselves, and subsequently encourage clients to not utilize pharmacotherapy options (Fitzgerald & McCarty, 2009).

A recent study concerned with the underutilization of pharmacotherapy’s in the treatment of opioid dependence, investigated the attitudes of both clients and counselors toward the use of four medications in treating opioid dependence (Rieckmann, Daley, Fuller, Thomas, & McCarty, 2007). The authors developed a medication opinions survey designed to measure attitudes, beliefs, perceived social norms, and intentions to use four medications of interest; buprenorphine, clonidine, ibogaine, and methadone. Participants included 376 substance abuse counselors and 1,083 clients from Oregon and Massachusetts. Findings from this study indicated that attitudes, perceived social norms and intentions toward buprenorphine were neutral at best, with some tendency toward negative.

The Rieckmann et al. (2007) research was largely influential in the development of the current research. The current study sought to partially replicate the use of the medication opinions survey; more specifically the segments of the survey related to
buprenorphine and methadone and survey a nationally representative group of counselors drawn from the American Counseling Association (ACA). Additionally, participants of the Rieckmann et al. (2007) study were recruited from methadone programs, residential programs, and outpatient programs. Because substance abuse counselors are not the only clinicians who treat clients with addiction, the current study sought to identify the attitudes of any counselors who are likely to be involved in the treatment of people with opioid addiction, rather than solely focusing on substance abuse counselors.

**Significance of the Study**

The focus for this study was on buprenorphine because it is the most recent pharmacotherapy treatment for opioid dependency. Furthermore, the introduction of buprenorphine has the potential to provide available treatment for those in need, who have previously been unable to access pharmacotherapy services because it can be offered in an outpatient setting. Knudson, et al. (2005) considered the diffusion of knowledge about buprenorphine and its associated acceptability as a treatment option amongst counselors. Results of this study indicated that further efforts to increase counselor’s knowledge about buprenorphine were necessary. The authors recommended that continued attention be given to counselor’s attitudes toward buprenorphine (Knudson, et al., 2005).

Buprenorphine was compared to methadone in the current study because methadone maintenance, despite controversy has shown robust effects for retention in treatment, and reduction in opioid abuse and criminality (Johansson, Berglund, & Lindgren, 2007). Therefore, whenever a relatively new pharmacotherapy is introduced as
a treatment option, it is germane to compare it to existing treatment that has evidence-based efficacy. “…ethical considerations would dictate that new pharma
cotherapeutic treatments be compared with ‘standard’ or already proved treatments” (Ling & Wesson, 2003, p. S49).

Comparisons to counseling were included in the current research in an effort to determine whether or not a national representation of counselors would indicate a preference for counseling as a treatment for opioid dependency rather than the use of pharmacotherapy interventions. If counselors lack knowledge about or have a negative attitude toward buprenorphine, then it may not be offered to their clients as a viable treatment option. Additionally the current research endeavored to identify if there was any correlation between counselors in recovery from addiction themselves, and resistance to pharmacotherapy treatments.

The current study sought to investigate attitudes toward buprenorphine as a treatment option amongst counselors from across the United States. There are a limited number of studies that examine the relationship between attitudes, education, experiences, and beliefs, and how these factors influence the counseling relationship and treatment outcome. This study attempted to determine whether or not these variables are related and sought to build on the Rieckmann, et al. (2007) study in determining intentions to recommend buprenorphine as a treatment option for clients with opioid dependency. This is not only relevant to counselors in the field who need to remain cognizant of any biases or prejudices they may have toward a modality of treatment, but is also germane for counselor educators.
The inclusion of addiction studies in the new Council for Accreditation of Counseling and Related Educational Programs (CACREP) standards for the training of counselors warrants the exploration of the educational requirements of counselors in training. If there is a remaining lack of knowledge about buprenorphine or negative attitudes toward clients who are prescribed this medication, this information could be used to inform counselor educators about additional treatment modalities content to be incorporated into addiction courses.

**Research Questions and Hypotheses**

The primary question guiding this study was to explore attitudes and beliefs of two groups of counselors (substance abuse counselors and mental health counselors) toward three treatment strategies for opioid treatment (buprenorphine, methadone and counseling). The specific null hypotheses developed were:

**Hypothesis One**: There are no significant differences in attitudes toward treatment for opioid addiction between substance abuse counselors and mental health counselors.

**Hypothesis Two**: There are no significant differences in attitudes toward treatment for opioid addiction based on buprenorphine, methadone and counseling as treatment options.

**Hypothesis Three**: There is no interaction effect between the professional identification of counselors and treatment options and attitudes toward treatment for opioid addiction.
**Delimitations of the Study**

There were three delimitations that should be considered for this study. The first was the study’s focus on the attitudes of counselors who are members of the American Counselors Association (ACA). There are other treatment providers such as nurses, physicians, social workers and psychologists who administer buprenorphine as a treatment modality to people with opioid addiction. The second delimitation of this study was the focus on buprenorphine, methadone, and counseling, and the exclusion of other forms of pharmacotherapy. Thirdly, buprenorphine is a pharmacotherapy treatment for opioid dependency. Therefore, the content of this study was centred on opioid addiction. While the researcher acknowledges that few clients who access treatment for substance dependency issues will present with only problems with opioids, buprenorphine treatment is designed to specifically treat opioid addiction, and therefore the scope of this study was confined to this disorder.

**Limitations of the Study**

The researcher has identified five limitations of this study. First, participants were contacted via email and completed the survey online. Thus the researcher had no control over the conditions under which the survey was completed therefore there were some external validity issues. Second, participants were not provided with any information about buprenorphine prior to the completion of the survey. Third, it was assumed that participants would respond to survey items in an honest manner, and that accurate information would be provided. Fourth, there were issues related to recruitment of participants. The recruitment of members of the American Mental Health Counselors
Association (AMHCA) division of the ACA was conducted by the marketing company for that division rather than by the researcher. The researcher was advised by the company that the survey was distributed to a computer generated random sample. Additionally, due to the smaller numbers of counselors who were members of the International Association of Addictions and Offender Counselors (IAAOC) division of ACA, the survey was distributed to all of the counselors within that division, rather than a randomly assigned portion. Finally, the research design which was quasi-experimental restricted the interpretation of the results from making causal inferences.

**Definition of Terms**

For the purposes of clarification the terms used in this study were defined accordingly:

**Buprenorphine.** A pharmacotherapy treatment, which works as a partial agonist at the mu type of opioid receptor, and an antagonist at the kappa-opioid receptor. This medication is effective in the prevention of opioid withdrawal syndrome in opioid dependent individuals and has a “ceiling” effect; in that once the correct dose has been determined for an individual further dose increases produce no additional effects (McCance-Katz, 2004). There are two formulations of buprenorphine: suboxone and subutex.

**Counselor.** Counselors in the current study are defined by their membership status in the American Counseling Association (ACA). “Members of the American Counseling Association must clearly differentiate between professional membership, which implies the possession of at least a master’s degree in counseling, and regular
membership, which is open to individuals whose interests and activities are consistent with those of ACA but are not qualified for professional membership” (ACA, 2005, C.4.f, p. 10). Within ACA there are the divisions of AMHCA and IAAOC. While it is possible to be members of both AMHCA and IAOCC, for the purpose of this study “Mental Health Counselors” will be used to refer to practitioners who work predominantly with clients without significant alcohol or other drug problems. The term “Substance Abuse Counselors” will refer to practitioners who work predominantly with clients who have significant alcohol and other drug problems.

**Methadone.** Methadone is an oral drug that has rapid mucosal absorption after oral administration. Though it is chemically different from morphine and heroin, methadone acts upon central opioid receptors in a similar manner as other opioid drugs (Brown, Kraus, Fleming, & Reddy, 2006).

**Opioid.** The term used to describe natural opiates such as morphine, and semi-synthetic (heroin) and synthetic/prescription (Oxycodone) substances with morphine-like action (Diagnostic and Statistical Manual of Mental Disorders Fourth Edition, Text Revision, 2000), (DSM-IV-TR). The rise in the abuse of prescription opioids in the United States has been particularly striking with Oxycodone (Oxycontin), Hydrocodone (Vicodin), and Hydromorphone (Dilaudid) (Sigmon, 2006).

**Opioid dependence.** A maladaptive pattern of opioid use leading to significant impairment or distress that occurs within a twelve-month period, which includes at least three or more of the following: (1) the development of tolerance in which there is a need for increased amounts to achieve intoxication or desired effects or there is a diminished
effect with continued use of the same amount; (2) the manifestation of withdrawal symptoms following the cessation of use, and continued use to prevent withdrawal; (3) the drug use occurs over an extended period of time and at higher doses than was intended; (4) there is a persistent desire to reduce or unsuccessful attempts to control use; (5) significant time is spent engaging in activities to obtain the substance, use the substance, or recover from the substance use; (6) social, occupational, or recreational activities are impacted or forfeited because of use; or (7) continued use despite recurring physical or psychological problems that are a result of the substance use (DSM-IV-TR, 2000).

**Suboxone.** Suboxone is a combination of buprenorphine and naloxone, which is an opioid antagonist. The naloxone was added as a means of deterring illicit diversion and intravenous use of the medication (Stine, Greenwald, & Kosten, 2003). This formulation contains buprenorphine and naloxone in a ratio of 4:1.

**Subutex.** Subutex is one of the two formulations of buprenorphine. It was approved by the FDA for sublingual administration. Subutex is administered in tablet form and contains only buprenorphine (Stine, Greenwald, & Kosten, 2003).
Chapter Two: Literature Review

In the past decade, progress has been made in the development of pharmacotherapy treatments for the treatment of opioid addiction. Particularly, the availability of buprenorphine on the market has the potential to enhance treatment effectiveness. However, reports of the underutilization of these treatment innovations (Rieckmann, et al., 2007) warrants investigation into the knowledge of and attitudes toward the use of medications for the treatment of opioid addiction.

The literature review begins with a broad overview of attitudes and perspectives regarding addiction and more specifically, opioid addiction. Significant theories, models and medical research are discussed. In order to better understand the context of current attitudes, a history of opioid addiction in the United States and relevant federal policies will also be outlined. This chapter goes on to describe the development and role of pharmacotherapy treatment for opioid addiction and the role of counseling in the treatment of opioid addiction. The chapter concludes with a review of attitudinal studies conducted in relation to the treatment of opioid addiction, and studies specifically focused on the efficacy of buprenorphine compared to methadone will be presented.

Evolving Attitudes and Perspectives Regarding Addiction

Attitudes toward addiction in general have evolved over time and a variety of perspectives/theories have shaped the treatment options made available to those with addiction issues. Many of these perspectives or theories conflict in terms of treatment goals and treatment philosophies. Historically, societal attitudes labeled those addicted to drugs as “bad” people who needed to be ostracized from the community by way of
institutionalization (George, 1990). Consequently, those with addictions were either committed to mental asylums or received jail sentences. However, efforts to understand the nature of addiction have influenced approaches to treatment options.

**The psychoanalytic theories of addiction.** Proponents of the psychoanalytic theory purport that addiction to substances is driven by an individuals attempts at ‘self-correction.’ That is, addiction to drugs is a compensatory mechanism for inadequacies related to an individual’s sense of self or self-respect, inabilitys to regulate intense emotions, and ineffectual relationship skills (Khantzian, Dodes, & Brehm, 2005). This theory rejects the concept that addiction is a moral issue or a matter of will power to be treated in a punitive manner, and instead supports psychological treatment interventions. “The dominant conscious motive for drug use is not the seeking of ‘kicks,’ but the wish to produce pharmacologically a reduction in distress that the individual cannot achieve by his own psychic efforts” (Wieder & Kaplan, 1969, p. 428). Thus, according to this perspective the use of drugs is the self-correction of an immature ego.

In 1995, Hagman extended the psychoanalytical model to incorporate methadone as a valid component of opioid addiction treatment. He proposed the following five principles:

1) that the addictive use of substances is an attempt to repair deficits in self-regulation and self-structure; 2) that methadone is a substitute for the addictive drug, which has ultimately come to fail in its self-repair function; 3) that once stabilized, the methadone patient seeks to use other aspects of program services, in particular the counseling relation, to continue the work of
self-repair and to maintain stability; 4) that the principles by which the patient organized his or her subjective reality in the “street” impact on the relationships with counseling staff as resistance and transference; and 5) that it is the work of the methadone counselor to manage the treatment relationship in such a way as to assist the patient in developing new, more adaptive and healthy structures of self-organization (p. 168).

This model shifted the emphasis away from drug use as a bad or morally weak behavior toward the concept that addiction required both medical and psychological treatment.

**The disease model of addiction.** Similarly, the disease model of addiction shifted the focus of addiction from a moral or legal standpoint to that of a medical concern. Proponents of this model argue that addiction is characterized by changes in brain function and structure (Leshner, 1997). Accordingly, a major goal of treatment is to reverse or compensate for these changes in the brain. Addiction is viewed as a chronic relapsing disease of the brain, an understanding of which can inform treatment policies and affect societal attitudes toward individuals with drug addiction. “We need to face the fact that even if the condition initially comes about because of a voluntary behavior (drug use), an addict's brain is different from a nonaddict's brain, and the addicted individual must be dealt with as if he or she is in a different brain state” (p.46).

**Self-medication model.** The core premise of this model is that individuals who have addiction issues do not randomly choose the substances of abuse rather they continue to use and abuse those substances which have a specific psychopharmacological action which eases their psychological suffering (Khantzian, Dodes, & Brehm, 2005).
Efforts to regulate disturbing emotions or feelings of rage have been attributed to opioid use. The pain-relieving properties of opioids can act as an agent to soothe painful affect states and alleviate the symptoms of underlying psychiatric disorders.

**Exposure and adaptive orientation.** Explanations of opiate addiction have been conflicting at best and often “chaotic and bewildering” (Alexander & Hadaway, 1982). Two viewpoints presented by these authors as predominant and influential in both treatment philosophy and public policy were 1) Exposure Orientation, and 2) Adaptive Orientation. These orientations were considered to be fundamentally incompatible with each other, leading to confusion and division regarding how people with opioid addictions should be treated.

As the name suggests, proponents of the Exposure Orientation argued that opiate addiction was caused by exposure to opiates. Therefore, anyone who used opiates on more than a few occasions would become addicted (Alexander & Hadaway, 1982). Treatment focus according to this orientation was to remove the need for opiates created by the initial use. Hence, drug treatment and counter conditioning of the individual were considered optimum interventions. Because the drug itself was considered the cause of the addiction, those who favored this orientation were advocates for drug prohibition thereby implying reliance on police powers.

Conversely, the Adaptive Orientation viewed opiate addiction as primarily a behavior developed as a coping mechanism for insurmountable distress. Accordingly, opiate addiction was considered secondary to underlying psychological problems (Alexander & Hadaway, 1982), with treatment focused on identifying issues and stressors
that existed prior to drug usage, and alleviating these problems. Social policy therefore, was focused on promoting the development of and access to institutions that were able to provide people with opiate addictions alternative adaptive responses. This orientation negated the validity of prohibition, arguing that even if it were possible to eliminate the availability of opiates those who were addicted would seek out other destructive methods to relieve their distress.

**Neurobiology**

Medical research has in recent years reinforced the disease model of addiction due to developments in understanding the biology of opioids and the human brain. In particular, knowledge related to the endogenous opioid system and its potential relevance to opioid addiction (Simon, 2005) has been instrumental in creating a new paradigm for understanding addiction. Opioid receptors in the brain and natural ligands for receptors activated by drug use have been identified. Drug addiction, in general has been compared to other chronic brain diseases. “Both the Parkinson’s patient and the drug addict are suffering from dysfunctions of the dopamine system – the manifestations of one are primarily motor and those of the other primarily behavioral, but both are brain diseases” (Leshner, 2003, p. 49). The primary site of brain dysfunction associated with drug addiction is the mesolimbic dopamine system. Brain circuits that are affected by drug abuse and addiction include the circuits that underlie feelings of reward, learning and memory, motivation and drive, and inhibitory control.

Additionally, research has documented the similarities between addiction to drugs and three other relatively common chronic illnesses: asthma, hypertension, and type II
diabetes (McLellan, O’Brien, Lewis, & Kleber, 2000). Findings of this research indicated that the etiology and course of all of these diseases were comparable. The authors concluded that drug addiction produces substantial and enduring changes in both brain chemistry and function.

Therefore, advances in neurobiology and medical research have provided authenticity to the chronic relapsing disease model. However, despite the progress made in science and medicine regarding addiction, the legacy of longstanding myths continues to linger.

**History of Opioid Addiction**

Drug abuse, in general, is a divisive and politically controversial subject (Musto, 1999). In the United States there have been dramatic shifts in attitudes toward drugs, drug abuse, and the treatment of those addicted to drugs, and public opinion has driven the nature of the treatment of addiction. Attitudes within American society over the past century toward addiction, have moved from initial tolerance, to punitive, to treatment focused, to more recently revisiting a punitive approach (Musto, 2005). These attitudinal shifts are inextricably linked to historical events and legislation.

Addiction to opiate drugs in the United States dates back to the post-civil war era when wounded veterans were treated with injections of morphine. Hence many veterans developed dependency issues (O’Brien, 2008). At the turn of the nineteenth century, the introduction of organic chemistry changed the availability of opioids from use in their natural form (morphine) to synthetic forms (Musto, 1991). One such form of opioid was introduced by the Bayer Company in 1898, and became known as “heroin”. During the
latter years of the nineteenth century and the beginning of the twentieth century, many patent medicines contained opium and in turn led to an increased incidence of addiction in the general population.

This increase in opioid addiction and the subsequent growing alarm of legislators regarding the emergent rise in the frequency of dependency to opioids resulted in Congress passing the Harrison Narcotic Act of 1914, which prohibited physicians from treating opiate addictions (O’Brien, 2008). Maintenance for people with “mere addiction” was considered outside the parameters of legitimate medical practice. Consequently, during the 1920’s and 1930’s the morphine and heroin problem declined. It was popular opinion that opioid addiction was confined primarily to “…the periphery of society and the outcasts of urban areas” (Musto, 1991, p. 44).

Not dissimilar to current times, true estimates of the size of the opioid problem were a matter of public debate. The Public Health Service published studies in 1915 and 1924, estimating that there were no more than a quarter of a million frequent users of opiates and cocaine in the United States, while the Treasury Department assessed that a little over one million were addicted. Both public opinion and government official attitudes toward people with opioid addictions at this time, was punitive. Those with addictions were labeled ‘moral wretches.’ In 1919 heroin addiction was linked to anarchism by the Mayor of New York City (this was not an isolated opinion), and in 1924 officials of New York City reported that people addicted to heroin were responsible for 75% of crimes committed. These incidents reflected a fear in the United States of
groups of people that were considered extreme domestic threats, and people with addiction were one of these groups (Musto, 2005).

As a result of the Harrison Narcotic Act, federal laws related to the sale and possession of opioids became greater in severity (Musto, 1991). The death penalty was introduced by the federal government in 1956 for anyone over the age of eighteen providing heroin to anyone under the age of eighteen, and mandatory minimum prison sentences were lengthened to ten years. Therefore between 1914 and the late 1960’s available treatment for opioid addiction was limited in the United States, and laws regarding opioid addiction reflected a punitive attitude toward those who were afflicted.

During the early 1970’s there was a significant shift in attitudes toward those with opioid dependency. President Nixon allocated 75% of his drug budget to treatment of opioid addiction, largely in response to the emergent heroin epidemic amongst personnel returning from the Vietnam War (Falco, 2005). Consequently, treatment interventions became the focus rather than policing and punishment.

However, the 1980’s saw a return to a more punitive approach and federal drug strategies were focused on reducing the supply of opioids into the United States. President Reagan promised to eradicate the ‘evil scourge’ of drugs (Falco, 2005). As a result federal funding for treatment, prevention and education was significantly reduced and drug enforcement funding more than doubled.

Since the 1980’s generally two-thirds of federal funding for drug strategies has been allocated to enforcement and interdiction, with substantially less amounts being spent on prevention and treatment (Falco, 2005). However despite this sizeable financial
effort to significantly reduce the availability of drugs in the United States, heroin is more available and affordable than it ever has been. Additionally, the emerging problem of prescription opioids has originated from within the United States and supply of these drugs are not able to be controlled by tightening border security, law enforcement, and international drug control policies.

Perhaps as the abuse of prescription opioids continues to be a major health issue in the U.S., federal policies may be forced to follow new directions. As mentioned earlier, the allocation of federal funding to treatment initiatives instead of enforcement in the 1970’s was primarily due to the prevalence of heroin addiction among personnel serving in the Vietnam War.

**Pharmacotherapy Treatment**

In the 1960’s and 70’s heroin abuse and addiction became more widespread (O’Brien, 2008). Efforts to address this increase in opioid addiction resulted in the development of four pharmacotherapy models. The attitude toward drug abuse and addiction had shifted from a punitive stance to a treatment-oriented approach. The four pharmacotherapy treatment models included; (1) methadone, (2) naltrexone, (3) levo-alpha-acetylmethadol (LAAM), and (4) buprenorphine.

The introduction of methadone treatment in 1964 was an effort to provide accessible treatment for the rising use and abuse of heroin, and methadone clinics were established in the 1970’s. A major benefit of methadone treatment was that those receiving treatment were not engaged in high-risk behaviors that often characterized opioid addiction such as being exposed to Hepatitis C and HIV by sharing needles, and
engaging in criminal activities. A study of patients attending a methadone maintenance treatment program found that those who remained in treatment had a mortality rate of one percent versus those who left the program who had an eight percent mortality rate (Zanis & Woody, 1998). Additionally, those who were compliant with their methadone treatment were able to perform complex tasks, function in educational and employment settings, and exhibit normal reaction times. One of the major disadvantages of methadone treatment has been that it has become an alternative drug of dependence (O’Brien, 2008). Consequently, since its introduction, methadone has been diverted to the streets and been used illegally as a substitute for other opioids.

During the 1970’s there was much enthusiasm for the use of naltrexone as a pharmacotherapy treatment for opioid dependency (Rawson, et al., 2001). However, over the last decade the clinical use of naltrexone has been limited. Issues that have impeded its use include limited client interest, problems with pre-naltrexone detoxification, and a very high premature discontinuation rate after initial treatment.

LAAM, a derivative of methadone, became available in the United States for the management of opioid addiction in 1993. It was considered to be as effective as methadone in the treatment of opioid dependency and had the advantage of being able to be administered on alternate days or three times a week. For those with transportation difficulties and who lived a significant distance from a methadone clinic which required daily administration, LAAM was a more viable treatment option (Lowinson et al., 2005). However, due to reports associating LAAM with serious cardiac problems, it has not been available in the United States since 2004.
The US Food and Drug Administration (FDA) approved buprenorphine in 2002 and it entered the market in 2003 (Gunderson & Fiellin, 2008). Combined with the passage of the Drug Addiction Treatment Act of 2000, greater access to treatment occurred by allowing physicians who received specialized training to provide treatment services to people with addictions. Indications from clinical research suggest that psychosocial functioning significantly improved over time with the use of buprenorphine (Stine, Greenwald, & Kosten, 2003).

Buprenorphine is a pharmacotherapy treatment, which works as a partial agonist at the mu type of opioid receptor, and an antagonist at the kappa-opioid receptor. Found to be effective in the prevention of opioid withdrawal syndrome in opioid dependent individuals, it has a “ceiling” effect. That is, once the correct dose has been determined for an individual further dose increases produce no additional effects (McCance-Katz, 2004). This property of buprenorphine reduces the danger of an overdose, may limit the potential for abuse and diversion, and results in low toxicity (Stine, Greenwald, & Kosten, 2003). Additionally, the effects of exogenously administered opioids can be blocked by using buprenorphine, thereby indicating effectiveness in the reduction of illicit opioid use. In terms of treatment as a maintenance therapy, buprenorphine has a long duration of action, which reduces withdrawal symptoms when discontinued.

With the increasing numbers of people who abuse prescription opioids across the Unites States, the introduction of buprenorphine into office-based settings provides a previously unavailable treatment opportunity for those who are opioid dependent to access help. The availability of care under the management of a private practice
physician may increase the number of people seeking help during the early stages of addiction, as these people are unlikely to access the highly regulated licensed opioid treatment programs (Torrington, Domier, Hillhouse, & Ling, 2007). This would ultimately reduce the numbers of people experiencing long-term opioid abuse problems. As pharmacological treatments have advanced and changed, so too have societal and health professionals attitudes toward addiction.

**The Role of Counseling**

Pharmacotherapy alone is seldom sufficient treatment for addiction disorders. As a result Treatment Improvement Protocols (TIPS) were established to provide clinical guidelines related to best practice (Center for Substance Abuse Treatment, 2004). Accordingly, one of the treatment protocols, TIP 40, addresses guidelines for buprenorphine treatment. The recommendation for counseling to occur in conjunction with pharmacotherapy is further supported by the Drug Addiction Treatment Act (DATA), (2000) which stipulates that when physicians submit notification to obtain the required waiver to practice opioid treatment, they must attest to their capacity to provide appropriate referrals to counseling for their patients. Therefore, given that it has been deemed best practice for counselors to work conjointly with clients who are prescribed buprenorphine, it is important that counselors are both willing and able to provide effective treatment to this client population.

Although counselors do not prescribe buprenorphine, they are important in the diffusion of buprenorphine as a treatment modality. Usually counselors have the most direct and sustained contact with clients in treatment centers, and in community agencies
counselors are the frontline workers who clients access initially for help. Therefore counselors have a pivotal function in providing referrals and links to prescribing physicians and other supportive services (Knudsen, et al., 2005).

Additionally, there have been some indicators that counseling has some impact on the treatment outcomes for those who are prescribed buprenorphine. Historically cognitive behavioral approaches have demonstrated efficacy when combined with pharmacological therapies designed to treat a range of addictive disorders (Copenhaver, Bruce, & Altice, 2007). Evidence to date points more specifically to the promise of including cognitive behavioral content focused on building coping skills to initiate and maintain recovery, as well as skills for preventing or managing relapse during the phase of buprenorphine treatment for opioid dependence.

The influence of psychotherapy attendance on buprenorphine treatment outcomes was evaluated by Montoya et al. (2005). Participants received weekly individual standardized drug abuse psychotherapy based on cognitive behavioral therapy and some elements of interpersonal therapy. Results suggested that psychotherapy could improve the outcome of buprenorphine maintenance treatment for clients in that it significantly reduced the use of opioids and cocaine during treatment. However, in order to be able to provide appropriate services to clients with opioid addiction, it is essential that counselors have both knowledge of buprenorphine and an awareness of its efficacy.

**Attitudinal Studies**

Attitudes toward and perceptions of opioid addiction and its treatment was the focus of a questionnaire administered to nine hundred clients and two hundred and thirty-
seven agency personnel in twenty-five drug treatment clinics (Nurco, et al., 1987). Respondents who were treatment providers were divided into two ethnic groups: white (n=124), or black (n=88). Results indicated that white staff members of the respective treatment facilities reported a strong tendency to lack confidence in the effectiveness of treatment, especially with regard to counseling by people in recovery from addiction. Conversely, black staff members were more likely to endorse counseling by ‘ex-addicts,’ group therapy, and self-help membership as positive aspects of treatment, and generally reported disapproval for methadone maintenance treatment. Additionally, results indicated that staff attitudes were correlated with years of education, personal status regarding addiction, and years of work experience.

Similarly, staff members from various addiction treatment settings in the Delaware Valley were surveyed regarding their beliefs about addiction treatment (Forman, Bovasso, & Woody, 2001). Respondents included a total of three hundred and seventeen staff members. Results indicated that while over eighty percent of respondents indicated that they were supportive of research-based innovations for the treatment of addiction, there were some areas of disparity regarding specific innovations.

Thirty-four percent of respondents reported agreement for the increased use of methadone maintenance, with forty percent reporting opposition to this treatment (Forman, et al., 2001). Similarly, approximately half of the respondents indicated that they were ‘unsure’ about increasing the use of naltrexone in addiction treatment, and thirteen percent reported disagreement with its increased use. The rationale for the modest support for addiction-specific pharmacotherapies was not clear. The authors
speculated that it might have been due to limited information about the benefits of the respective medications, or perhaps due to significant experience with the ineffective use of methadone and naltrexone. However, the results suggested that closer examination of the source of staff beliefs about addiction treatment medications would be beneficial.

Caution needs to be exercised when interpreting the results of this study, as the focus on treatment providers in the Delaware is not generalizable to the wider population of addiction treatment providers. Additionally, the study included clerical and support staff who are not clinically trained and technically not involved in the delivery of treatment, although they do have direct and frequent contact with the client population. However, the inclusion of these personnel may have significantly influenced the results.

**Attitudinal surveys of medical staff.** Abed and Neira-Munoz (1990) investigated the attitudes of general practitioners toward people addicted to drugs and drug addiction. A sample of two hundred and three general practitioners in the Norwich Health District in the United Kingdom completed an attitudinal survey. The results indicated that there were some correlations between years in practice and willingness to treat patients with drug addiction. Those with fewer years experience as a general practitioner were more likely to offer treatment to those patients presenting with drug dependence, than their more experienced counterparts. The authors hypothesized that this trend could have been because; (1) younger general practitioners had more extensive training, (2) younger general practitioners may be able to relate to those patients who presented with drug addiction, as they were of a similar age, (3) younger practitioners may be less conventional due to their age and therefore be more tolerant of non standard
behaviors. The authors recommended not only educational programs for general practitioners, but specialist support from drug addiction agencies.

The study raised pertinent issues, and was one of the first attitudinal surveys measuring the attitudes of general practitioners toward drug addiction and those who are afflicted with drug dependency. Items included in the questionnaire were reviewed for content validity, and those with a correlation coefficient of less than 0.85 were removed from the instrument (Abed & Neira-Munoz, 1990). Reliability for the final scales was measured using Spearman Brown’s split-half method. Despite the reported validity and reliability of the questionnaire, there are issues with the generalizability of the findings of the study. Respondents of the study were from a convenience sample rather than random assignment.

Similarly, in Australia studies have been conducted to determine the attitudes of general practitioners to managing patients who have alcohol and drug dependent issues. Four hundred and sixteen general practitioners from South West Sydney participated in a survey (Abouyanni, et al., 2000). Results suggested that only eighteen percent of respondents felt confident or very confident about their ability to manage patients using illicit substances. Although fifty-two percent of respondents indicated that they thought methadone was an effective treatment for opioid addiction, they expressed concern that patients on methadone would be “difficult, aggressive or demanding.” Recommendations of the study included the education of medical students to accept involvement in models of shared care for patients who have issues with addiction, and education and training for general practitioners in the management of drug and alcohol dependence. Apart from
caution needing to be exercised when generalizing the results of this study, which the authors acknowledge, there is also no indication about the reliability and validity of the instrument used.

The importance of addressing negative attitudes that physicians and psychiatric residents have toward people who have addictions has been acknowledged and explored in other studies. Karam-Hage, Nerenberg, and Brower (2001) provided a one-day educational intervention to fifty-two psychiatry residents with the purpose of modifying their attitudes toward treatment for substance abuse. Study results showed that while pre-scores indicated that the participants on average already had a positive attitude toward treatments for substance abuse disorders, after the educational intervention there was a statistically significant increase in the belief of the effectiveness of treatment.

Problems with interpreting these results include the small sample size, and the exclusive focus on psychiatry residents in the state of Michigan. Additionally the follow-up of participants for post educational experience was on the same day. Therefore, it is not known whether or not the identified increase in positive attitudes was sustainable beyond the day of the intervention. Finally, there were not any indicators in the study as to the reliability and validity of the instrument used to measure the attitudes of the respondents.

Other studies have sought to investigate specifically the attitudes of medical staff toward buprenorphine as a treatment for opioid dependence. Comparative data from a study of French General Practitioners, found that those prescribers who liaised with a specialized network and who utilized existing guidelines were more likely to adopt a
more stringent attitude toward their patients on buprenorphine than those prescribers who tended not to consult (Ferone, et al., 2005). A total of three hundred and forty-five general practitioners in south eastern France agreed to participate in the study. Participants were interviewed by the researchers for approximately twenty minutes about their knowledge, attitudes and practices toward buprenorphine treatment. The authors were unable to hypothesize as to how consultation influenced the attitude of general practitioners or why prescribers who did not consult and who had no prior experience with opioid pharmacotherapy treatment were more flexible with their patients. A primary limitation of the study was generalizing the results to medical practitioners outside of the region in France.

A paper and pencil survey conducted in 2003 focused on the perceptions of a random sample of five hundred and forty-five addiction specialists toward buprenorphine treatment (Kissin, McLeod, Sonnefeld, & Stanton, 2006). Results indicated that while a number of positive experiences of prescribing buprenorphine were reported only fifty-eight percent of those able to prescribe actually stated doing so. “Regulatory and practical issues alike appear to challenge the dissemination of buprenorphine treatment in the US treatment system” (p. 99). Twenty-five percent of respondents who were prescribing buprenorphine indicated that they had either reduced or ceased their buprenorphine practice due to concerns and challenges.

Primary issues identified in the study included: worry about DEA involvement, availability of the medication, requirements for extensive record keeping, lack of compliance of the patient, high costs for treatment and medication, insufficient training
and experience in working with patients with addictions, and difficulty in finding appropriate counseling services (Kissin, et al., 2006). One of the major limitations of the study, reported by the authors was that the data was collected at the time when buprenorphine had only been recently released and therefore issues reported by physicians may have been resolved over the ensuing years.

Similarly, Thomas, et al. (2008) conducted a survey on the attitudes of addiction specialists and psychiatrists regarding the use of buprenorphine pharmacotherapy treatment. The sample consisted of two hundred and twenty-four non addiction specialist psychiatrists and two hundred and seventy-one addiction specialists from Boston, Chicago, San Francisco, and Miami. A fourteen page survey was mailed to respondents who were sent a twenty-five dollar incentive in advance to participate and a further twenty-five dollars upon receipt of the completed survey. Respondents were given the option to respond via the internet.

Data was collected between October 2005 and February 2006. Results indicated that while most addiction specialists surveyed were prescribing buprenorphine, few non addiction specialist clinicians had incorporated it into their practice. Knowledge of the pharmacotherapy was a reported issue with sixteen percent of non addiction specialist psychiatrists indicating that they had not heard of buprenorphine prior to the study (this was the case for only one percent of addiction specialist physicians). Based on these findings the authors speculated about the efficacy of efforts to communicate to health professionals the message about buprenorphine and its associated benefits. They further
expressed the concern that some psychiatrists may not want to treat patients who are dependent on opioids (Thomas et al., 2008).

Respondents of both groups of professionals reported the following barriers to prescribing buprenorphine: “It does not fit in with my practice,” “It would change the patient mix undesirably,” and that “prescribing is too complex” (Thomas et al., 2008, p. 913). These results raise the issue of stigma and stereotypes associated with people addicted to opioids. The authors strongly recommended that more be done regarding increasing knowledge of buprenorphine and encouraging additional providers to become involved in the treatment of addictions. Of some relevance to counselors, the authors further recommended that more work be done to de-stigmatize opioid addiction.

Reported barriers impeding physicians’ willingness to prescribe buprenorphine in another study included the following: difficulty accessing counseling services, mental health services, and supportive services (Netherland et al., 2009). This study examined the perceptions among physicians with different levels of prescribing experience. The associated classifications were: experienced (n=78); novice (n=45); and non-prescribers (n=49). While the sample studied were not representative of the wider population of physicians trained to prescribe buprenorphine, the data provides important insights into physicians concerns, which have some implications for counselors. The study highlights the importance of linkages and information exchange between medical and counseling services, if buprenorphine is to become more accessible to people with opioid dependency.
Attitudes of counselors. Likewise, the attitudes of clinicians toward opioid addiction and treatment for this disorder have been studied. Attitudes, beliefs, perceived social norms and the intention to utilize four medications in the treatment of opioids was the focus of one study (Rieckmann, et al., 2007). A sample of three hundred and seventy-six counselors was recruited from methadone, residential, and outpatient programs. The four medications studied included methadone, buprenorphine, clonidine, and ibogaine. Results indicated significant variations in attitudes, beliefs, perceived social norms, and intentions to use different medications, depending on the treatment setting in which the counselors worked. Counselors who worked in residential and outpatient treatment settings tended to have more of a neutral or slightly negative attitude toward methadone than their counterparts who worked in methadone programs. However, attitudes toward the use of buprenorphine were reported to be neutral or slightly negative across all treatment settings.

Generalizability of the population sample is one of the primary limitations of this study. Respondents were from the Oregon and Massachusetts areas and therefore not representative of counselors in other geographical locations. Furthermore, the inclusion of counselors from methadone programs (n=125) may have created bias toward methadone since these counselors already work with clients using this medication. This may explain the variation in reported attitudes toward methadone.

Arfken, Agius, Dickson, Anderson, and Hegedus (2005) compared the beliefs about and knowledge of substance abuse treatment between clinicians in research and non-research affiliated programs. One hundred and sixty-two clinicians from 5 research
affiliated programs and 10 non research affiliated programs responded to surveys that sought to determine what their beliefs were about addiction treatments and their awareness of Clinical Trials Network treatment innovations that were being tested at the time of the research. The results of this study indicated that 42.6% of respondents from the research affiliated programs (n=68) had an awareness of buprenorphine as a maintenance pharmacotherapy for people with opioid dependence issues and 24.5% of respondents from non research affiliated programs (n=94) had a similar awareness. The authors speculated that this difference in awareness of buprenorphine was primarily due to higher education achievements of those clinicians from research-affiliated programs.

The beliefs that respondents had about buprenorphine specifically were not measured in this study. There was an item that addressed beliefs about methadone maintenance as a treatment for heroin addicts, and the percentage of respondents who agreed with this treatment modality were relatively low. A total of 36.8% of clinicians working in research-affiliated programs agreed that methadone maintenance should be used with heroin addicts and 42.6% of clinicians from non-research affiliated programs agreed with this item (Arfken, et al., 2005). However, it is not possible to draw inferences as to how buprenorphine would have compared to methadone as a treatment option.

Other limitations of this study include the fact that participants were restricted to clinicians in the Great Lakes area in Michigan and therefore results are unable to be generalized to the wider population of clinical workers. Additionally, the sample sizes were relatively small, and the authors acknowledged that as a result, they sought to
minimize Type II errors. Thus, they relaxed the criterion for statistical significance (p<.10), therefore any differences detected or significance found in results could be due to Type I errors (Arfken, et al., 2005).

The successful diffusion, adoption, and implementation of buprenorphine as a treatment for opioid addiction is dependent to some extent, on substance abuse counselors (Knudsen, et al., 2005). Consequently, knowledge about the effectiveness of buprenorphine, and substance abuse counselors’ perceptions of the acceptability of buprenorphine as a treatment modality were the focus of a study conducted by Knudsen et al. Data was drawn from two NIDA - funded studies. The total sample size comprised of 2,298 counselors from privately and publicly funded substance abuse treatment centers.

This study was one of the first to attempt to measure the attitudes of counselors toward buprenorphine. Results indicated that more than two thirds of respondents checked the “don’t know” response regarding their perceptions of the effectiveness of buprenorphine. Additionally, counselors who indicated a higher affiliation with 12-step philosophies in addiction treatment were considerably less likely to report acceptance of buprenorphine as an acceptable treatment. However, whether or not the respondents were in personal recovery was not correlated with perceived acceptability of buprenorphine (Knudsen, et al., 2005). These findings suggest that information regarding the effectiveness of buprenorphine needs to be disseminated to counselors, and that potential resistance to the medication may occur in counselors who have a strong belief in 12-step programs.
Limitations of the study include the generalizability of the sample to the counseling workforce as a whole. While the sample was significant in size, it was restricted to the sampling design of the larger NIDA study, which excluded methadone facilities, Veterans Administration centers, and correctional facilities. These workplace settings have significance in terms of their exposure to clients with opioid addictions (Knudsen, et al., 2005).

Additionally, the measurement of the effectiveness item on the survey may have been problematic. Respondents were asked to indicate their perceived effectiveness of buprenorphine based on both their knowledge and experience. Consequently, the “don’t know” responses may have been somewhat inflated if counselors had knowledge of the effectiveness of buprenorphine but lacked any clinical experience. Similarly, respondents were not asked if they were working with clients who had opioid addictions. For those counselors who had not worked with clients with opioid addictions, knowledge about buprenorphine would not be a priority as it is a treatment exclusively for this client population (Knudsen, et al., 2005).

The attitudes and beliefs of staff working with clients who are maintained on methadone have also been the focus of studies. Caplehorn, Hartel, and Irwig (1996) measured the steadfastness of staff to abstinence oriented policies, their attitudes toward drug addiction, and the knowledge that staff had about methadone maintenance in fourteen methadone maintenance programs. Results of this study indicated that less qualified staff members had a tendency to be stronger advocates of abstinence-oriented policies than those staff members who had postgraduate qualifications. There were
strong positive correlations between commitments to abstinence oriented policies and disapproval of drug use scores.

Caplehorn, Hartel, and Irwig (1996) measured the reliability and validity of the 45-item survey used in the study by confirmatory factor analysis, goodness-of-fit, Cronbach’s alpha, and test-retest reliability measures. Despite the robustness of the instrument utilized, the results of the study need to be viewed with some caution as the sample used was one of convenience rather than randomly assigned, and therefore unable to be generalized to the attitudes of the wider population.

More recently, Evans (2006) utilized and modified the questionnaire developed by Caplehorn, Irwig, and Saunders (1996) to assess and compare the attitudes of six groups of health professionals toward addiction and methadone. The six groups of interest included: Professional Counselors, Professional Clinical Counselors, Psychologists, Certified Chemical Dependency Counselors, Social Workers, and Licensed Independent Social Workers. A survey was mailed to six hundred potential respondents, with a total return of one hundred and eighty-nine completed questionnaires. Results of the study indicated an overall lack of knowledge and training regarding addiction and methadone treatment. Additionally, the reported beliefs of the respondents, about addiction, were formulated on the basis of the participant’s personal belief system rather than based on scientific fact. However, participants also indicated a willingness to both receive training and to provide counseling for people receiving methadone treatment (Evans, 2006).
Hence, from attitudinal studies conducted on various health professionals it is apparent that there remain conflicting attitudes toward people who have drug addiction issues, particularly those who seek treatment for opioid dependency. Amongst medical staff there were problems with willingness to treat patients with addiction (Abed & Neira-Munoz, 1990), and concerns raised regarding beliefs that patients receiving methadone would be aggressive and difficult (Abouyanni, et al., 2000). The current study is focused on determining whether or not counselors share similar concerns regarding working with this client population, and extends to attempting to measure the attitudes of counselors toward buprenorphine as a treatment for opioid addiction, compared to methadone and counseling.

Studies of counselors’ attitudes have explored beliefs about medications as effective treatments for opioid addiction. However, these studies have also reported conflicting viewpoints and in some instances limited awareness or knowledge specifically about buprenorphine and its effectiveness (Arfken, et al., 2005; Knudsen, et al., 2005). Other studies indicated that a strong belief in either abstinence-based philosophies or 12-step programs might influence counselors to be reluctant to support pharmacotherapy for the treatment of opioid dependency (Knudsen et al., 2005; Capelhorn, Hartel, & Hartwig, 1996). The current study attempted to determine whether knowledge and awareness have improved amongst counselors regarding buprenorphine, to measure how counselors’ compared it to methadone, and to identify whether counseling was considered preferable to pharmacotherapy.
Efficacy of Buprenorphine

Fiellin, Moore, et al. (2008) investigated the long-term outcomes of buprenorphine/naloxone treatment for opioid dependent clients in an office based setting and the clients associated satisfaction with this form of pharmacotherapy. The authors followed a cohort of fifty-three opioid dependent patients for a period of five years. Retention in treatment and the number of urine drug screens that were negative for opioids were the outcome measures used. During the time of the data collection, participants had attended 75% of their scheduled visits with the physician and 91% of urine specimens collected showed no evidence of illicit opioids.

The authors acknowledged limitations of this study. These limitations included; 1) relatively small sample size, 2) the setting was exclusively the Primary Care Center of one large, urban hospital 3) the participants comprised of a sample of patients who met specific eligibility criteria in order to participate in the study, and 4) the instrument used to measure client satisfaction had not been validated (Fiellin, Moore, et al., 2008). Despite these limitations, the study provided information regarding the effectiveness of buprenorphine in retaining clients in treatment.

Whether or not buprenorphine maintenance contributes to clients’ resistance to counseling has been one of the questions leveled at the introduction of buprenorphine as a treatment option for clients with opioid addiction. Caldiero, et al. (2006) sought to determine the efficacy of buprenorphine maintenance versus buprenorphine as an intervention for detoxification purposes. The authors asked the question: Can retention of opioid dependent patients in outpatient counseling be improved by the induction and
maintenance on buprenorphine? The study was a retrospective chart review of sixty opioid dependent clients who had completed inpatient detoxification at Rosary Hall, which is a treatment center at St Vincent Charity Hospital in Ohio (Caldiero, et al., 2006).

Thirty of the participants were discharged from inpatient detoxification and maintained on buprenorphine, and the other thirty respondents were age and gender matched clients who had been discharged from inpatient detoxification treatment and were not receiving any maintenance pharmacotherapy treatment (Caldiero, et al., 2006). Results of this study indicated that criticisms of buprenorphine maintenance as reducing client retention rates in treatment is not only unfounded but actually the reverse. Half of those maintained on buprenorphine post detoxification (50%) completed an intensive outpatient program and were continuing to receive counseling after twelve weeks. However, the majority of those who were ‘drug-free’ post detoxification did not attend for even one day of the intensive outpatient program, and none of these participants completed the program.

Despite results that appear to support the superiority of buprenorphine in retaining clients with opioid dependency in treatment, they need to be considered with some caution. The authors acknowledged that the study was a non-randomized, non-blinded, retrospective chart review. Additionally the sample was small and specific to clients admitted to only one treatment facility, and therefore not generalizable to the wider population. Furthermore, the control sample of those who were discharged from inpatient treatment without buprenorphine maintenance was only matched according to
gender and age (Caldiero, et al., 2006). Other demographic or substance use differences may have influenced and accounted for some of the findings.

Fiellin, Pantalon, et al. (2002) investigated the feasibility of buprenorphine maintenance in a primary care setting for the treatment of patients addicted to heroin. Fourteen patients participated in a thirteen-week trial. In order to be eligible for the study, patients had to meet the DSM-IV-TR criteria for opioid dependency, have urine toxicology positive for opioids, and meet the FDA criteria of being at least 18 years of age with at least a one year history of opioid dependence. Results indicated a significant reduction in opioid use as measured by urine toxicology reports, and eleven of the fourteen participants completed the maintenance program. While this study had a very small sample size and was restricted to patients who were receiving treatment at the New Haven Hospital, it indicated positive potential for the use of buprenorphine as an effective pharmacological treatment for opioid dependency.

Since the FDA approved buprenorphine, research has been conducted comparing the efficacy of buprenorphine to that of methadone. Despite controversy, methadone has remained the primary pharmacotherapy treatment for opioid addiction since its availability in the 1960’s.

Comparative Studies of Buprenorphine and Methadone

Throughout the 1990’s research was conducted regarding the efficacy of buprenorphine, compared to methadone. These clinical trials were pivotal in the eventual approval of buprenorphine by the FDA in 2003. Ling and Wesson (2003) reviewed these studies, and concluded that the trials definitively established the efficacy of
buprenorphine both as an independent treatment and in comparison to methadone. The clinical trials verified the high safety profile of buprenorphine as few serious adverse events were reported.

Similarly, international studies have sought to evaluate the practicality, efficacy and safety of buprenorphine compared to methadone. Fifty-eight patients with opioid dependence were recruited from three outpatient clinics in Switzerland (Petitjean et al., 2001). Respondents were randomly assigned to either receive buprenorphine (n=27) or methadone (n=31). While both medications were found to be comparable in terms of a reduction in illicit opioid use, methadone was found to be superior to buprenorphine with regard to treatment retention. The results indicated that fifty-six percent of respondents receiving buprenorphine completed the six-week study, and ninety percent of those being treated with methadone were retained. The only significant differences regarding side effects of the medications were that the respondents in the methadone group reported more sedation, while the buprenorphine group reported more serious headaches.

The authors speculated that the differences in retention rates could have been accounted for due to non-equivalent induction doses (Petitjean et. al., 2001). Most of the respondents from the buprenorphine group, who left treatment, did so during the first ten days, approximately two thirds of whom complained of withdrawal symptoms. While this may suggest that induction doses of buprenorphine were not high enough, or were not increased frequently enough, the large difference in retention rates between the two medications begs further investigation.
However, caution needs to be exercised when interpreting the results of the study due to the small sample size. Any differences detected between the groups may have been inflated because of the small sample. Additionally, respondents recruited from three outpatient clinics in Switzerland are not generalizable to wider populations.

The issue of retention in treatment of those who are prescribed buprenorphine has been a point of discussion in Australian literature. The higher dropout rate of buprenorphine was considered to be significant in the first two weeks of treatment (Chadderton, 2000). Three primary explanations were discussed. Firstly, the induction of buprenorphine takes longer than that of methadone. Secondly, it was speculated that the antagonist action of buprenorphine causes more initial withdrawal symptoms than methadone. Thirdly, the ceiling effect of buprenorphine prevents clients from experiencing opioid effects or a “high” from the medication.

Conversely, potential advantages that buprenorphine may have over methadone were also discussed. The safety profile of buprenorphine has been reported to be superior to methadone (Chadderton, 2000). While fatal overdoses have been recorded, they have been associated with the concurring use of benzodiazepines. Warnings are issued with the buprenorphine medication regarding the risks of mortality when combined with other depressants including alcohol. Buprenorphine has further been documented as an easier pharmacotherapy treatment to withdraw from than methadone. An example given of a client who was admitted to an inpatient facility for buprenorphine detoxification found that “His withdrawal was much shorter and less severe than for methadone and longer,
but on a par with, a standard heroin detox” (p. 333). Finally, buprenorphine has been reported by clients to have far less of a sedating effect than methadone.

A similar study conducted in Austria found that the retention rate was significantly better in the group maintained on methadone than those who were prescribed buprenorphine (Fischer et. al, 1999). However, those from the buprenorphine group who completed the study showed significantly less use of illicit opioids. Sixty respondents attending a drug addiction outpatient clinic were randomly assigned either methadone or buprenorphine. Respondents were studied in treatment for a period of twenty-four weeks. As with previous literature a relatively small sample size and issues with generalizability indicate that results should be interpreted with caution.

In contrast to the above-mentioned studies, other research has not found any significant difference in retention rates between those maintained on buprenorphine and those who are prescribed methadone (Strain, Stitzer, Liebson, & Bigelow, 1996). Over a sixteen-week treatment period, eighty-six participants were studied to determine any differences in treatment outcomes between methadone and buprenorphine groups. The only discernible difference noted between the groups in this study was that those treated with buprenorphine showed lower rates of illicit opioid use over time than the methadone group. Again, limitations of this study are primarily related to generalizability, as the respondents were recruited from one addiction outpatient program.

Potential influences upon the choice of buprenorphine versus methadone treatment were investigated in a British study. Respondents of the study (192) were recruited from inpatient and outpatient treatment services in London (Ridges, Gossop,
Lintzeris, Witton, & Strang, 2009). A structured interview was conducted at the point of entry into treatment. Results indicated that prior treatment experiences, beliefs about the medications, and treatment goals were factors that influenced the respondents’ pharmacotherapy preference. The twenty-five percent of respondents who were prescribed buprenorphine, reported an expectation that methadone would lead to an increase in depression. Similarly, those who were prescribed methadone ( sixty-eight percent) attributed buprenorphine to an increase in anxiety. The results of the study suggested that the beliefs about buprenorphine were based on hearsay and the opinions of others rather than on factual information.

While caution needs to be exercised when generalizing the results to the wider population, the study has implications for counselors. If a client’s choice of pharmacotherapy treatment is primarily influenced by information received by others, then it is of paramount importance that counselors are able to provide their client’s with information that is evidence-based.

Another factor in the adoption of a treatment for opioid dependence is the associated cost of providing and receiving the treatment. Jones, et al. (2009) performed a comparative cost analysis of clinically stable patients receiving 1) clinic based methadone, 2) office based methadone, and 3) office based buprenorphine. The sample sizes for each type of treatment care were twenty-three, twenty-one, and thirty-four respectively. Results indicated that clinic based methadone treatment was less expensive than either of the office based treatments. However, in terms of cost to the client receiving treatment, the results suggested that office-based buprenorphine maintenance
was the least expensive. The authors concluded that “whether office-based treatment with buprenorphine expands…will depend on who pays, how much they pay, and who decides” (p. 139).

Limitations to the study, which restrict its generalizability, include the small sample size, and the fact that the sample was drawn from one urban treatment facility. The costs of treatment may vary from one locality to another and certainly from state to state. Additionally, demographics of participants in each treatment group were not matched, and there may be some demographical differences that impact on treatment costs. Finally, the participants of the study were clients who had achieved clinical stability, and therefore the analysis does not address the potential costs of stabilizing a client during the initial stages of treatment.

While efficacy, retention in treatment and cost are influencing factors, responses to drug abuse treatments are largely shaped by the attitudes and beliefs about the particular treatment. A study that assessed the attitudes of people with opioid dependency found a significantly more positive attitude toward buprenorphine than methadone (Schwartz et al., 2008). However, the sample was drawn from individuals who were enrolling in a methadone program in the Baltimore area, and cannot be generalized to the wider population. Not only do individual attitudes influence the adoption of innovative medications, so too does societal attitudes.

Since its adoption as a treatment modality for opioid dependency, methadone has remained controversial. Many of those who oppose the treatment have criticized the full agonist properties of methadone as too similar to the effects of heroin/prescribed opioids
(Ling et al., 2010). In other words, the more methadone that an individual uses the more of a ‘high’ or sedating effect will be experienced by the user. Buprenorphine has been viewed by some as an effective treatment for opioid dependency that does not currently have the negative societal perceptions that methadone has engendered. “It meets the needs of both patients and society, striking a successful therapeutic balance” (p. 54).

A further benefit of buprenorphine could be that it offers treatment to a wider client population. A comparison of patients attending a clinical trial for buprenorphine in a Primary Care Clinic (n=96) and patients enrolling in methadone maintenance at an Opioid Treatment Program (n=94) was conducted (Sullivan, Chawarski, O’Connor, Schottenfeld, & Fiellin, 2005). Further comparisons were made between the characteristics and treatment outcomes of patients who were new to opioid treatment and those with a prior history of methadone maintenance, within the Primary Care Clinic sample. The results of this study suggested that buprenorphine may be instrumental in the provision of treatment to a population of people somewhat dissimilar to those currently receiving methadone. Patients who participated in the Primary Care Clinic trial were more likely to be employed, have fewer reported years of opioid dependency, lower incidence of injecting drug use, and no history of past methadone treatment, than those enrolling for methadone maintenance.

Within the Primary Care Clinic sample, those who had not had any previous pharmacotherapy treatment were younger, had less years of opioid dependency, were less likely to have been involved in injecting drug use, and had lower rates of hepatitis C (Sullivan, et al., 2005). However, it is not discernible whether it was the office-based
setting that attracted new patients to enter into treatment or the buprenorphine treatment itself. Nonetheless, the study provides some support that buprenorphine has the potential to expand the accessibility of opioid treatment and to deliver service to a population of people that might not otherwise seek treatment.

**Conclusion**

There is limited literature that focuses on the attitudes of health professionals toward buprenorphine, and even less that investigates how counselors think and feel about it as a treatment intervention for clients with opioid dependency. Many of the studies that have been conducted have used samples of substance abuse counselors. While it is critical that substance abuse counselors have knowledge and awareness of pharmacotherapy options, they are not the only counselors who treat clients with opioid addiction. Community mental health counselors are highly likely to encounter clients with these issues. By including these treatment providers in the current study, it was hoped that gaps in education and the dissemination of knowledge could be better recognized. Additionally, this study hoped to address the common limitation of many of the above-mentioned studies, that is, small sample sizes of convenience, by surveying a minimum of two hundred counselors from a national counseling organization. Finally, many of the studies comparing buprenorphine to methadone were based on clinical trials and research conducted prior to the approval of its use by the FDA in 2003. The current study sought to compare the two medications since the availability of buprenorphine on the market over the last seven years.
Chapter Three: Methodology

The current study was a descriptive quantitative analysis designed to measure the attitudes of substance abuse counselors and mental health counselors toward buprenorphine as a treatment strategy for opioid addiction, compared to methadone and counseling. It further sought to determine if there were any differences in attitudes between counselors who identified as substance abuse counselors and counselors who did not identify as substance abuse counselors. A preferred means of determining information about perceptions that people have is to question them directly (Kerlinger, 1986). Therefore, a survey was conducted to determine counselor’s attitudes and related data.

In order to develop a greater understanding of the attitudes of counselors toward three opioid treatment interventions, the following null hypotheses were tested:

Hypothesis One: There are no significant differences between substance abuse counselors and mental health counselors regarding attitudes toward treatment for opioid addiction.

Hypothesis Two: There are no significant differences in attitudes toward treatment for opioid addiction based on buprenorphine, methadone and counseling as treatment options.

Hypothesis Three: There is no interaction effect between the professional identification of counselors and treatment options and attitudes toward treatment for opioid addiction.

This chapter includes nine primary sections. Firstly, an outline of the research design will be provided, followed by operational definitions of the variables, the sampling plan, and a description of the identified population studied. The fourth section
describes the origins of the instrument that was used and how it was developed and adapted for use in the current study. The remaining sections provide reliability, validity, data collection procedures, and data analysis procedures.

**Research Design**

The current research was a quasi-experimental design. An electronic survey was utilized to ascertain the attitudes of substance abuse counselors and mental health counselors toward three opioid treatment options (buprenorphine, methadone, and counseling). The survey did not include researcher imposed treatments or the manipulation of variables. The research design and the survey instrument were developed from a prior research study conducted by Rieckmann, et al. (2007). The statistical analyses used in the current study included descriptive statistics, and a 2x3 Analysis of Variance (ANOVA), with a between and within factor. The two groups analyzed were substance abuse counselors and mental health counselors. The within factors were the three attitudinal measures for buprenorphine, methadone and counseling.

**Operational Definition of the Variables.** The dependent variables of this study were the three measures for opioid dependency treatment options: buprenorphine, methadone, and counseling. The independent variable studied was the professional identification of counselors, which had two levels: 1) substance abuse counselors, 2) mental health counselors.

**Sampling Plan.** The researcher contacted ACA and requested contact information for participants that met the requirements of this study. The ACA administration advised that they could provide email addresses for members who
belonged to the IAOCC division. However, the researcher was instructed to contact the AMHCA division directly as they were responsible for their own membership information. Contact with the AMHCA administration revealed that membership details were managed by a marketing company, which in accordance with privacy laws could not provide the relevant information of members directly to the researcher. Therefore, the survey was sent directly to a computer generated random sample of 2000 AMHCA members (this was the minimum number that could be purchased) by the marketing company. Due to the large number of AMHCA members that were invited to participate in the study, it was decided not to randomly select members of the IAOCC division for the current research. The total number for membership of the IAOCC division was 630 and in an effort to recruit equal numbers from each group (substance abuse counselors and non substance abuse counselors) all of the members of the IAOCC were emailed the survey.

In order to anticipate participants’ response rates, the more recent literature was examined for current response rates trends. The response rate from a survey of General Practitioners attitudes toward drug and alcohol dependent patients was 76% (Abouyanni et al., 2000). Another study focused on the beliefs of treatment facility staff about addiction treatment yielded a 57% return of questionnaires (Forman, Bovasso, & Woody, 2001). Response rates among substance abuse treatment counselors regarding their attitudes toward buprenorphine diffusion was 61.1% (Knudsen, et al., 2005). However, the above-mentioned studies were all conducted at identified facilities and either the researchers were present themselves to administer the survey or they were in contact with
directors of the facilities who agreed to directly administer the survey. Therefore, since the current research did not involve direct contact with respondents, it was anticipated that the response rate would be much lower.

A survey disseminated by both mail and email sought to determine the perspectives of both addiction specialists and general psychiatrists regarding the use of buprenorphine for addiction treatment (Thomas et al., 2008). The associated response rates were as follows: non addiction specialists, 57%; addiction specialists, 72%; web survey 16%. Another mailed survey conducted for the purposes of a dissertation, assessed and compared attitudes of professional counselors, professional clinical counselors, licensed social workers, licensed independent social workers, certified chemical dependency counselors, and psychologists toward addiction and methadone treatment. This study had a response rate of 31% (Evans, 2006). It was anticipated that the response rate for the current research would be further impacted by the fact that some of the email addresses provided by the ACA administration may no longer be current, and there was not any direct incentives for respondents to complete the survey. Subsequently, the current research anticipated a response rate of approximately 10%.

**Identification of Population.** The population from which participants for the current study were drawn were members of ACA. The rationale for using ACA members was that it is a national professional organization of counselors from diverse geographical areas, with various specialties and diverse client populations. Due to the widespread prevalence of opioid addiction in the United States (Mendelson et al., 2008), most counselors will find themselves with a client who is experiencing some form of addiction.
Therefore, the attitudes that counselors have toward individuals presenting with different substance use issues and their perceptions of the efficacy of treatment for different substance use issues may exert an impact on treatment outcomes. The focus for the current research were members of ACA who belonged to one of two divisions, as these were considered to be the most likely to comprise of counselors who would encounter clients with opioid addictions. The first division of interest was AMHCA, and the second was the IAAOC division.

**Instrumentation.** Sections of the Medications Opinion Survey developed by Rieckmann, et al. (2007) were adapted for use in this study. Their study was conducted using two population samples. The first sample comprised of 376 counselors from 125 methadone programs, 127 residential programs, and 124 outpatient programs in Oregon and Massachusetts. The second sample included 1,083 clients from methadone, residential, and outpatient programs in the same geographical areas. The questionnaire developed by Rieckmann et al. was entitled “Medication Opinions Survey.” The survey consisted of a total of 71 items which were categorized into five sections. The first section (11 items) focused on general attitudes toward the use of medications in the treatment of opioid addiction. The remaining sections (15 items each) were specifically related to the medications of interest; buprenorphine, methadone, clonidine, and ibogaine.

The authors gave permission to use and modify their instrument in the current study. See Appendix B for a copy of personal communications with one of the authors. The survey was used to determine the attitudes of a sample of counselors who belonged to ACA, toward buprenorphine as a pharmacotherapy treatment for opioid addiction,
compared to methadone and counseling. Participation in the survey was voluntary and confidentiality of information obtained was preserved.

A copy of the modified survey appears in Appendix E. The original version of this instrument included a coversheet which provided instructions for completing the survey, a series of questions related to demographical information, nine items that measured the respondents attitude toward the use of medication in general for the treatment of heroin dependency, and two items related to respondents awareness of and experience in working with clients who have been prescribed methadone, buprenorphine, clonidine, and ibogaine. The remainder of the survey consisted of four sections, which measured attitudes toward each of the four medications of interest. Each section comprised of fifteen items.

The instrument was developed by collecting qualitative data from focus groups and conducting a pilot study (Rieckmann, et al., 2007). The format and structure of items in the instrument were based on the Fishbein-Ajzen model. The alpha coefficients for items that measured attitudes were above 0.94. The current study used the sections of the survey, which were specific to buprenorphine and methadone, and included a section for counseling.

**Modifications to the instrument.** The original instrument was entitled “Medications Opinion Survey” and was focused on attitudes toward four different medications. While the current study focused on buprenorphine and methadone, it also focused on comparing these two medications to counseling as a treatment for opioid addiction. Since counseling is not a medication the title of the survey was altered to
“Treatments for Opioid Addictions Survey.” The original Medications Opinion Survey was focused on attitudes toward heroin addiction. Due to the above-mentioned emerging prevalence of prescription opioids in the United States, the current study changed the word “heroin” to “opioid” throughout the survey. The sections related to clonidine and ibogaine were deleted from the current study, as these were not medications of interest. A section for counseling was added to the survey for the purposes of the current study. Questions that were appropriate to ask regarding counseling were replicated from the medications questions, substituting “counseling” for “buprenorphine” or “methadone.”

In consultation with colleagues, the first item of the medication opinions survey was deleted. The item consisted of three scales that were reported to be confusing by the majority of participants in the first pilot study. General questions included in the original instrument were not considered relevant to the current study and were therefore deleted. Additionally, preliminary findings from the initial pilot study indicated that item eight of the original instrument had a significant impact on the reliability of the overall survey and was subsequently deleted. Item scales were altered from seven descriptive scales which asked respondents to rate each item on a continuum from 1=Bad to 7=Good, to five-point Likert scales.

Each section on the Buprenorphine and Methadone scales consisted of 13 questions with the following response categories: strongly agree=5, agree=4, neutral=3, disagree=2, and strongly disagree=1. Therefore, high mean scores for a particular treatment strategy would indicate strong support while low mean scores would indicate weak support for the particular treatment type. The counseling scale consisted of items
that were comparable to and commensurate with the buprenorphine and methadone items. However, not all of the items related to pharmacotherapy were appropriate for the counseling scale therefore this section contained eight items instead of the 13 items comprising the buprenorphine and methadone sections.

Respondents in the current study were asked to rank their preferred treatment choice for opioid addiction and to indicate whether or not they were familiar with buprenorphine and methadone respectively. This item was placed after the questions related to attitudes toward each opioid treatment in order to reduce bias. Finally, participants were invited to make comments at the end of the survey.

The alterations to race and ethnicity questions included changing the order of categories to alphabetical, and adding the other race and ethnicity groups utilized by the Census Bureau, 2010. Items related to licensure, were modified to focus on counselors (the target population for the current study) rather than including social workers and psychologists. Furthermore, because the population of interest in the current study was extended beyond addiction counselors to include mental health counselors, items were altered to reflect this focus. Two additional questions were added on the demographics section of the instrument asking respondents to indicate their age and how long they had been in recovery. This question was added to identify if years in recovery had any correlation with attitudes toward pharmacotherapy treatment for addiction. The demographics section was moved to the end of the survey.
Pilot Study

A total of twenty-five counselors were involved in the first pilot study conducted online. Of these, five were male and twenty were female. Numbers for the highest degree held were as follows: High School Diploma/Equivalent, n=1; Bachelor Degree, n=3; Masters Degree, n=12; and Doctoral Degree, n=9. While none of the participants identified themselves as Hispanic or Latino, one respondent indicated Asian as a racial category, five participants identified as Black or African American, and eighteen checked White as their racial category. Eighteen respondents indicated that they did not have state or national certification as a substance abuse counselor; thirteen stated that they were currently licensed to work as an independent practitioner, and six respondents had supervisory credentials. The licensure types that participants held consisted of: eight Professional Counselors, eight Professional Clinical Counselors, four Chemical Dependency Counselor Assistants, three indicated “other” license, and two were Licensed Chemical Dependency Counselors – Level III. The pilot study respondents currently work in the following clinical practice settings: thirteen worked in community mental health; two respondents worked in rehabilitation, seven worked in an addiction clinical setting, and three indicated other clinical practice settings.

As a result of the initial pilot study significant changes were made to the survey instrument. Therefore, a second pilot study was conducted to determine the reliability of the final version of the instrument.
Pilot Study II Results

Demographics. A total of 40 participants provided valid data for the second pilot study. Of these, 16 were clinicians and 24 were first year level Masters counseling students. Only six respondents in the pilot study reported having credentials in addiction counseling. Thirty-five of the respondents were female, five were male and the mean age was 33 years. As expected, the 24 masters counseling students all reported a Bachelor’s degree as their highest degree held; eleven of the clinicians held a Master’s degree and five had Doctoral degrees. The racial profile of the second pilot study was primarily White (32 respondents). Four participants identified as Black/African American, two identified as American Indian/Alaska Native, one respondent checked the Asian category and one identified as Hispanic/Latino.

Reliability

The internal consistency of the instrument used was assessed by calculating the Cronbach (α) reliability. Additionally, correlations between the individual items and the scale were obtained to determine item-scale reliability. The original instrument reported >0.94 alpha coefficients for items that measured attitudes. Analyses of the modified survey from the first pilot study showed that the survey items continued to have a high reliability value. For general questions in the first part of the survey Cronbach’s alpha was 0.757. Of interest was the analysis of item-scale reliability, which indicated that if the item related to daily medication visits was deleted, reliability would increase (Cronbach’s alpha = 0.820). Similarly, for the buprenorphine questions Cronbach’s alpha would increase from 0.894 to 0.921 if the same item was deleted. Similar observations
were made for the counseling questions. Cronbach’s alpha increased from 0.817 to 0.904 when the daily medications item was deleted. However, the methadone questions remained at a consistent reliability (Cronbach’s alpha = 0.928) regardless of whether the item in question was deleted. The daily medication item was deleted in the final modifications to the instrument.

The reliability of the survey items remained high in the second pilot study despite the modifications made to the instrument. For questions related to attitudes toward buprenorphine, Cronbach’s alpha (α) was 0.904. The methadone questions had a reliability of 0.887 and analysis of item-scale reliability indicated that this would only increase to 0.900 if item eleven was deleted. Due to this very small difference in reliability, item eleven was not deleted from the survey. Similarly, the items related to counseling had a reliability of 0.902 and item-scale reliability indicated that any improvement to this by deleting items would be slight.

Validity

Anticipated validity issues that arose from this research design, and the subsequent safeguards implemented to address these issues were as follows:

**Random irrelevancies in the experimental setting.** Due to the fact that the respondents were completing the survey online in their own environment rather than a controlled environment setting, the statistical conclusion validity was threatened. The large variability in responding greatly increased the likelihood for error variance. In an attempt to decrease the possible error variance, it was requested that respondents find a quiet place, free from distractions to fill out the questionnaire. Whether or not the
respondents complied with this request was unable to be controlled. Hence, random irrelevancies remained a validity issue.

**History.** If the respondent had any stressful events going on in their lives, or were experiencing any physical illness, this may have affected their responses to the questionnaire, or how much time they invested in the survey. The only means of addressing this issue was to suggest to respondents that they complete the survey in a relaxing setting.

**Construct validity.**

**Inadequate pre-operational explication of constructs.** This was the only considered threat to construct validity. In order to overcome this issue, every effort was made to develop a clearly defined questionnaire, carefully worded, in order to ascertain exactly what was intended. Additionally, when the instrument was pre-tested, the additions to and subtractions from the original instrument were reviewed by addiction experts to safeguard construct validity.

**External validity.** Ensuring that the population sample was adequate in numbers and representative of counselors minimized the threat to external validity.

**Data Collection Procedures**

The survey was sent via email, to members of the relevant divisions of ACA. The survey was distributed to members of the AMHCA division by the marketing company employed to manage membership information. Random assignment was computer generated. Once a list of IAOCC members was obtained from ACA, the survey was
distributed online by the researcher. The questionnaire was accessed by both groups utilizing the survey software Qualtrics.

An introductory email was sent to participants explaining the significance of the research and requesting that participants find a quiet place, free from distraction for approximately ten to fifteen minutes, in order to complete the survey (See Appendix C). Additionally, the first question of the survey was regarding informed consent. Participants were invited to participate in the survey but were not coerced or offered any incentive. If participants did not check that they agreed to complete the survey, then Qualtrics provided a “skip logic” option which ended the survey program. A copy of the informed consent appears in Appendix D.

**Data Analysis Procedures**

The statistical procedure used in this study was a two-way Analysis of Variance (ANOVA) with a between and within factor to determine possible differences between the two independent variables. This procedure was implemented using the computer software program the IBM Statistical Package for the Social Sciences (PASW Statistics). Based on the data collected, descriptive statistics for demographics and characteristics of the sample were calculated.

The data was screened for missing values and outliers. Missing data for the dependent variables was re-coded to a neutral value. The only missing value replaced on demographic items was for age. Non-responses were re-coded with the calculated mean age of the sample. Stem and Leaf Plots were used to identify any outliers. Additionally kurtosis and skewness of the data were examined.
All of the statistical hypotheses were tested at the alpha ($\alpha$) 0.05 level of significance. By using a two-way ANOVA the first and second hypotheses were examined for main effects. Specifically, the analysis examined whether or not there were any statistically significant differences in means for substance abuse counselors and non substance abuse counselors. Additionally, any joint effect of the two independent variables on the dependent variable could be detected. A significant interaction between the independent variables would mean that changes in scores for members of the substance abuse counselors group regarding their attitudes toward various treatment options for opioid dependency was not the same as the changes in scores for members of the non substance abuse counselors group.

The substance abuse counselors group comprised of participants who reported addictions counseling as their clinical practice setting and participants who indicated that they had state or national certification as a substance abuse counselor. All other participants were assigned to the non substance abuse counselors group. Data for the two-way ANOVA was computed using the General Linear Model analysis in SPSS.

**Assumptions for two –way ANOVA.** Assumptions that needed to be met by the data in order to complete the analysis included the following:

1) The scores on the dependent variable are “quantitative and approximately normally distributed” (Warner, 2008, p. 509-510). The measures used on the survey instrument were ordinal or interval in nature and therefore quantitative. The assumption of normal distribution was examined graphically to identify any violations. A histogram was used to determine that the data collected lay within
the shape of the normal curve and could be considered to provide a fairly normal distribution.

2) “Scores are obtained in a manner that leads to independent observations” (p. 510). Because the survey was distributed online to counselors private email accounts, the researcher was reasonably confident that participants were completing the survey independently from one another.

3) Sphericity. The variances of the repeated measures are equal, and the correlations among all pairs of measures are equal (Meyers, Gamst, & Guarino, 2006). Mauchly’s test of sphericity was used to detect any violations to this assumption.

4) Homogeneity of variance. This assumption was addressed by the use of Levene’s test for homogeneity of variances. Other concerns such as outliers and unduly influential data were screened by using stem and leaf plots and Cook’s Distance. The two-way ANOVA is robust to violations of the equal variance assumption and the assumption of normal distribution providing the group sizes are approximately equal (Warner, 2008).

**Levels of significance, power, and effect size.** Statistical analyses were tested at alpha (\(\alpha\)) 0.05 level of significance. Power and effect size were calculated following analysis of the second pilot study which determined the correlation among the repeated measures. After this had been determined the computer program G*Power was used to calculate the total sample size required for statistical significance and for a medium effect size.
G* Power Results

In order to determine the required sample size for the proposed statistical analyses with a medium effect size of 0.25, the following data were entered into the G* Power program: alpha (α) error probability was set at 0.05, and power (1-β error probability) at 0.95. There were two groups (substance abuse counselors and mental health counselors) and three measures (buprenorphine, methadone, and counseling). According to the pilot study results, there were no statistically significant correlations among repeated measures. Therefore, a conservative estimate of 0.20 for the correlation of repeated measures was entered. Computations based on the above-mentioned data indicated that a total sample size of 68 was required.

Ethical Approval

The survey, the explanatory letter and procedures were approved by the Ohio University Institutional Review Board (IRB) prior to conducting the research. See Appendix A for a copy of the approval letter.
Chapter Four: Results

The purpose of this study was to investigate and compare the attitudes of counselors toward three treatment strategies for opioid abuse and dependence: buprenorphine, methadone, and counseling. The study sought to determine if there were any differences in attitudes between groups of substance abuse counselors and mental health counselors, and if there were any differences in attitudes within three opioid treatment groups: buprenorphine, methadone, and counseling.

This chapter provides the results of the data analysis procedures. A description of participants is presented first, followed by the results of the two-way analysis of variance used to test the null hypotheses. Details of analyses of the reliability of the instrument and results of Ad Hoc analyses are also presented.

As mentioned in chapter three, the participants in this study were counselors who were members of two divisions of the ACA: AMHCA and the IAOCC. Participants responded to a survey administered online. The survey comprised of questions related to participants’ attitudes toward three opioid treatments (buprenorphine, methadone, and counseling), demographic information, and questions concerning their knowledge and experience of these treatments. Participants were also invited to provide general feedback at the end of the survey. They were not asked specifically for comments about their attitudes toward treatment options for opioid dependency.

Description of Participants

A total of one hundred and eighty-two counselors responded to the online survey. Of these, one hundred and twenty-two provided complete surveys for analysis. The 60
respondents who were excluded from the analysis had either indicated that they did not want to continue with the survey after reading the consent form, or indicated that they would like to continue with the survey, and then did not respond to any other questions. Because the first question of the survey was related to obtaining informed consent, the Qualtrics program recorded the responses.

Data were collected from members of the IAOCC and AMHCA divisions of ACA from August to November, 2010. Sixty-five respondents were classified as substance abuse counselors and 57 were categorized mental health counselors. Of the 122 participants, 14 were identified as having extreme values across groups and Cooks distance. However, similar results were found when analyses were run with and without these participants. Therefore they were not excluded from the data analysis procedures.

**Demographic characteristics.** The mean age of participants was 50 years of age. The age range was between 23 and 74 years of age. Comparisons of the mean age of the sample for this study to other research are further discussed in chapter five. The mean age for substance abuse counselors was 49.9 and 50.8 for mental health counselors.

More than half of the respondents (54.9%) identified as female, 31.1% indicated that they were male, and none of the respondents identified as transgender. Seventeen participants did not respond to the question. Gender was more evenly represented among substance abuse counselors (27 male, 30 female) than mental health counselors (11 male, 37 female).

All of the participants responded to the question regarding race. Of the respondents, 105 (86.1%) were white, eight (6.6%) identified as multiracial, six (4.9%)
were Black or African American, two respondents indicated Hispanic or Latino origins, and one person was Asian Indian. The racial identification of substance abuse counselors was as follows: White (n=54), Multiracial (n=5), Black/African American (n=5), and 1 respondent identified as Hispanic/Latino. Mental health counselors reported the following racial categories: White (n=51), Multiracial (n=3), Black/African American (n=5), and respondent identified as Hispanic/Latino. A summary of the demographic data gathered is in Table 1 and a breakdown of the demographic data for each group (substance abuse counselors and mental health counselors) is provided.
Table 1

Demographic Information of Participants

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>%</th>
<th>M</th>
<th>Range</th>
</tr>
</thead>
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<td>100</td>
<td>50.34</td>
<td>23-74</td>
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<tr>
<td>Substance Abuse Counselors</td>
<td>65</td>
<td>53</td>
<td>49.94</td>
<td>26-74</td>
</tr>
<tr>
<td>Mental Health Counselors</td>
<td>57</td>
<td>47</td>
<td>50.81</td>
<td>23-71</td>
</tr>
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</table>

<table>
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<th>%</th>
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</thead>
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<td>38</td>
<td>31.1</td>
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<tr>
<td>Female</td>
<td>67</td>
<td>54.9</td>
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</table>

<table>
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<th>Gender (Substance Abuse Counselors)</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
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<tr>
<td>Male</td>
<td>27</td>
<td>41.5</td>
</tr>
<tr>
<td>Female</td>
<td>30</td>
<td>46.2</td>
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</table>

<table>
<thead>
<tr>
<th>Gender (Mental Health Counselors)</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>11</td>
<td>19.3</td>
</tr>
<tr>
<td>Female</td>
<td>37</td>
<td>64.9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Race (Total)</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>105</td>
<td>86.1</td>
</tr>
<tr>
<td>Multiracial</td>
<td>8</td>
<td>6.6</td>
</tr>
<tr>
<td>Black/African American</td>
<td>6</td>
<td>4.9</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>2</td>
<td>1.6</td>
</tr>
<tr>
<td>Asian Indian</td>
<td>1</td>
<td>0.8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Race (Substance Abuse Counselors)</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>54</td>
<td>83.1</td>
</tr>
<tr>
<td>Multiracial</td>
<td>5</td>
<td>7.7</td>
</tr>
<tr>
<td>Black/African American</td>
<td>5</td>
<td>7.7</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>1</td>
<td>1.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Race (Mental Health Counselors)</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>51</td>
<td>89.5</td>
</tr>
<tr>
<td>Multiracial</td>
<td>3</td>
<td>5.3</td>
</tr>
<tr>
<td>Black/African American</td>
<td>1</td>
<td>1.8</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>1</td>
<td>1.8</td>
</tr>
<tr>
<td>Asian Indian</td>
<td>1</td>
<td>1.8</td>
</tr>
</tbody>
</table>
Familiarity with buprenorphine and methadone. All participants responded to the questions related to their familiarity with buprenorphine and methadone. Forty-one (33.6%) indicated that they were ‘somewhat’ familiar with the medications and 68 participants (55.7%) reported that they were either familiar or very familiar with buprenorphine and methadone. Thirteen (10.7%) indicated that they were unfamiliar with the treatments.

The majority of substance abuse counselors (72.3%) reported being either ‘very familiar’ or ‘familiar’ with both buprenorphine and methadone. Twenty-one mental health counselors indicated that they were either ‘very familiar’ or ‘familiar’ with the two medications, with nearly half (47.5%) reporting that they were ‘somewhat familiar’ with both buprenorphine and methadone. See Table 2 for a summary of these results.

Experience working with buprenorphine. One hundred and twenty-one participants responded to the question about whether they had ever worked with clients taking buprenorphine and the question related to whether they were currently working with clients taking buprenorphine. Nearly all of participants (n=95) indicated that they had worked with clients who were prescribed buprenorphine. Nineteen respondents stated that they had not ever worked with clients taking this medication and seven indicated that they didn’t know whether they had or not. Fifty-seven substance abuse counselors indicated that they had previous experience working with clients taking buprenorphine, while 38 mental health counselors reported that they had worked with clients taking buprenorphine in the past.
Fifty-five participants (45.1%) reported that they were currently working with clients who were taking buprenorphine, 62 (50.8%) indicated that they were not, and four stated that they didn’t know if they were currently working with clients taking buprenorphine. Thirty-four substance abuse counselors reported that they were currently working with this client population and 21 mental health counselors reported that they were currently working with clients who were taking buprenorphine (see Table 2).

**Experience working with methadone.** All of the participants responded to the questions regarding whether they had ever worked with clients taking methadone and whether they were currently working with clients on this medication. One hundred and two participants (83.6%) reported that they had worked with clients taking methadone, 14 (11.5%) stated they had no experience working with clients taking methadone, and six participants (4.9%) stated that they did not know. Of those who indicated past experience working with clients who were taking methadone, 57 were substance abuse counselors and 45 were mental health counselors.

However, participants who reported that they were currently working with clients taking methadone was considerably less (n=33). Eighty-five participants (69.7%) indicated that they were not currently working with clients taking methadone and four (3.3%) stated they did not know. Twenty substance abuse counselors and 13 mental health counselors reported that they were currently working with clients who were taking methadone (see Table 2).

**Experience working with opioid dependency.** One hundred and twenty-one participants responded to the question regarding whether they had ever worked with
clients who have opioid dependency. The majority of participants indicated that they had experience working with this client population (n=118). All of the substance abuse counselors (65) and 53 mental health counselors reported that they had experience working with clients who had opioid dependency. All of the participants answered the question regarding whether they were currently working with clients who were opioid dependent. Of these, eighty-seven (71.3%) reported that they were currently working with clients who were opioid dependent. Fifty-five of these respondents were substance abuse counselors and 32 mental health counselors reported that they were currently working with clients who had opioid dependency (see Table 2).

**Education levels and licensure.** All of the participants responded to the question related to the highest degree held. Of these, eighty-one (66.4%) reported having at least one masters degree (some had two). A further twenty-five participants (20.5%) indicated that they had a doctoral degree. Six respondents reported a bachelor degree as the highest degree held, one indicated a high school diploma, and nine respondents nominated the ‘other’ category for the highest degree held. Of those who reported having a masters degree, 45 were substance abuse counselors and 36 were mental health counselors. Participants who reported having a doctoral degree comprised of 16 substance abuse counselors and nine mental health counselors.

All of the participants identified whether or not they had state or national certification as a substance abuse counselor. Fifty-seven participants (46.7%) reported that they had certification as a substance abuse counselor. Of these 56 were substance
abuse counselors, with only one mental health counselor reporting that they had state or national certification as a substance abuse counselor.

All of the participants responded to the question regarding whether they were currently licensed to work as an independent practitioner. Eighty-three (68%) reported that they were able to practice counseling independently. Thirty-nine respondents (32%) indicated that they were not currently licensed to work as an independent practitioner. Of those who indicated that they were licensed to practice independently, 47 were substance abuse counselors and 36 were mental health counselors (see Table 2).

**Personal recovery.** One hundred and twenty participants answered the question regarding personal recovery from addiction. Of these, thirty-three (27%) indicated that they were in recovery. Respondents who indicated that they were in personal recovery from addiction comprised of: 24 substance abuse counselors and nine mental health counselors. The number of years of personal recovery reported by the participants ranged from one year to thirty-five years. The mean number of years in recovery was 18.7 years. The information regarding the professional characteristics of the sample was summarized in Table 2.
Table 2

**Professional Characteristics of Participants**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Total</th>
<th>Substance Abuse</th>
<th>Mental Health</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td><strong>Familiarity Buprenorphine</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unfamiliar</td>
<td>13</td>
<td>10.7</td>
<td>4</td>
</tr>
<tr>
<td>Somewhat Familiar</td>
<td>41</td>
<td>33.6</td>
<td>14</td>
</tr>
<tr>
<td>Familiar</td>
<td>30</td>
<td>24.6</td>
<td>20</td>
</tr>
<tr>
<td>Very Familiar</td>
<td>38</td>
<td>31.1</td>
<td>27</td>
</tr>
<tr>
<td><strong>Familiarity Methadone</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unfamiliar</td>
<td>13</td>
<td>10.7</td>
<td>4</td>
</tr>
<tr>
<td>Somewhat Familiar</td>
<td>41</td>
<td>33.6</td>
<td>14</td>
</tr>
<tr>
<td>Familiar</td>
<td>30</td>
<td>24.6</td>
<td>20</td>
</tr>
<tr>
<td>Very Familiar</td>
<td>38</td>
<td>31.1</td>
<td>27</td>
</tr>
<tr>
<td><strong>Experience Buprenorphine</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Past</td>
<td>95</td>
<td>77.9</td>
<td>57</td>
</tr>
<tr>
<td>Current</td>
<td>55</td>
<td>45.1</td>
<td>34</td>
</tr>
<tr>
<td><strong>Experience Methadone</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Past</td>
<td>102</td>
<td>83.6</td>
<td>57</td>
</tr>
<tr>
<td>Current</td>
<td>33</td>
<td>27.0</td>
<td>20</td>
</tr>
<tr>
<td><strong>Education Levels &amp; Licensure</strong></td>
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</tr>
<tr>
<td>Highest Degree Held</td>
<td></td>
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<tr>
<td>Bachelor Degree</td>
<td>6</td>
<td>4.9</td>
<td>2</td>
</tr>
<tr>
<td>Masters Degree</td>
<td>81</td>
<td>66.4</td>
<td>45</td>
</tr>
<tr>
<td>Doctoral Degree</td>
<td>25</td>
<td>20.5</td>
<td>16</td>
</tr>
<tr>
<td>Other</td>
<td>9</td>
<td>7.4</td>
<td>2</td>
</tr>
<tr>
<td>Substance Abuse Certification</td>
<td>57</td>
<td>46.7</td>
<td>56</td>
</tr>
<tr>
<td>Independent Licensure</td>
<td>83</td>
<td>68.0</td>
<td>47</td>
</tr>
<tr>
<td><strong>Personal Recovery</strong></td>
<td>33</td>
<td>27.0</td>
<td>24</td>
</tr>
</tbody>
</table>
Preferred treatment. The majority of respondents indicated a combination of buprenorphine and counseling as their preferred treatment for opioid dependency. Fifty-seven respondents (46.7%) recorded this combination as their first preference. Counseling alone was reported as a preference over the combination treatment of methadone and counseling. Forty-four respondents (36.1%) indicated counseling as their first preference, while sixteen (13.1%) recorded a combination of methadone and counseling as their preferred treatment. As an opioid treatment by itself, methadone was not ranked as first preference by the majority of respondents. Only three respondents reported it as their first preference. Similarly, buprenorphine was not a preferred single treatment. Two respondents ranked it as their first preference.

Statistical Analyses to Test Null Hypothesis

The IBM Statistical Package for the Social Sciences (PASW Statistics) for Windows, version 18 was used to conduct statistical analyses. Descriptive statistics were used to test assumptions were not violated, and to present demographic and general information about the participants. A two-way Analysis of Variance (ANOVA) was the statistical procedure used to test the null hypotheses.

Assumption testing. The assumptions related to the two-way ANOVA were: 1) independence of observations, 2) normal distribution of observations, 3) homogeneity of variance, and 4) the assumption of sphericity (Meyers, Gamst, & Guarino, 2006). These assumptions were examined to determine that they were all satisfied.

The assumption of independent observations is usually satisfied if the sample population is randomly assigned. For this study the group participants who were
recruited from the AMHCA division of ACA were randomly selected by the marketing company in charge of AMHCA membership. Because members of the IAOCC division only numbered 630 in total, all of these were invited to participate in the current research. The survey was sent to participants via email to addresses that they had provided to the ACA. Because the emails were sent to individual email accounts and participants had no knowledge of who else would receive a survey, it is reasonable to state that the assumption of independence was satisfied. Additionally the survey program Qualtrics provided a ‘by invitation only’ option. This allows only those who receive invitation emails to take the survey. This option was selected to prevent participants from inviting work colleagues or others to participate in the survey and as a measure to prevent violation of the assumption of independence.

The assumption of normality was tested by examining kurtosis scores, histograms, and the normal Q-Q plots. See Appendix F for histograms of the data distribution and Q-Q plots. According to these figures, the scores appeared to be normally distributed.

The homogeneity of variance assumption was examined using Levene’s test of equality of error variances. An examination of this test indicated a non significant F test for each within-subjects group, indicating homogeneity of variance of the dependent variables. Table 3 shows the results of Levene’s test.
Table 3

*Levene's Test of Equality of Error Variances*

<table>
<thead>
<tr>
<th></th>
<th>F</th>
<th>df1</th>
<th>df2</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buprenorphine</td>
<td>0.030</td>
<td>1</td>
<td>120</td>
<td>0.863</td>
</tr>
<tr>
<td>Methadone</td>
<td>0.809</td>
<td>1</td>
<td>120</td>
<td>0.370</td>
</tr>
<tr>
<td>Counseling</td>
<td>0.039</td>
<td>1</td>
<td>120</td>
<td>0.844</td>
</tr>
</tbody>
</table>

*Note.* The adopted level of significance is 0.05

Additionally, the covariance matrices of the dependent variables were equal across the measures. Box’s test of equality of covariance matrices was not statistically significant ($p > 0.581$).

Finally, the assumption of sphericity was examined using Mauchly’s test of sphericity. This tests whether or not the population variances of the repeated measures are equal, and that the population correlations among all pairs of measures are equal. Violations of this assumption decrease power and increase type II error rate. The assumption of sphericity was not met ($p < 0.05$). Corrections that were applied to produce a valid $F$-ratio are discussed later in this chapter. See Table 4 for the results.

Table 4

*Mauchly’s Test of Sphericity*

<table>
<thead>
<tr>
<th>Within Subjects Effect</th>
<th>Mauchly’s W</th>
<th>Approx. Chi – Square</th>
<th>df</th>
<th>Sig.</th>
<th>Greenhouse-Geisser</th>
<th>Huynh-Feldt</th>
<th>Lower-bound</th>
</tr>
</thead>
<tbody>
<tr>
<td>TX_TYPE</td>
<td>0.922</td>
<td>9.710</td>
<td>2</td>
<td>0.008</td>
<td>0.927</td>
<td>0.949</td>
<td>0.500</td>
</tr>
</tbody>
</table>

*Note.* The adopted significance level is 0.05
Two-way analysis of variance.

The purpose of this study was to examine the attitudes of counselors toward different opioid treatment interventions. The independent variable had two levels: 1) substance abuse counselors and 2) mental health counselors. The dependent variable had three measures: 1) buprenorphine, 2) methadone, and 3) counseling. In the following section, each null hypothesis is analyzed.

**Hypothesis One.** There are no significant differences between substance abuse counselors and non substance abuse counselors regarding attitudes toward treatment for opioid addiction. Results of the analysis indicated that there was a statistically significant difference between the means of substance abuse counselors and mental health counselors regarding their attitudes toward the three treatments for opioid addiction. The main effect of counselor type produced an $F$ value of 12.195, which was evaluated at 1 and 120 degrees of freedom and was statistically significant ($p<0.05$). Therefore the null hypothesis was rejected (see Table 5).

### Table 5

*Tests of Between-Subjects Effects*

<table>
<thead>
<tr>
<th>Source</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>2371.476</td>
<td>1</td>
<td>2371.476</td>
<td>3892.805</td>
<td>0.000</td>
<td>0.970</td>
</tr>
<tr>
<td>COUN&gt;Type</td>
<td>7.429</td>
<td>1</td>
<td>7.429</td>
<td>12.195</td>
<td>0.001</td>
<td>0.092</td>
</tr>
<tr>
<td>Error</td>
<td>73.103</td>
<td>120</td>
<td>0.609</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* The adopted significance level is 0.05
Hypothesis Two. There are no significant differences in attitudes toward treatment for opioid addiction based on buprenorphine, methadone and counseling as treatment options. The test of within-subjects effects is presented in table 6. Because Mauchly’s test of sphericity was statistically significant, the Greenhouse-Geisser correction factor which corrects the degrees of freedom by the estimate of sphericity (Field, 1998) was used for interpretation. The within-subjects main effect of treatment type was found to be statistically significant, $F(1.855, 222.561) = 95.54, \ p<0.05$. The partial eta squared value was 0.443, indicating that approximately 44% of the within-subjects variability was accounted for by treatment type. Because $p<0.05$, the null hypothesis was rejected.

Table 6

Tests of Within-Subjects Effects

<table>
<thead>
<tr>
<th>Source</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
</tr>
</thead>
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<tr>
<td>TX_TYPE</td>
<td>Greenhouse-Geisser</td>
<td>59.395</td>
<td>1.855</td>
<td>32.025</td>
<td>95.540</td>
<td>0.000</td>
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<tr>
<td>TX_TYPE * COUTYPE</td>
<td>Greenhouse-Geisser</td>
<td>0.022</td>
<td>1.855</td>
<td>0.012</td>
<td>0.035</td>
<td>0.958</td>
</tr>
<tr>
<td>Error (TX_TYPE)</td>
<td>Greenhouse-Geisser</td>
<td>74.602</td>
<td>222.561</td>
<td>0.335</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. The adopted significance level is 0.05
**Post Hoc Analysis**

The nature of the within-subjects main effect was determined using a Bonferroni multiple comparison test ($p<0.05$). Results showed that the mean for buprenorphine ($M = 2.459$) was statistically different from the mean for methadone ($M = 3.009$) and counseling ($M = 2.023$). Similarly the mean for methadone was statistically different from the mean for counseling. Table 7 provides the output of the mean comparisons, showing the difference between the means. Thus the results indicated that the participants disagreed most with providing only counseling treatment for opioid dependent clients. They disagreed second most with providing only buprenorphine treatment and they disagreed least with methadone treatment.

### Table 7

**Bonferroni Adjustment for Multiple Comparisons**

<table>
<thead>
<tr>
<th>(I) Treatment Type</th>
<th>(J) Treatment Type</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>Lower Bound</th>
<th>Upper Bound</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buprenorphine</td>
<td>Methadone</td>
<td>-.41549*</td>
<td>.08378</td>
<td>.000</td>
<td>-.6170</td>
<td>-.2140</td>
</tr>
<tr>
<td></td>
<td>Counseling</td>
<td>.56926*</td>
<td>.08378</td>
<td>.000</td>
<td>.3678</td>
<td>.7708</td>
</tr>
<tr>
<td>Methadone</td>
<td>Buprenorphine</td>
<td>.41549*</td>
<td>.08378</td>
<td>.000</td>
<td>.2140</td>
<td>.6170</td>
</tr>
<tr>
<td></td>
<td>Counseling</td>
<td>.98475*</td>
<td>.08378</td>
<td>.000</td>
<td>.7832</td>
<td>1.1863</td>
</tr>
<tr>
<td>Counseling</td>
<td>Buprenorphine</td>
<td>-.56926*</td>
<td>.08378</td>
<td>.000</td>
<td>-.7708</td>
<td>-.3678</td>
</tr>
<tr>
<td></td>
<td>Methadone</td>
<td>-.98475*</td>
<td>.08378</td>
<td>.000</td>
<td>-1.1863</td>
<td>-.7832</td>
</tr>
</tbody>
</table>

Note. *The mean difference is significant at the 0.05 level.
Hypothesis Three. There is no interaction effect between the professional identification of counselors and treatment options and attitudes toward treatment for opioid addiction. The within-subjects interaction effect and the between-subjects effect were examined. Results indicated that treatment type did not interact or vary across the groups of counselor type (See Figure 1). Therefore, the conclusion was to fail to reject the null hypothesis.

Figure 1. Estimated Marginal Means

Additionally, Figure 1 shows that mental health counselors mean scores were slightly higher than substance abuse counselors’ scores on all three measures. Items on the treatment scales were: 5 = strongly agree; 4 = agree; 3 = neutral; 2 = disagree; 1 =
strongly disagree. Group mean scores for mental health counselors was 2.745 on the buprenorphine scale and 3.151 on the methadone scale. These scores suggested that, on average mental health counselors reported disagreement toward the items on the buprenorphine scale, and their responses toward methadone as a treatment option were neutral. Substance abuse counselors had lower averages overall, with mean scores of 2.459 for buprenorphine and 2.885 for methadone. These scores indicated that substance abuse counselors were more inclined to disagree with the items related to the respective medications as treatments for opioid dependency.

The mean scores for the counseling scales were lower than those for both of the medication scales. Mental health counselors were slightly less inclined to disagree that counseling was an effective treatment (mean=2.185), than substance abuse counselors (mean=1.881). (See Table 8).

Table 8

<table>
<thead>
<tr>
<th>Counselor</th>
<th>Type</th>
<th>M</th>
<th>SD</th>
<th>N</th>
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</thead>
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<td>Buprenorphine</td>
<td>Substance Abuse</td>
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<td>0.678</td>
<td>65</td>
</tr>
<tr>
<td></td>
<td>Mental Health</td>
<td>2.745</td>
<td>0.674</td>
<td>57</td>
</tr>
<tr>
<td>Methadone</td>
<td>Substance Abuse</td>
<td>2.885</td>
<td>0.732</td>
<td>65</td>
</tr>
<tr>
<td></td>
<td>Mental Health</td>
<td>3.151</td>
<td>0.630</td>
<td>57</td>
</tr>
<tr>
<td>Counseling</td>
<td>Substance Abuse</td>
<td>1.881</td>
<td>0.549</td>
<td>65</td>
</tr>
<tr>
<td></td>
<td>Mental Health</td>
<td>2.185</td>
<td>0.568</td>
<td>57</td>
</tr>
</tbody>
</table>
Reliability Analyses on Survey Instrument

**Buprenorphine measure.** Cronbach’s alpha (α) coefficient was used to calculate the internal consistency of the items that assessed attitudes toward buprenorphine. The reliability coefficient (α = 0.903) was almost identical to that shown in the second pilot study (α = 0.904). These results suggest that the buprenorphine measure of the survey instrument provided reliable results.

**Methadone measure.** Similarly, the internal consistency of the items that measured attitudes toward methadone remained comparable to that found in the second pilot study. In the current study α = 0.884, and in the second pilot study α = 0.887.

**Counseling measure.** The reliability of the items that measured attitudes toward counseling as a treatment for opioid dependency remained high (α = 0.804). This was only marginally lower than the reliability found in the second pilot study, α = 0.902. Item-scale reliability indicated that there would be no improvement to this by deleting any items.

**Ad Hoc Analyses**

**Qualitative Data.** Participants were invited to provide comments at the end of the survey. This was a very general question: “We would like to know if you have any additional comments regarding the survey and its contents.” A total of 22 respondents (ten substance abuse counselors and twelve mental health counselors) supplied qualitative data regarding their opinions of buprenorphine, methadone, and counseling as treatment options for opioid dependency. The researcher consulted with a substance abuse counselor and a mental health counselor in order to develop a consensus about the
qualitative data. As stated previously, very few participants provided comments about their attitudes toward opioid treatment. While there was not enough data to support any one theme, two trends seemed to be indicated. First, six mental health counselors and three substance abuse counselors endorsed a combination of both counseling and medication as the most effective treatment for opioid dependency. The following examples reflect this sentiment:

*Mental health counselors*

Participant one:

I do not believe that any pharmacological intervention for opioid dependence, be it buprenorphine or methadone, will be significantly effective without counseling interventions at the same time. I have not found methadone to be an effective intervention at all; often it leads to more severe addiction issues which then need to be addressed at my facility through a long, drawn out detox or they are put on suboxone anyway.

Participant two:

Medication rarely works effectively alone. Some sort of support, counseling, or group is a necessary part of addiction treatment because of the social and emotional components.

Participant three:

I am currently on suboxone maintenance. I see a counselor 1x/week and go to group counseling 1x/week. Suboxone saved my life and has been incredibly effective for myself, my patients, my peers, and others. I would not be where I am today without suboxone.

Participant four:

Without some sort of focused human support, relapse usually occurs in 30-60 days regardless of what prophylactic is used.
Substance abuse counselors

Participant five:

I think the best method of treating opioid dependency is medication and counseling combined. I believe that the clients do better with both forms of treatment.

Participant six:

I don't believe methadone and/or Suboxone should be a stand alone tx. The fact that Suboxone is stand alone appears to decrease it's effectiveness and often leads the most dependent cts to Methadone tx - where suboxone may have been effective (and les restrictive, access-wise) if it had been coupled with counseling (instead of MD dispensing only).

The second trend that emerged from the qualitative data was support for abstinence based treatment and/or a lack of confidence in pharmacotherapy treatment as an effective intervention for opioid dependency (four mental health counselors and five substance abuse counselors). Of note, all but one of the substance abuse counselors reported that they were in recovery from addiction.

Mental health counselors

Participant seven:

In my opinion Methadone is not only a waist of money but makes the addict remain addicted. Withdrawal should be inpatient only. Once the physiologic dependance is removed it should not be given a substitute. The vast majority of successful recovering addicts will tell you the same.

Participant eight:

My overall opinion related to substance addictions, is that group treatment is the best. I have reservations about the effects of using another substance to help manage in recovery. I have seen that end up maintaining addictive behavior and create avoidance of a genuine recovery attitude. Thank you for the opportunity to participate.
Substance abuse counselors

Participant nine:

I see a consistent pattern of misuse of suboxone and methadone, and the culture of counseling for those who administer suboxone and methadone create a dependency.

Participant ten:

The use opiate agonists only transfers the addictive substance. It is necessary to achieve abstinence in order to heal and change the brain. My clients whom have used methadone and/or suboxone report that the withdrawal from both is more painful and difficult than opiate withdrawal. Addiction is a brain disorder that requires addressing the underlying trauma in order to facilitate long term healing. While the concept of using these drugs to shift a client’s drug seeking behavior seems logical, in reality this strategy has a sketchy track record and tends to prolong the recovery period by maintaining the disease state through shifting only the substance used.

Participant eleven:

Suboxone is harder to kick than Heroin. As a short term taper it is not a bad idea - but not a great one. As a long term treatment it only makes money for doctors and does not help the client. In Dallas you can buy Suboxone on the streets - to get high - so that seems to negate the idea that it does not get Heroin addicts high. Methadone is only in place to make money. Trading one addiction for another is no solution. It damages client's brains - like Heroin would do.

Participant twelve:

Suboxin and Methodone are also addictive and in my opinion should only be used for conditions which are terminal.
Two mental health counselors strongly endorsed buprenorphine, and expressed unfavorable views of methadone:

Participant thirteen:

Some of my clients hate methadone and want to get off it. Those who have tried suboxone have liked it.

Participant fourteen:

I'm a recovering addict who has just completed a Master's Degree in Community & Agency counseling. I struggled with addiction for 20 years, namely opioids. I've been through Methadone and failed miserably. In addition, I saw many addicts do the same. Suboxone saved my life.

Another two mental health counselors expressed concern that recommending pharmacotherapy to their clients was outside of their scope of practice.

Participant fifteen:

I'm puzzled as to the reasons you asked about my knowledge of bupenorphine and methadone treatment. Most community mental health therapists don't have much background in those specialized treatments. Whenever I begin to treat someone with opioid addiction, if they are not in substance abuse treatment, I immediately refer them to it. In this state it would not be ethical for me to treat them.

Participant sixteen:

I can not imagine recommending my clients for any type of medication treatment. It seems that would fall outside of my scope of practice.
Chapter Five: Discussion

Based on the data analysis, this chapter presents a description of the sample, and the results of the null hypothesis testing. Implications of the current study are discussed as well as the associated limitations of the study. Finally directions for future research are presented.

Sample Characteristics

The description of the sample includes response rate, the professional identification of counselors, gender, and race. The response rate for the participants in this study overall was lower than the projected 10%. However, the portion of the sample which comprised of substance abuse counselors’ had a response rate of 10.3%. Conversely the response rate from the mental health counselors was 2%. This could have been a result, in part, of the data collection procedures.

Because the researcher did not directly recruit the mental health counselors from the AMHCA division of ACA, and did not have access to the email addresses for this group, a reminder to respond to the survey was not able to be sent. Consequently, in order to reduce researcher bias, reminders were deliberately not sent to the substance abuse counselors group. Another factor which could have impacted on the discrepancies between the response rates of the different groups could have simply been that substance abuse counselors have more of a vested interest in research related to opioid treatment than mental health counselors.

This study included 65 substance abuse counselors and 57 mental health counselors. However, familiarity with buprenorphine and experience working with
clients taking this medication was not confined to substance abuse counselors. One hundred and nine participants indicated some familiarity with buprenorphine and 95 reported some experience working with clients who were prescribed the medication. Therefore, lack of knowledge of buprenorphine was not an identified issue for the majority of the respondents in this study.

The study comprised of 67 females (54.9%) and 38 males (31.1%). Compared to other studies, there was a slightly higher percentage of males represented in this study. The overall percentage of females in the Rieckmann, et al. (2007) study was 69.3% (n=376). Similarly, Evans (2006) reported a sample comprising of 66% females (n=188). An anomaly related to the gender item was the number of non responses. Seventeen participants did not respond to this question. As there was an option given in this item to respond as transgender, the researcher cannot offer an explanation for the missing data.

The sample for the study was predominantly white (86.1%). Eight participants identified as Multiracial (6.6%), six as Black/African American (4.9%), two as Hispanic/Latino (1.6%), and one participant was Asian Indian (0.8%). This is comparable to other studies which reported the following racial identification within their samples: 90% Caucasian and 10% Non Caucasian (Evans, 2006); 88.6% Caucasian, 8.1% Minorities, and 3.3% Hispanic (Rieckmann et al., 2007).

Twenty-seven percent of the sample reported that they were in recovery from addiction. This result was similar to a previous study in which 21% of a group of outpatient counselors indicated that they were in recovery (Rieckmann et al., 2007).
In order to determine whether the mean age of participants in the current research (50 years of age) was an anomaly, other studies which assessed the attitudes of counselors was investigated. Only two studies were found which reported the age of participants.

The reported mean age of counselors (n=162) who participated in a study assessing their beliefs and awareness of substance abuse treatment was: 44.98 years of age for counselors who worked for research affiliated programs, and 46.52 years of age for counselors who worked for non research affiliated programs (Arfken, et al., 2005). Similarly, a study that compared attitudes toward addiction and methadone treatment of six professional groups (n=170) reported the following age means: Chemical Dependency Counselors 50 years, Professional Counselors 59.8 years, Professional Clinical Counselors 57 years, Licensed Social Workers 46.1 yrs, Licensed Independent Social Workers 52.5 years, and Psychologists 51 years (Evans, 2006). Therefore, in the context of the above-mentioned studies, the mean age of respondents in the current research was not unique or peculiar to this study.

**The Null Hypothesis**

The first hypothesis that there was no difference between substance abuse counselors and mental health counselors regarding their attitudes toward opioid treatment was rejected. There was a statistically significant difference between the mean scores of these groups. Unexpectedly, the mental health counselors had slightly higher mean scores than the substance abuse counselors on all three measures. The researcher assumed that substance abuse counselors would more readily endorse pharmacotherapy
treatment as by definition they have expertise in addiction counseling. This difference in mean scores between the two counseling groups could be the result of a number of factors.

Other studies have found unfavorable attitudes toward pharmacotherapy among substance abuse counselors. More than two thirds of substance abuse counselors reported not knowing whether buprenorphine was an effective treatment in one study (Knudson, et al., 2005). Another study found substance abuse counselors attitudes toward buprenorphine to be at best neutral, with inclinations toward negative. (Rieckmann, et al., 2007). In these studies lack of knowledge about opioid treatment medications was considered a contributing factor to the associated negative attitudes. However, in the current research 83.6% of respondents indicated that they had worked with clients taking methadone and 77.8% reported experience working with clients taking buprenorphine. Therefore, the majority of both substance abuse counselors and mental health counselors indicated that they had some knowledge of the medication treatments being studied. Despite an understanding of and experience with both buprenorphine and methadone, substance abuse counselors in the current research were more likely to disagree with the items related to these treatment options.

However, the mean scores for both groups did not indicate a strong endorsement for any of the treatment measures. Another possibility for the differences between the groups was that substance abuse counselors were more inclined to disagree with the items on the treatment scales, while the mental health counselors may have been more inclined to report neutrality. The Likert scale used did not allow for a “don’t know” option.
Therefore, mental health counselors may have reported the “neutral” option when in fact they didn’t know.

Another explanation for the difference between the groups could be that a combination of counseling and medication was not measured in the analysis. Empirical evidence has suggested that pharmacotherapy combined with counseling yields the most effective substance abuse treatment interventions (Fitzgerald & McCarty, 2009). Therefore, the substance abuse counselors may simply not have believed that medication or counseling alone were adequate or effective treatments for opioid dependency.

This is somewhat supported by the responses to the item of the survey that asked participants to rank their preferred treatment options for opioid dependency. The majority of respondents (n=57) reported a combination of buprenorphine and counseling as their first treatment preference. However, the trend found in the qualitative data suggested that mental health counselors have awareness that a combination of counseling and medication is the most efficacious with six mental health counselors endorsing this treatment option. Caution does need to be exercised when interpreting the qualitative data, as there were so few responses (22 respondents in total).

Other literature has suggested that substance abuse counselors who are in personal recovery hold traditional abstinence based beliefs about treatment for addiction (Fitzgerald & McCarty, 2009). This could have been a factor in the current study. Over one third of the substance abuse counselors in this study, approximately 36.9%, indicated that they were in personal recovery. Therefore, it is possible that substance abuse counselors who participated in this study reported neutral or negative attitudes toward
pharmacotherapy treatment because endorsing medication would be in direct conflict with traditional values of abstinence. The qualitative data tentatively supports this premise. Four out of the five substance abuse counselors who provided comments that endorsed abstinence had indicated that they were in personal recovery from addiction. Of the four mental health counselors who made comments supporting abstinence, one had reported being in personal recovery from an opioid addiction.

Another explanation for the differences between the groups could be that substance abuse counselors have become cynical about treatment for people with opioid dependency. The characteristics of people with opioid dependency have been identified as: 1) low retention in treatment and 2) continued illicit drug use (Copenhaver, Bruce, & Altice, 2007). Consequently, substance abuse counselors may have become less optimistic about treatment interventions for opioid dependency. They would have more frequent contact with this client population than non substance abuse counselors, and therefore are more exposed to the above-mentioned characteristics.

Finally, the lower mean scores for both groups may be a reflection of the current US culture. As was mentioned in chapter two, since the 1980’s there has been a return to a more punitive approach toward treatment for opioid dependency in the US (Falco, 2005). Federal funding for treatment, prevention and education has been significantly reduced and funding for drug enforcement has more than doubled.

The low mean scores reported for counseling as a treatment option for opioid dependency by both substance abuse counselors and mental health counselors revealed an anomaly in the current study. The means scores for counseling were 1.88 and 2.18 for
substance abuse counselors and mental health counselors respectively. However, counseling was ranked as the preferred treatment option by 44 respondents on the survey item that required the participants to rank the following treatments in order of preferred treatment for opioid addiction: Buprenorphine (Suboxone/Subutex), Counseling, Methadone, Buprenorphine and Counseling, and Methadone and Counseling. The researcher can only speculate two possible rationales for this discrepancy.

First, the items on the counseling scale which the mean scores were calculated on, occurred in the beginning of the survey, and the question related to preferred treatment option occurred at the end of the survey. It could be that respondents were influenced by questions in the earlier part of the survey which in turn resulted in a change of opinion by the end of the survey. Another possible explanation could be response set bias, which occurs when respondents do not consider each question, but rather answer all of the questions with the same response. Respondents could have answered “disagree” to all of the items on the counseling scale without reading the questions, and when faced with an item that required ranking treatments in order, provided a more accurate reflection of their attitudes.

Finally, there was a statistical difference in the mean scores of counselors on the three treatment measures for opioid addiction (buprenorphine, methadone, and counseling). Therefore the differences in attitudes toward buprenorphine, methadone and counseling were statistically significant with methadone reported as more preferable than buprenorphine and buprenorphine as more preferable than counseling. The results further
indicated that there was no interaction effect between counselor groups and treatment interventions.

**Ad Hoc Analyses**

As mentioned in chapter four, 22 respondents (ten substance abuse counselors and twelve mental health counselors) supplied qualitative data regarding their opinions of buprenorphine, methadone, and counseling. Although there was not enough data to support any specific themes, two trends seemed to be indicated. One trend suggested that both substance abuse counselors and mental health counselors may endorse a combination of both counseling and medication as the most effective treatment for opioid dependency. The other tentative trend indicated that there may be some support from both group of counselors for abstinence-based treatment. A more detailed study in future research of this qualitative data with more specific question is recommended. This is further discussed in the recommendations section of this chapter.

**Implications of Findings**

Results of the current study have implications for both counselors and counselor educators. Previous literature has suggested that there has been minimal support for buprenorphine as a treatment for opioid addiction among substance abuse counselors (Fitzgerald & McCarty, 2009; Knudson, et al., 2005; Rieckmann, et al., 2007). The results of the current study support the findings of other literature. Substance abuse counselors mean scores indicated neutrality or slightly negative attitudes toward both buprenorphine and methadone. However, the primary implication for counselors is that mental health counselors reported more favorable attitudes toward both methadone and
buprenorphine than their counterparts. While further research is needed to better understand these differences between the groups of counselors, the results of the current study raises the question: Are substance abuse counselors supporting the empirical evidence that pharmacotherapy combined with counseling yields the most effective treatment intervention, in their clinical practice? Previous literature has reported that despite the empirical evidence, relatively few clients receive medication as part of their treatment (Fitzgerald & McCarty, 2009).

While counselors do not prescribe medication for their clients, there has been literature indicating that client’s choice of treatment can be dependent on the opinions of others and that they are susceptible to the attitudes of their counselors (Ridges, et al., 2009). If a client’s choice of pharmacotherapy treatment can be primarily influenced by information received by others, then it is of paramount importance that counselors are able to provide their client’s with information that is evidence-based. The implications of the current study suggest that substance abuse counselors are less inclined to endorse medication as a treatment option for opioid dependency than mental health counselors.

Other literature has indicated that buprenorphine may be influential in providing treatment to a population of people who may not otherwise seek help (Sullivan, et al., 2005). The emerging profile of prescription opioid users has been characterized as younger, having fewer years of opioid dependency, lower incidence of injecting drug use, and more likely to be employed than those who have been enrolling for methadone maintenance. However, the results of this study suggest that methadone was rated as more preferable than buprenorphine by both groups of counselors. This could mean that
prescription opioid users may decide not to utilize pharmacotherapy if methadone is presented to them as the preferred intervention.

Additionally, the higher scores reported in the current study for the methadone scale has potential implications for accessibility to treatment. In the US, methadone can only be provided in specially licensed clinics. It has been estimated that only 20% of Americans who have opioid addiction are able to access treatment places in these clinics, and communities have been resistant to allowing methadone clinics to open up or expand. Subsequently, there has been some stigma attached to attending a methadone treatment facility (Mendelson, et al., 2008). The introduction of buprenorphine as a treatment option for opioid addiction has the potential to remedy these treatment accessibility issues. Buprenorphine can be initiated in a physician’s office and rather than dosing at a clinic, clients’ can administer their dose in the privacy of their home. However, the results of the current study suggest that buprenorphine may not be presented to clients as a preferred treatment option due to the low rate of endorsement by substance abuse counselors and mental health counselors.

With the inclusion of addiction studies in the new CACREP standards for counselor education programs, counselor educators have an opportunity to breach the potential gap between empirical evidence and clinical practice. Findings of this study suggest that there is a need to provide factual, evidence-based information regarding pharmacotherapy interventions for opioid treatment to counselors in training.
Limitations of the Study

As mentioned in chapter one of this study, there were five limitations identified. External validity could have been compromised due to the fact that the researcher had no control over the circumstances under which the survey was completed. Additionally, participants in the study were not provided with any information about buprenorphine prior to the completion of the survey, and therefore there was no way to determine what information (if any) respondents were basing their reported attitudes toward the medication. Likewise, it was assumed that participants would respond to the survey items honestly, and accurately report their information.

Another identified limitation was the data collection process for this study. Recruitment of the sample was not as well controlled or organized as the researcher had initially intended. It was not anticipated that the researcher would be unable to access contact details for the non substance abuse counselor group and therefore not have control of the dissemination of the survey to this group. Additionally, the researcher did not foresee that the minimum number of members who could be contacted for the non substance abuse counselors group would be 2000, or that the substance abuse counselors group would number only 630 in total. This discrepancy in available numbers of potential participants precluded the random assignment of respondents from the substance abuse counselors group. Furthermore, the research design (quasi-experimental) restricted the interpretation of the results from making causal inferences. Finally, the low response rate was another limitation of this study. It was not anticipated that the response rate for mental health counselors would be as low as two percent.
**Directions for Future Research**

This study was focused on comparing attitudes toward buprenorphine to two other treatments for opioid dependency (methadone and counseling). Two groups: substance abuse counselors and mental health counselors were compared regarding their attitudes toward these treatment interventions. The two-way ANOVA analysis found a statistically significant difference in the mean attitude scores of the two groups studied. Of interest were the higher mean scores for mental health counselors which warrants further investigation in future research. It would be beneficial to investigate whether mental health counselors are less negative in their attitudes toward pharmacotherapy treatments because they do not share the traditional abstinence based beliefs that have historically characterized substance abuse counseling.

The current research is one of the few studies that have sought to investigate the attitudes of mental health counselors toward opioid treatments. The focus was on counselors who were members of ACA. With the increasing incidence of prescription opioid dependency permeating US society (Mendelson, et al., 2008), it has become more likely that non substance abuse counselors will encounter clients who have opioid addiction. Therefore, future research could look to broaden the scope of mental health counselors to include those who are not members of ACA.

Additionally, as was mentioned earlier in this chapter, the combination of counseling and medication has been shown to be the optimum treatment intervention for addiction (Fitzgerald & McCarty, 2009). Future studies could broaden the opinions
survey to include combination treatments of the respective medications with counseling, rather than presenting them as separate treatment options.

Another limitation of this study was the quasi-experimental design which prevented causal inferences. Future research that has an experimental design could investigate what influences counselors attitudes toward opioid treatments. An additional limitation of the current study was that respondents were not given information about the treatment measures. The reported familiarity and experience with both buprenorphine and methadone could have been a result of the counselors simply having contact with clients taking these medications, or based on anecdotal information. Incorrect information can lead to negative attitudes. Future research could pre-test counselors’ knowledge of opioid treatments, provide information about these medications, and then conduct a post test to determine whether there have been any reported changes. This would more accurately determine what knowledge the respondents are using as a basis for their opinions regarding buprenorphine and methadone.

A delimitation of this study was the focus on the adult population who are opioid dependent. However, as mentioned earlier in this chapter, one of the characteristics of the emerging population of people who have an addiction to prescribed opioids is their younger age. Additionally, chapter one of this study described how the prevalence of prescription drug misuse was second only to marijuana among 12th graders, and Vicodin (an opioid) was the most abused prescription drug (Compton & Volkow, 2006a). Future research could therefore explore differences in attitudes toward adult treatment for opioid addictions versus opioid treatment for adolescents.
Future studies could further explore whether or not opioid addiction is viewed differently to other substances of dependence. For instance, there are pharmacotherapy treatments available for alcohol dependency. Understanding differences in perceptions toward opioid addiction and for example alcohol addiction may indicate any treatment biases toward a client population.

While the qualitative data provided in the current study was not sufficient to determine actual themes, the comments that were provided warrant further investigation. Future research could specifically ask counselors about their attitudes toward treatment options for opioid dependency. A qualitative study could explore in depth these attitudes.

Finally, research has indicated that there is a relationship between the attitudes of substance abuse counselors toward pharmacotherapy treatment for opioid addiction and their personal recovery status (Fitzgerald & McCarty, 2009). The current research found that substance abuse counselors were more inclined to disagree with items on the medication measures. Future studies could further explore correlations between these variables.

**Conclusion**

This study explored the attitudes of substance abuse counselors and mental health counselors toward buprenorphine, methadone, and counseling. The findings of the study provide additional literature regarding how buprenorphine is viewed by counselors. Specifically it raises the question: Why are substance abuse counselors more likely to disagree with items related to both buprenorphine and methadone as treatment interventions for people with opioid dependency than mental health counselors?
Research to date has had similar findings when investigating the attitudes of substance abuse counselors toward pharmacotherapy treatment (Arfken, Agius, Dickson, Anderson, & Hegedus, 2005; Knudsen, Ducharme, Roman, & Link, 2005; Rieckmann, Daley, Fuller, Thomas, & McCarty, 2007). However, this study provided an opportunity to compare the attitudes of substance abuse counselors to that of mental health counselors. The findings indicated a statistically significant difference between these groups, with mental health counselors showing higher mean scores for all treatment types. These findings contribute to the literature supporting the need for further education and enquiry to be implemented if buprenorphine is to fulfill the intention of increasing the availability and accessibility of treatment to people with opioid dependency. It further highlights the need for counselor educators to incorporate information regarding pharmacotherapy into content for addiction courses.
References


Appendix A: IRB Approval

The following research study has been approved by the Institutional Review Board at Ohio University for the period listed below. This review was conducted through an expedited review procedure as defined in the federal regulations as Category(ies):

Project Title: Buprenorphine as an efficacious treatment for opioid dependency. A survey of counselor attitudes

Primary Investigator: Carol Agnew
Co-Investigator(s):

Faculty Advisor: Toni Davis

Department: Counseling and Higher Education

Rebecca Care, AAB, CIP
Office of Research Compliance

Approval Date: 07/06/10
Expiration Date: 07/05/11

This approval is valid until expiration date listed above. If you wish to continue beyond expiration date, you must submit a periodic review application and obtain approval prior to continuation.

Adverse events must be reported to the IRB promptly, within 5 working days of the occurrence.

The approval remains in effect provided the study is conducted exactly as described in your application for review. Any additions or modifications to the project must be approved by the IRB (as an amendment) prior to implementation.
Appendix B: Permission to use Instrument

From Dennis McCarty <mccartyd@ohsu.edu>
To "ca167607@ohio.edu" <ca167607@ohio.edu>
Subject Re: Opioid treatment attitude scale
Sent Mon, 8 Mar 2010 12:24:03 -0800

Carol
You have permission to use and modify the instrument
Yea a copy of your paper would be good
Thanks

----- Original Message ----- 
From: ca167607@ohio.edu <ca167607@ohio.edu>
To: Dennis McCarty
Sent: Mon Mar 08 11:51:13 2010
Subject: Opioid treatment attitude scale

Hello Dr McCarty,

My name is Carol Agnew. I am currently a doctoral student at Ohio University,
and am working on my dissertation. Dr Steven Clay contacted you in October
last year about using your Medications Opinion Survey from the
Rieckmann et al paper.

I appreciate your generosity in sending him the instrument and granting
permission for me to use and modify it in my research. For the purposes of IRB
and the dissertation committee, I just need your direct confirmation that
permission to use and modify the instrument has been given.

Once again, thank you for sharing your work, and please let me know if you
would like a copy of the results of the study I am conducting.

Regards,

Carol
Appendix C: Introductory Email to Survey

Dear Counselor,

My name is Carol Agnew. I am a doctoral student at Ohio University. I am working with Dr. Tom Davis to develop a better understanding of counselor’s attitudes toward treatment options for opioid addiction.

You are invited to take part in the research study. The estimated time to complete the survey is approximately 10 - 15 minutes.

Opioid addiction continues to be a major public health problem in the United States, particularly with the emergence of the abuse of prescription opioids such as Vicodin, Oxycodone, and Percocets. Usually counselors have the most direct and sustained contact with clients in treatment centers, and in community agencies counselors are the frontline workers who clients access initially for help. Therefore counselors have a pivotal function in providing referrals and links to prescribing physicians and other supportive services

Because your opinion is valuable, it is requested that you find a quiet place/time to complete the survey free from distractions.

Your assistance in this research project is greatly appreciated. Thank you for your time and willingness to consider your participation.

For information regarding consent and to access the online survey click on the following link:

http://ohed.qualtrics.com/SE?SID=SV_0Opr2KEn8k2vDAU

Yours sincerely,

Carol Agnew (Doctoral Candidate)

Thomas E. Davis Ph.D., PCC, Professor
Appendix D: Informed Consent

Ohio University Consent Form

Title of Research: Buprenorphine as an Efficacious Treatment for Opioid Dependency? A Survey of Counselor Attitudes.

Researcher: Carol Agnew

You are being asked to participate in research. For you to be able to decide whether you want to participate in this project, you should understand what the project is about, as well as the possible risks and benefits in order to make an informed decision. This process is known as informed consent. The following describes the purpose, procedures, possible benefits, and risks. It also explains how your personal information will be used and protected. Once you have read this form and your questions about the study are answered, you will be asked to indicate whether or not you agree to participate in this study.

Explanation of Study

The purpose of the study is to compare attitudes of substance abuse counselors and non substance abuse counselors toward three treatment options for opioid dependency: 1) buprenorphine (subutex/ suboxone); 2) methadone; and 3) counseling. If you agree to participate you will be asked to respond to the remainder of the online survey, which should take approximately 10-15 minutes.

Risks and Discomforts

No risks or discomforts are anticipated.

Benefits

There are no direct benefits or compensation to you for participating in this study. The information you provide on this survey could be beneficial to identify concerns or knowledge gaps related to treatment options for opioid dependent clients. Additionally, your input could be valuable in informing counselor educators about necessary instruction in CACREP accredited universities that are required to provide courses in addiction counseling.
Confidentiality and Records

Your responses to the survey are confidential. The information you provide will not be used for any purposes outside of this study and your name or any information that may identify you will not be reported in the study. All data stored on computers will be password protected, and any hardcopies of data will be kept in a locked filing cabinet and only accessible to the researcher.

Additionally, while every effort will be made to keep your study-related information confidential, there may be circumstances where this information must be shared with:
* Federal agencies, for example the Office of Human Research Protections, whose responsibility is to protect human subjects in research;
* Representatives of Ohio University (OU), including the Institutional Review Board, a committee that oversees the research at OU.

Contact Information

If you have any questions regarding this study, please contact Carol Agnew at ca167607@ohio.edu or 614-557-4725.

If you have any questions regarding your rights as a research participant, please contact Jo Ellen Sherow, Director of Research Compliance, Ohio University, (740)593-0664.

By checking the yes response below, you are agreeing that:
- you have read this consent form (or it has been read to you) and have been given the opportunity to ask questions
- known risks to you have been explained to your satisfaction.
- you understand Ohio University has no policy or plan to pay for any injuries you might receive as a result of participating in this research protocol
- you are 18 years of age or older
- your participation in this research is given voluntarily
- you may change your mind and stop participation at any time without penalty or loss of any benefits to which you may otherwise be entitled.

☐ Yes I agree and understand the above conditions (Please continue with the survey)

☐ No I do not wish to participate in the study (Exit the browser)
Appendix E: Survey Instrument

Buprenorphine (Suboxone/Subutex)

The following questions are focused on buprenorphine (Suboxone/Subutex) as a treatment for opioid dependency

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buprenorphine blocks cravings for opioids</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Buprenorphine is an effective opioid treatment</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>My co-workers think that I should work with clients who take buprenorphine to treat their opioid dependence</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Buprenorphine saves clients lives</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Clients taking buprenorphine for treatment of opioid dependence have better health</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Clients taking buprenorphine for treatment of opioid dependence report few side effects</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Statement</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Neutral</td>
<td>Disagree</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------</td>
<td>----------------</td>
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<td>---------</td>
<td>----------</td>
</tr>
<tr>
<td>My clinical supervisor thinks that I should work with clients who take buprenorphine</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buprenorphine is a long lasting medication</td>
<td>❌</td>
<td></td>
<td>❌</td>
<td>❌</td>
</tr>
<tr>
<td>Buprenorphine reduces opioid withdrawal symptoms</td>
<td>❌</td>
<td></td>
<td>❌</td>
<td>❌</td>
</tr>
<tr>
<td>My clients who are dependent on opioids think that they should take buprenorphine</td>
<td>❌</td>
<td></td>
<td>❌</td>
<td>❌</td>
</tr>
<tr>
<td>Buprenorphine is easy to administer</td>
<td>❌</td>
<td></td>
<td>❌</td>
<td>❌</td>
</tr>
<tr>
<td>People who are important to me think that I should work with clients who take buprenorphine</td>
<td>❌</td>
<td></td>
<td>❌</td>
<td>❌</td>
</tr>
<tr>
<td>I intend to tell my clients who are dependent on opioids to take buprenorphine</td>
<td>❌</td>
<td></td>
<td>❌</td>
<td>❌</td>
</tr>
</tbody>
</table>
**Methadone**

The following questions are focused on Methadone as a treatment for opioid dependency

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methadone blocks cravings for opioids</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Methadone is an effective opioid treatment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My co-workers think that I should work with clients who take methadone to treat their opioid dependence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Methadone saves clients lives</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clients taking methadone for treatment of opioid dependence have better health</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clients taking methadone for treatment of opioid dependence report few side effects</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My clinical supervisor thinks that I should work with clients who take methadone</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Statement</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Neutral</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------</td>
<td>----------------</td>
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<td>----------</td>
<td>-------------------</td>
</tr>
<tr>
<td>Methadone is a long lasting medication</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Methadone reduces opioid withdrawal symptoms</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>My clients who are dependent on opioids think that they should take methadone</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Methadone is easy to administer</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>People who are important to me think that I should work with clients who take methadone</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I intend to tell my clients who are dependent on opioids to take methadone</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
Counseling

The following questions are focused on counseling as a treatment for opioid dependency

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Counseling is an effective opioid treatment</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>My co-workers think that I should work with clients who receive counseling to treat their opioid dependence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Counseling saves clients lives</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clients receiving counseling for treatment of opioid dependence have better health</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My clinical supervisor thinks that I should work with clients who receive counseling</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My clients who are dependent on opioids think that they should receive counseling</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Neutral</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
<td></td>
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<td>----------------</td>
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<td>---------</td>
<td>----------</td>
<td>------------------</td>
<td></td>
</tr>
<tr>
<td>People who are important to me think that I should work with clients who receive counseling</td>
<td>![Circle]</td>
<td>![Circle]</td>
<td>![Circle]</td>
<td>![Circle]</td>
<td></td>
</tr>
<tr>
<td>I intend to tell my clients who are dependent on opioids to receive counseling</td>
<td>![Circle]</td>
<td>![Circle]</td>
<td>![Circle]</td>
<td>![Circle]</td>
<td></td>
</tr>
</tbody>
</table>
Preferred Treatment

Please rank the following in order of your preferred treatment for opioid addiction

1 = Top Choice

5 = Least favored choice

Buprenorphine (Suboxone/Subutex)
Counseling
Methadone
Buprenorphine and Counseling
Methadone and Counseling

How familiar are you with

Unfamiliar Somewhat Familiar Familiar Very Familiar
Buprenorphine (Suboxone/Subutex) ☐ ☐ ☐ ☐
Methadone ☐ ☐ ☐ ☐

Have you ever worked with clients taking

Yes No Don't Know
Buprenorphine (Suboxone/Subutex) ☐ ☐ ☐
Methadone ☐ ☐ ☐
Are you currently working with clients taking

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Don't Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buprenorphine</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>(Suboxone/Subutex)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Methadone</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

Have you ever worked with clients who have opioid dependency

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Don't Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heroin/Prescribed</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Opioids such as</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oxycodone, Vicodin,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percocets etc.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Are you currently working with clients who have opioid dependency

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Don't Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heroin/Prescribed</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Opioids such as</td>
<td></td>
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</tr>
<tr>
<td>Oxycodone, Vicodin,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percocets etc.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Are your clients typically

- ☐ Mandated
- ☐ Voluntary
- ☐ Both
Please provide some background information about yourself

Gender

Male  Female  Trans-gender

What is your age?

[ ] Click on box to enter

Highest Degree Held (check one)

☑ No High School Diploma
☑ High School Diploma/Equivalent
☑ Associates Degree
☑ Bachelor Degree
☑ Masters Degree
☑ Doctoral Degree
☐ Other (Please specify)

Do you have state or national certification as a substance abuse counselor?

☑ Yes
☑ No

Are you currently licensed to work as an independent practitioner?

☑ Yes
☑ No

Do you have supervisory credentials?

☑ Yes
☑ No
What type of licensure do you have?

Please list all forms of certification.

Which type of clinical practice setting do you currently work in?
- Community Mental Health
- Rehabilitation
- Addiction
- Other (Please specify)

Indicate your racial category or categories (select one)
- American Indian or Alaska Native
- Asian Indian
- Black or African American
- Chinese
- Filipino
- Guamanian or Chamorro
- Hispanic or Latino
- Japanese
- Korean
- Native Hawaiian
- Other Asian – For example, Hmong, Laotian, Thai, Pakistani, Cambodian, and so on
- Other Pacific Islander – For example, Fijian, Tongan, and so on
- Samoan
- Vietnamese
- White
- Multi-Racial or Other (Please Specify)
Are you in recovery from addiction?

☐ Yes
☐ No

If yes

For how many years?

We would like to know if you have any additional comments regarding the survey and its contents. All answers are confidential. Thank you.
Appendix F: Histogram and Q-Q Plot Normality Distributions

Figure 2. Histogram for Items on the Buprenorphine Scale

Figure 3. Normal Q-Q Plot for Items on the Buprenorphine Scale
Figure 4. Histogram for Items on the Methadone Scale

Figure 5. Normal Q-Q Plot for Items on the Methadone Scale
Figure 6. Histogram for Items on the Counseling Scale

Figure 7. Normal Q-Q Plot for Items on the Counseling Scale