

# The Association of Spirituality, Religiosity, Depression, Anxiety, and Drug Use Among Persons Undergoing Methadone Maintenance Therapy

Linda B. Piacentine  
Marquette University

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THE ASSOCIATION OF SPIRITUALITY, RELIGIOSITY, DEPRESSION,  
ANXIETY, AND DRUG USE AMONG PERSONS UNDERGOING  
METHADONE MAINTENANCE  
THERAPY

by

Linda B. Piacentine, M.S., R.N., ACNP-BC

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## ABSTRACT

### THE ASSOCIATION OF SPIRITUALITY, RELIGIOSITY, DEPRESSION, ANXIETY, AND DRUG USE AMONG PERSONS UNDERGOING METHADONE MAINTENANCE THERAPY

Linda B. Piacentine, M.S., R.N., ACNP-BC

Marquette University, 2010

The Substance Abuse and Mental Health Services Administration estimated 22.2 million (9.1 %) of Americans ages 12 and older abused or were dependent on an illicit substance or alcohol in 2005. Substance abuse often leads to addiction, and is damaging to the health of persons, families, and society.

Using Neuman's System Model as the conceptual framework, it was proposed that addiction weakens person's defenses with resultant loss of health. The person with addiction often also suffers from anxiety, depression, or both, increasing the risk for continued substance abuse and its concomitant negative consequences, such as loss of employment, poor finances, damaged relationships, and diminished spirituality. Spirituality is a factor in addiction that is poorly understood and warrants further exploration. The purpose of this study was to increase understanding of spirituality religiosity, depression, and anxiety among persons addicted to opioids.

A descriptive and cross-sectional correlational design was used to determine the association of spiritual well-being (SWB), religiosity, depression, anxiety, continued drug use, and drug use consequences during methadone maintenance therapy. Participants (n=108) completed questionnaires regarding SWB, religious background and behavior, anxiety, depression, and drug use consequences. Spiritual histories were obtained from participants' medical records. The majority of participants were white with a mean age of 34.8, had been in methadone therapy for an average of 3.1 years and 50% were male. Correlations were examined among the study variables and a regression model examined associations with negative consequences of drug use.

The SWB scale mean (86.7) was not significantly different than the mean found in similar groups (85.7,  $t_{(107)}=0.624$ ,  $p=0.534$ ). Spiritual well-being had a significant inverse correlation to both the depression ( $r=-0.47$ ,  $p<0.01$ ) and anxiety ( $r=-0.46$ ,  $p<0.01$ ) measures. Although spiritual well-being did not correlate with the negative consequences of drug use, existential well-being had a significant inverse correlation ( $r=-.022$ ,  $p<0.05$ ). Spirituality, religiosity, anxiety and depression accounted for 20.3% of the variance in negative drug use consequences ( $R^2=0.203$ ,  $F(4,103)=6.57$ ,  $p<.001$ ). Results demonstrate that spirituality, religiosity, depression, anxiety, and negative drug use consequences are interrelated in the person with addiction. Further understanding of spirituality in addiction is needed in order to provide spiritual care.

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Linda B. Piacentine, M.S., R.N., ACNP-BC

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## TABLE OF CONTENTS

ACKNOWLEDGEMENTS.....	i
TABLE OF CONTENTS.....	ii
LIST OF TABLES.....	iv
LIST OF FIGURES.....	v
CHAPTER	
I. INTRODUCTION.....	1
Statement of the Problem of Substance Addiction.....	1
Purpose of the Study.....	4
Significance of the Study.....	5
II. REVIEW OF THE LITERATURE/THEORETICAL FRAMEWORK.....	17
Literature Review.....	17
Theoretical framework - Neuman Systems Model.....	39
Conceptual and Philosophical Underpinnings.....	44
Assumptions of the Study.....	47
Chapter Summary.....	48
III. RESEARCH DESIGN AND METHODS.....	49
Research Aims.....	49
Methodology.....	50
Measures/Instruments.....	52
Procedures.....	58
Data Analysis.....	60
Justification for Sample Size.....	62
Human Rights Protection.....	62
IV. RESULTS.....	64

Sample Characteristics.....	64
Analysis of Aims.....	67
Chapter Summary.....	73
V. DISCUSSION.....	75
Interpretations of the Findings.....	75
Implications of the Findings.....	84
Importance of the Findings.....	87
Limitations of the Study.....	88
Relationship of the Findings to the Conceptual Framework.....	90
Implications of the Research for Nursing Practice and Education.....	91
Suggestions for Future Research.....	93
REFERENCES.....	95
APPENDICES	
A. Permission for SWBS.....	108
B. The Religious Background and Behavior Questionnaire.....	109
C. Patient Health Questionnaire 9-item Depression Module.....	110
D. Permission for STAI.....	111
E. Inventory of Drug Use Consequences.....	112
F. Advertising Flyer.....	115
G. Clinic Newsletter Article.....	116
H. Study Consent Form.....	117
I. Demographics/Clinic Assessment Form.....	119

## LIST OF TABLES

Table 1: Sample Characteristics.....	66
Table 2: Spiritual Well-Being, Existential Well-Being, and Religious Well-Being Means and Ranges.....	68
Table 3: SWBS of Reference Groups from the Literature.....	70
Table 4: Correlation Matrix for Spiritual Well-Being, Religiosity, Depression, Anxiety and Drug Use Consequences (Pearson's r correlations).....	71

## LIST OF FIGURES

Figure 1: Conceptualization of the Neuman Systems Model.....	41
Figure 2: Measurements of Client System Variables.....	53
Figure 3: Results and Relationships Among Study Variables.....	80



## Chapter I

### Introduction

#### Statement of the Problem of Substance Addiction

Substance abuse and dependence are common problems in society today. Household interviews in 2005 estimated that approximately 22.2 million (9.1 %) Americans age 12 years and older abused substances or were dependent on an illicit substance or alcohol (Substance Abuse and Mental Health Services Administration [SAMHSA], 2006). The annual cost of substance abuse in this country continues to rise, with costs related to health, crime and loss of potential productivity. It is estimated that the cost of substance abuse in this country was 180.9 billion dollars in 2002 alone (Office of National Drug Control Policy [ONDCP], 2004).

Substance abuse involves the recurrent use of substances that lead to significant impairment or distress (Frances, First, & Pincus, 1995). Substance abuse can lead to substance dependence when a person shows tolerance to a drug, withdrawal symptoms when not receiving a drug, or compulsive use of the drug. Dependence is the first stage of addiction. Addiction is "a condition in which the body must have a drug to avoid physical and psychological withdrawal symptoms" (American Psychological Association [APA], 2010). The commonly abused substances that lead to addiction are marijuana, cocaine, and opioid drugs, including heroin and prescription pain medications.

Opioid drug abuse is of particular concern. Prior to the 1990's, heroin was the main opioid drug that was abused. More recently, however, the abuse of opioid drugs prescribed for severe pain is on the rise. Analgesic opioid abuse admissions to publically funded treatment facilities more than doubled from 1992-2000 (SAMSHA, 2004). In a five-year period ending in 2004, a 62.5% increase in deaths from opioids

was reported in the United States (Manchikanti, 2007). Increased opioid analgesic abuse is of particular concern, not only because of the damaging effects of the drugs, but also because it can serve as a potential gateway to the misuse of other substances (Center for Substance Abuse Treatment [CSAT], 2005).

Substance abuse is problematic as it leads to addiction and causes people to act in unhealthy ways. This unhealthy behavior is contrary to the natural desire for good health that most people possess. The person suffering from addiction will act compulsively and continue to use substances despite negative consequences including damage to their health. Drug addiction is, “A chronic disorder characterized by the compulsive use of a substance resulting in physical, psychological, or social harm to the user and continued use despite that harm” (Rinaldi, Steindler, Wilford, & Goodwin, 1988, p. 556).

Scientists have struggled to understand addiction and the reason someone acts in a manner contrary to the innate need to be healthy and, thus, contributes to poor health. Researchers have identified risk factors that increase the chance of a person abusing drugs and becoming addicted. These risk factors include having a genetic predisposition, employing avoidant styles of coping, being in an environment that positively reinforces drug use, and having social problems, such as unemployment and family discord (Miller and Carroll, 2006). Researchers have also identified neurobiological causes of addiction, such as genetics, changes in the brain’s circuitry of reward and motivation and adaptations of cells in the brain which lead to compulsive use behavior (Angres and Bettinardi-Angres, 2008). Increased understanding of the processes of the brain has led to more treatment strategies, including the use of meditation, and psychosocial and pharmacological approaches (Angres & Bettinardi-Angres, 2008). Despite the research and new treatment strategies, limited success has

been achieved in treatments that are successful and lasting in all patients (Bickel & Potenza, 2006).

Many aspects of addiction remain elusive and effective treatments leading to recovery for those who are addicted are limited. With more therapy options available, treatment success rates have not changed measurably for several decades (Stimmel, 2009). Scientists do not fully understand abuse and dependence and what leads to treatment failure. The synthesis of the knowledge is poor and the concepts are not adequately applied to addiction treatment in this country (Miller & Carroll, 2006). A better understanding of addiction is needed.

Addiction is inadequately understood and that treatment methods have not worked well for many. Some patients have noted that recovery has involved increased spirituality. It is likely that spirituality is important during initiation of drug abuse, treatment and recovery from addiction (MacKinnon, 2004). However, spirituality, and the related concept religiosity, are not well understood among the currently addicted and are in need of further exploration.

One way to increase understanding regarding spirituality in addiction is to study those who are taking opioids in a controlled setting, a methadone maintenance clinic. In this setting, patients receive prescribed methadone as a replacement to the illicit drug to which they have been addicted. These persons are still addicted to substances even though they may be heading towards recovery. Very few studies that assess spirituality in the methadone maintained population have been reported in the literature.

Spirituality can be measured using the concept of spiritual well-being. Spiritual well-being is a well-researched topic that refers to the spiritual health of the inner resources of people (Moberg, 1979). Spiritual well-being is related to psychological well-being (Ellison & Smith, 1991). This is important, as the person with a substance abuse diagnosis often has a concurrent psychiatric diagnosis (Johnson, 2004). Among the

most common of these co-morbid psychiatric diagnoses are depression and anxiety.

The relationship between spiritual well-being, depression, and anxiety in the person with opioid addiction has not been explored.

### **Purpose of the Study**

The purpose of this study was to increase understanding of spirituality, religiosity, depression, and anxiety among persons addicted to opioids. Three aims were studied and specific questions were addressed within each aim.

Aim 1: Increase understanding of spiritual well-being (SWB) and religiosity among persons with opioid addiction when undergoing methadone maintenance therapy (MMT).

1. What is the existential well-being of persons with opioid addiction?
2. What is the religious well-being of persons with opioid addiction?
3. What is the total SWB of persons with opioid addiction?
4. What is the religiosity of persons with opioid addiction?
5. How does the SWB of persons with opioid addiction undergoing MMT compare with normative data from other reference groups?

Aim 2: Increase understanding of the relationships among spiritual well-being, religiosity, depression, anxiety, and the negative consequences of drug use among persons with opioid addiction.

1. What is the relationship among spiritual well-being, religiosity, and depression among persons with opioid addiction?
2. What is the relationship among spiritual well-being, religiosity, and anxiety among persons with opioid addiction?
3. What is the relationship among spiritual well-being, religiosity, and the negative consequences of opioid use among persons with opioid addiction?

4. What is the relationship among the components of spiritual well-being, existential well-being and religious well-being, and religiosity, depression, anxiety, and the negative consequences of opioid use among persons with opioid addiction?

Aim 3: To evaluate the association of spiritual well-being, religiosity, anxiety, and depression, with continued drug use among persons with opioid addiction during methadone maintenance therapy.

1. What is the association of spiritual well-being, religiosity, depression, and anxiety with methadone levels among persons during MMT?
2. What is the association of spiritual well-being, religiosity, depression, and anxiety with negative screening for drugs of abuse among persons during MMT?
3. What is the association of spiritual well-being, religiosity, depression, and anxiety with negative drug use consequences among persons during MMT?

While focusing on these aims, data were collected on race, age, sex, education, employment status, primary drug of choice, number of previous treatments for substance addiction, and length of time in treatment to gain further understanding of the person with opioid addiction.

### **Significance of the Study**

Because addiction is prevalent in society and contributes to other health problems, nurses often encounter addicted patients. Nurses need to be able to recognize and treat those who abuse substances. Recognizing addiction can lead to the prompt identification and treatment of withdrawal symptoms, prevention of complications related to withdrawal, and treatment for the addiction. Recognizing and treating addiction

can minimize complications during hospitalization as well as decrease the risk of chronic disease.

Unfortunately, when encountering a health professional, the person with substance addiction often is not recognized or is treated inadequately for their addiction or consequences of their addiction. Those who are identified as having an addiction are typically not well understood, which contributes to inadequate health care. Many persons with addiction also suffer from anxiety and depression which frequently go untreated. The care of the addicted person will benefit from further understanding of the patient and their mental status.

### **Vulnerability and addiction.**

Understanding the vulnerability of addicted persons is important to understanding addiction and the effect on the person and society. Vulnerability is defined as “capable of being physically or emotionally wounded” (Vulnerability, 2010). Being vulnerable causes one to be susceptible to negative events (Sebastian, 1999) such as poor health, harm, or neglect (Aday, 2001). The degree of vulnerability varies as the person and the environment change. Vulnerability is a dynamic process with risk factors at individual, family and societal levels which cause immediate or eventual susceptibility to negative, physical, psychological, social or developmental outcomes (Feetham and Deatrck, 2002). Aging and the cumulative effects of stress add to vulnerability (Berkman and Kawachi, 2000). Vulnerable populations have an increased risk of developing health problems (Sebastian, 1999; Spiers, 2000).

Vulnerability due to opioid use is on the rise. Recent survey numbers demonstrate increasing opioid use and problems related to use. In part, the increased use was fueled by a movement in the 1990's to improve treatment of pain (Pletcher, 2008). The number of opioid analgesic prescriptions administered by doctors for pain

related visits to emergency departments has risen from 23% to 37% over a 13 year period ending in 2005 (Pletcher, 2008). From 1994 to 2001 the number of charts indicating presence of opioid analgesics in emergency department patients during drug related admissions increased 123%, indicating an increase of health related problems with concurrent opioid use (Zacny, et al., 2003). The increase was beyond expected increases due to the number of overall opioid prescriptions. The increase use of opioids for legitimate reasons may have exposed persons predisposed to substance abuse to a substance to which they were vulnerable.

Persons who are addicted to opioid substances are vulnerable (Aday, 2001). Addiction to substances causes devastation in a person's life. The person continues to use substances despite negative consequences to finances, social life, family life, and health. Substance addiction results in a vulnerable person who is at risk for poor physical, psychological and/or social health (Aday, 1994). Thus, those with opioid addiction are at risk of poor health physically, psychologically, and socially.

Physical health is of concern in the person who has or is at risk for opioid addiction (Becker, Sullivan, Tetrault, Desai, & Fiellin, 2008). One example of a physical health concern is the need for pain control. Physical injury leading to opioid treatment of pain is often cited as a primary reason a person begins using heroin or prescription opioids above the prescribed amount (Brands, Blake, Sproule, Gourlay, & Busto, 2004; Rosenblum, et al., 2007). This excessive use of opioids might be explained by tolerance leading to increased use. In this case the provider treating the pain may think the person is overusing the drug or that it is no longer medically indicated and, thus, limit access. This may cause the person to seek illegal drugs for pain relief. Another explanation of heroin use may be the person was on prescription opioids, continued use after no longer legally available, and then switched to buying heroin, as it is cheaper than prescription medications. Continued use of opioid substances leads to further

physical health issues, such as, malnutrition, decreased immune status, and infections with hepatitis viruses (Ryan & White, 1996; Williamson, Darke, Ross, & Teesson, 2009), Heroin users entering methadone treatment programs have very poor health related to their lifestyle and drug use as compared to the general population (Ryan & White, 1996; Williamson, et al., 2009). Poor physical health is often a reason opioid users are motivated to seek addiction treatment (Donovan & Rosengren, 1999; Williamson, et al. 2009).

Vulnerability due to poor social health is also of concern in the person with substance addiction. Social health is indicated by having adequate supportive social contacts (Aday, 1994). Poor social health may be because of a social stigma where the person is shunned due to having a known addiction. In a national survey of persons recovering from drug or alcohol addiction, 40% note that they have felt shame or social embarrassment because they were recovering from substance abuse (Peter D. Hart Associates, 2001).

Another cause of poor social health is criminal behavior associated with the drive to obtain drugs in the person with addiction. Those in recovery or treatment note that their criminal history and public and private policies have caused difficulty obtaining housing and jobs as well as health care (Leis & Rosenbloom, 2009). Policies related to these difficulties include: addiction not being considered a disability leading to lack of benefits, withholding food stamps from convicted felons, and company policies that include firing those with addiction even when they are seeking treatment or not offering employment to felons. People with addiction may also be viewed as lacking in self-control or as having moral problems (Carlson, 2006). The added stress of poor social health can compound the problems caused by addiction and put the person at risk for continued addiction even while under addiction treatment (Tate, McQuaid, & Brown, 2005).



Not only does the individual suffer from poor social health, but the individual's family also suffers from the negative effects of the addiction. For example, when the parent abuses substances it increases the risk of child abuse and neglect which then often leads to the children themselves becoming addicts (Babb, Danziger, & Moran, 2009). Family court lawyers commonly note substance abuse as an issue in cases of delinquency, dependency and domestic violence (Babb, Danziger, & Moran, 2009). A person with addiction and a history of abuse has more difficulty with recovery leading to a vicious cycle of addicted families. Also youth who become addicted often drain families emotionally and financially. Families who are affected by substance addiction constitute a vulnerable population themselves.

The person with addiction may also have poor psychological health leading to increased vulnerability. An addiction often is accompanied by a concurrent psychological condition. Depression and anxiety symptoms are among the most common psychological symptoms of those who abuse drugs (Avants, Warburton, & Margolin 2000; Center for Substance Abuse Treatment, 2005; Charney Palacios-Boix, Negrete, Dobkin, & Gill, 2005; DiClemente, 2003; Hesse, 2006; Schaub & Schaub, 1997; Verthein, Degkwitz, Haasen, & Krausz, 2005) and may decrease the person's ability to be successfully treated.

In summary, the person abusing drugs is vulnerable to problems of poor physical, social, and psychological health. The drug often becomes the center of life and more health problems develop as drug use increases. The person with drug addiction becomes more and more vulnerable to poor health and decreased well-being as the addiction continues. As the vulnerability of the person increases, so does the risk for negative effects on society.

### **Spirituality and addiction.**

No magical cure-all has been found that restores health and stops addiction in people suffering from substance abuse. Although methadone can prevent the symptoms of withdrawal from opiates, no medication has been found that can stop people from craving the substance to which they are addicted. Alcoholics Anonymous, which focuses on a transcendent higher power or spiritual entity, has had recognized success in treating some, but certainly not all, people with alcohol addiction. Other addictions are also now being treated using the spiritual based methods developed for Alcoholics Anonymous. While the number of addiction studies focusing on spirituality has rapidly grown, more is known about alcohol than other drugs (Miller, & Bogenschultz, 2007). Further understanding of the spirituality of a person with illicit drug addiction is important to the development of future treatment.

Defining spirituality for this study was a difficult task. In an effort to define spirituality, multi-disciplinary discussions were held over the course of a semester in a theology graduate seminar in which spirituality was examined in relation to health. The seminar was led by Dr. Jame Schaefer, associate professor in the Department of Theology at Marquette University. The seminar included conference calls with Drs. Harold G. Koenig and Kenneth I. Pargament, known experts in the field of spirituality research. It was concluded that spirituality was something inherent to human beings. Spirituality was felt to have existed since the very beginning of humanity in the uniquely human experience of the continual search for meaning. The seminar participants developed a definition of spirituality as, “the innate capacity of the human person to transcend herself/himself to experience meaning and purpose in life through contemplation and action aimed ultimately toward the sacred” (J. Schaefer, personal communication, August 31, 2010). This was the definition for spirituality used in this study.

Once spirituality was defined, it was concluded that spirituality, religion and religiosity, while related, were not necessarily the same concepts. The students in Dr. Schaefer's seminar determined that religion was a way to nurture a person's spirituality. Religiosity was defined as the expression of the importance one gives to religious beliefs and practices (Fehring, Miller, & Shaw, 1997). Although some researchers view religion, religiosity, and spirituality as inseparable concepts, in this study they were considered separate concepts as described above.

Miller (1998), in a research review article, notes that spirituality and religion are closely connected to alcohol and drug abuse problems. Miller defines religion as having boundaries of particular beliefs, practices, governance and rituals, whereas spirituality is a nebulous aspect of a person's ideology. He proposes that more research should be done focusing on four separate aspects of addiction and the role of religiosity and spirituality: 1) as protective factors for abuse, 2) as elements in addiction disorders, 3) as variables influencing drug use, and 4) as components in the recovery process.

Spirituality and religiosity variables, as protective factors or predictors of drug use, have been fairly well studied. Strong evidence has been gathered demonstrating that increased spirituality and religiosity lessens the incidence of alcohol and illicit drug use (Hodge, Cardenas, & Montoya, 2001; Marsiglia, Kulis, Nieri, & Parsai, 2005; Miller & Bogenschulz, 2007; Pullen, Modrcin-Talbott, West, & Muenchen, 1999; Walker, AINETTE, Wills, & Mendoza, 2007). Researchers have established that increased spirituality and religiosity are preventive factors of drug abuse, although the reasons are not clear (Miller & Bogenschulz, 2007).

Researchers have also established that spirituality and religiosity are factors in promoting recovery and, thus, influence drug treatment. Spirituality and religiousness may be important in effective drug abuse treatment programs "because they provide recovering individuals with an optimistic life orientation, greater social support, and a

buffering against stress and negative emotionality” (Pardini, Plante, Sherman, & Stump, 2000, p.348). Addicts entering treatment have very low levels of religious involvement (Brizer, 1993). Little is known about changes in religiousness or spirituality that occur during treatment. However, those in recovery with increased spiritual practices have fewer relapses and longer term recoveries (Carter, 1998). The research evidence is showing that spirituality is associated with recovery and prevention of relapse and improved mental health status (Brome, Owens, Allen, & Vevaina, 2000; Miller, 1998; Pardini, et al., 2000).

However, researchers have not adequately studied spirituality in the person who is currently addicted. It is unknown if it affects the course of addiction in the opioid user. It is unknown if spirituality leads to changes in drug use or if addiction leads to changes in spirituality (MacKinnon, 2004). It is not clear if “spiritual development is an antecedent, cause, result or byproduct of decreased substance use and dependence” (Miller & Bogenschutz, 2007, p. 434). More research is needed in the area of those who are currently addicted and those who are decreasing usage. Miller notes “there is limited empirical evidence at present for a predictive relationship of spirituality to recovery” (Miller, 1998, p. 983).

### **Spirituality and addiction nursing.**

Spirituality is part of the foundation of nursing practice as it is part of what it means to be human (Dyson, Cobb, and Forman 1997; Reed 1992) and is inherent to nursing practice, particularly within the holistic paradigm. Spirituality needs to be seen as an important dimension of nursing care of the patient (Koslander & Arvidsson, 2005). Spiritual care is considered an “ethical obligation of professional nursing practice” in holistic nursing (Wright, 1998, p. 82). For nurses to provide holistic care “the spiritual dimension and needs of the person must be carefully assessed and considered in all

therapeutic planning” (O’Brien, 2008, p. 9). Nurses must also understand their own spirituality and worldviews understand how to provide spiritual care to other..

Spiritual nursing care is directed by the patient’s reality (Sawatzky & Pesut, 2005). Nurses need to be skillful in assessing spirituality and understanding the different worldviews of others (Koslander & Arvidsson, 2005). Nurses need to help people identify their personal spiritual perspectives and identity (Wright, 1998). Other facets of spiritual care include identifying spiritual distress and helping patient’s meet their spiritual needs, such as finding purpose and meaning in life (Emblem, 1992; Wright, 1998).

It is important that mental health nurses understand a person’s spirituality and respond to spiritual needs (Nolan & Crawford, 1997). Patients have commented that they want spirituality included in their addiction treatment (Arnold, Avants, Margolin, & Marcotte, 2002). Nurses have noted a need to include spiritual assessment in their practice but have not done so due to reasons such as discomfort discussing spiritual issues, lack of training about spirituality, and being in a science-based practice (Ameling & Povilonis, 2001; Nolan & Crawford, 1997). Also, in American society, as in nursing, it is common to avoid talking about religion and spirituality for fear of offending others, and thus, core issues are left unaddressed including the definition of the word spirituality and what it means to individuals to be spiritual.

Other barriers that affect spiritual care include patient factors that interfere with communication, environmental factors such as lack of time or staff, factors impacted by other professionals such as unavailability of clergy, and personal factors of the nurse, such as lack of self-awareness of beliefs or understanding of the beliefs of others (Ross, 1994). It is important to have self-awareness in order to understand different perspectives of others. Another barrier, especially in times of financial distress, may be limitations imposed by budgets emphasizing finances and allowing people other than nurses or patients to dictate care (Nolan & Crawford, 1997). When others dictate care,

the nurse may be limited in time or resources needed to give adequate spiritual care. A study of mental health nurses noted that nursing was becoming less personal and nurses lack sufficient education on spiritual care and are instead trained on the observable and measurable elements of care (Greasley, 2001). Nurses would benefit from further understanding of spirituality and improving their ability to respond to spiritual needs through such activities as being present with a patient, listening, and discussing beliefs or prayer.

The importance of spirituality in nursing care is recognized in the Neuman Systems Model of nursing. A person is viewed as a complex being, a dynamic system made up of a composite of five interacting variables: physiological, psychological, sociocultural, developmental, and spiritual (Neuman & Fawcett, 2002). Neuman describes the spirit as analogous to a seed with the potential to be nurtured and provide great energy to the person. Strengthening one variable helps to strengthen the system. The spiritual variable is important in this holistic view. A thorough spiritual assessment identifying a person's beliefs and religious activities that support those beliefs drives interventions that can help the patient towards spiritual wellness and health. The spiritual variable is one variable that can be affected by nurses leading to stability and optimal wellness and health in a person (Neuman & Fawcett, 2002).

Understanding the spiritual variable of a person with addiction will help in delivering holistic care to the patient. In order to include spirituality in addiction care nurses need to understand spirituality and how it affects the person and their lives. Yet, evidence is rarely found in the literature on how to educate nurses on spiritual assessment and how to integrate spirituality into treatment of the person currently suffering from addiction. In order to fully understand and care for this vulnerable population, focus needs to be placed on the spirituality of patients. This lack of understanding of the spiritual dimension in health care and nursing has led one author to

proclaim that “the nursing agenda for mental health in the 21<sup>st</sup> century must be essentially spiritual” (Nolan & Crawford, 1997, p. 293).

### **Spirituality, depression and anxiety in the person with addiction.**

Understanding spiritual health and well-being and how it relates to depression and anxiety in the person with addiction is also important. Studies have found that strong religious faith and spirituality are associated with many positive mental and physical health outcomes (Pardini, et al., 2000). For example, spirituality and depression have been found to be inversely related (Ellison & Smith, 1991). This is important in addiction, as low levels of spirituality and high levels of depression and anxiety are common among those who suffer from substance addiction (Cacciola, et al., 2001; Miller and Bogenschutz, 2007; Ries, 2006).

Studies have looked at both depression and anxiety in those undergoing alcohol treatment (Driessen, et al., 2001; Reyno Stewart, Brown, Horvath, & Wiens, 2006), those undergoing opiate treatment (Cacciola, et al., 2001; Verthein, et al., 2005) and those entering general substance abuse treatment programs (Cervantes, Kappos, Duenas, & Arellano, 2003; Charney, et al., 2005). In general, these studies have found that those with anxiety and/or depression are more likely to continue substance abuse or to suffer relapse. Also, as substance use decreases, so do the symptoms of anxiety and depression. However, Charney, Paraherakis, Negrete, & Gill (1998) studied inpatient addiction treatment participants and found that those with depression had longer abstinence from illicit drug use. One reason for this contradictory finding may be that the more severely depressed patients had more intensive therapy in this study. Not one study was located that looked for relationships between spirituality, religiosity, anxiety, and depression all together in the person with substance addiction.

One cross-sectional addiction study measured anxiety when investigating the relationship between religious faith and spirituality and mental health outcomes (Pardini, et al., 2000). Two-hundred thirty-six persons recovering from drug or alcohol addiction were given measures of mental health, including an anxiety scale, as well as a 10-item religious faith questionnaire. Participants also were given two 10-point Likert-type scales to answer a question on whether they considered themselves to be a spiritual and/or a religious person. The participants reported themselves to have a high level of religious faith and spirituality. The study found high religious faith to be associated with increased coping mechanisms, an optimistic life orientation, and decreased levels of anxiety in that study.

As noted, literature is lacking in regard to spirituality in the currently addicted. However, past studies have shown that spirituality is a factor preventing addiction and maintaining abstinence. Spirituality is also related to depression and anxiety. Further research of spirituality, anxiety, and depression in persons with substance addiction is warranted.

In summary, nurses need to increase understanding of persons with addiction. A person with opioid addiction continues to use drugs despite the negative consequences. The addiction increases vulnerability. For nurses to holistically treat the person with opioid addiction, increased understanding of the spiritual variable as well as other key factors needs to be acquired. Further exploration of the relationship between spirituality, religion, anxiety, depression and drug use consequences is warranted.



## CHAPTER II

### Review of the Literature/Theoretical Framework

This chapter begins with a review of literature related to understanding the concepts of spirituality and religiosity. This is followed by an examination of these concepts in relation to health, focusing on addiction. The frequent co-morbid diagnoses of depression and anxiety are then discussed. Next is a brief discussion of the Neuman Systems model, the theoretical framework for this study, as well as the theoretical and philosophical underpinnings for the study. Finally, a summary of the literature is presented.

Literature for this dissertation was gathered to understand relationships among spirituality, religiosity, and addiction. Literature was located through searches using MEDLINE, CINAHL, PsychInfo, and Proquest databases seeking all literature published regarding spirituality and addiction. Google searches were also completed to seek information beyond what was located in the databases. Books related to spirituality and addiction were also identified through library searches at a medical school, university and a public library. Further searches were completed through ancestral searches using reference lists from the articles. Over 600 references have been compiled with the spiritual well-being literature starting with Moberg (1971) and two-thirds of the references being published in the last 10 years.

#### Literature review

Literature pertinent to spirituality, religiosity, depression, and anxiety in persons with opioid addiction is reviewed in this section. This review begins by examining definitions of spirituality and religiosity and the effect on health outcomes. Next, spirituality and religiosity in persons with addiction are reviewed. The focus is narrowed further as the review examines spiritual well-being in addiction treatment and recovery. ,

Finally, since the person with addiction often has concurrent psychological concerns, the review includes an examination of the relationship of spiritual well-being to anxiety and depression.

### **Spirituality and religiosity.**

As long as humans have existed, spirituality has been a part of their lives. In ancient days, the Greeks and Romans spoke of multiple gods who ruled the worlds. In modern times, William James noted the reality of an unseen world in which all of us must believe and of the energy we get from a relationship with this other world (James, 1902/1982). More recently an author described humans as having an innate integral dimension of spirituality (Taylor, 2002). Spirituality is part of human life and is often described as the continual search for meaning in life.

Spirituality is part of nursing practice. Early influence on nursing is noted with the development of Christian deaconesses who ministered to women in the Middle Ages (Lundy, 2009). The concept of spirituality is noted by Florence Nightingale for whom spirituality was considered as “intrinsic to human nature and is our deepest and most potent resource for healing” (Macrae, 1995. p. 8). Spirituality is a factor in maintaining health and well-being and is an important resource for nurses to utilize in patient care.

Several nursing authors have attempted to define spirituality through an analysis of the literature. The results are varied but most nursing literature definitions include “elements of love; compassion; caring; transcendence; relationship with God; and the connection of body, mind, and spirit” (O'Brien, 2008, p. 6). Tanyi (2002) identified spirituality as “a personal search for meaning and purpose in life, which may or may not be related to religion” (p. 506). Buck (2006) characterized spirituality as “that most human of experiences that seeks to transcend self and find meaning and purpose through connection with others, nature, and/or a Supreme Being, which may or may not

involve religious structures or traditions” (p. 290). Meraviglia (1999) defined spirituality “as the experiences and expressions of one’s spirit in a unique and dynamic process reflecting faith in God or a supreme being; connectedness with oneself, others, nature or God; and integration of the dimensions of mind, body, and spirit (p. 29). Goddard (1995) described spirituality as “integrative energy.” The nursing profession has not reached conceptual clarity (Henery, 2003) and consensus can not be found on what spirituality means and what attributes are innate to it (Sawatzky & Pesut, 2005). Agreeing on one clear definition may not be possible as the concept is elastic and subjective (Bash, 2004).

None of the nursing authors cited includes a necessity for religion in their definitions. Religion is a way of nurturing spirituality and is often needed for personal growth and sustenance. To have spirituality outside of religion is to turn inward and to not foster relationships and connectedness important to spiritual growth. Seventy-nine percent of 1,004 Americans sampled described themselves as spiritual and 64% as religious with 55% categorizing themselves as both religious and spiritual (Adler, 2005). In a study of over 29,000 Americans, 88% reported a religious affiliation and 84% agreed either strongly or somewhat that religion was important in their lives (Putnam, Malki, & Malki 2001). The Pew Landscape Survey of over 35,000 adults noted 92% of Americans believe in God (Lugo, 2008). Religion is important to many Americans and spirituality without religion risks stagnation of spiritual growth.

Traditionally, spirituality was a part of religion (Koenig, 2008). Recently, a distinct conceptualization of spirituality as separate from religion has become increasingly apparent in the United States of America. People anecdotally state that they are developing spirituality outside of traditional religions, as these religions are not meeting spiritual needs, such as finding meaning in life (Elkins, Hedstrom, Hughes, Leaf, & Saunders, 1988). An example of this is the agnostic who focuses on self-transcendence

without a higher power as a reference (Koenig, McCullough, & Larson, 2001). “Religion” is now defined by many as formal, community or institutional practices, a set of beliefs and values or doctrine, and rituals (Hodge, 2001; Miller, 1998). Religiousness can include “support of a faith community, affirmation in worship, encouragement of spiritual companions, consolation from prayer, and communication with God through these religious practices” (O’Brien, 2008, p. 90).

Religiousness, religiosity, or religious practices refers to beliefs and behaviors associated with an individual’s religious tradition or denomination (O’Brien, 2008). In other words, religiosity is the extent to which individuals are engaged in religious beliefs and practices (Hodge, 2001; Miller, Westerberg, Harris, & Tonigan, 1996; Pullen, Modrcin-Talbott, West, Muenchen, 1999). Religiosity can be part of a faith tradition and, thus, part of an “organized” religion. Historically, spirituality was seen as part of religion. However, more recently in Western culture, spirituality is seen as larger than religion (Koenig, 2008), meaning that people consider themselves spiritual even when not practicing a religion. An example of this would be the person that feels communing with nature is a type of spirituality. Thus, people sometimes may refer to themselves as spiritual and not religious. Although some people, particularly in the United States, attempt to separate the two concepts, religion and spirituality are related concepts and are not distinct to some people.

Research on the concepts of spirituality and religiosity, the terms were frequently used interchangeably with lack of conceptual clarity (Hill & Pargament, 2003; Miller & Thoresen, 2003). It is only in recent times, since the 1990’s, that studies have differentiated religiosity from spirituality (Hodge, 2001; Miller, 1998; Pullen, et al., 1999). “Spirituality” refers to the individual, subjective, emotionally oriented, inward directed aspects of the former “religious” construct (Hill & Pargament, 2003; Koenig, Miller, & Larson, 2001; Pargament, 1999).

However, the terms have become confused yet again as some define modern “spirituality” to include not only religion but also secular aspects (Koenig, 2008). In this interpretation, atheists and agnostics are included as spiritual. This is a problem for research as it becomes difficult when no comparison group exists and everyone is defined as spiritual. The terms must be clearly defined and operationalized to make sense within any study.

As part of this conceptual confusion, multiple definitions of spirituality, perspective and context laden, are present in the general literature of varied disciplines. Pargament (1999), a psychologist, defines spirituality as a “search for the sacred” (p. 12). Pulchalski (2000), a geriatrician and internal medicine physician, defines spirituality “as that which allows a person to experience transcendent meaning in life”. Sorajjakool (2006), a theologian, defines spirituality as “the quest to make sense of our reality and that quest is part of the structure of our being” (p. 5). One author suggests that, “The concept of spirituality is beyond the limitations of words” (Seaward, 2001, 91). However, not defining spirituality impedes progress towards evaluating the impact it has on lives.

In this study, spirituality is defined as, “the innate capacity of the human person to transcend herself/himself to experience meaning and purpose in life through contemplation and action aimed ultimately toward the sacred” (J. Schaefer, personal communication, August 31, 2010). Spirituality is a potential energy that is present in all people. Spirituality grows through religion.

### **Spirituality in relation to health outcomes.**

Spirituality has been found to be associated with various indicators of health. Relationships have been found between increased spirituality and positive health outcomes in diverse health situations such as cancer, chronic illness, substance abuse prevention and treatment, end-of-life care, depression, life-threatening illness, and

cardiac surgery (Arnold, Avants, Margolin, & Marcotte, 2002; Brome, Owens, Allen, & Vevaina, 2000; Evangelista, Doering, & Dracup, 2003; Hyde, 2004; Koenig, George, Titus, & Meador, 2004; Nelson, Rosenfeld, Breitbart, & Galietta, 2002; Taylor, 2003). The importance of spirituality can be seen in the literature of various disciplines including nursing, medicine, social work, psychology, education, and theology. Those who successfully exercise their spiritual capacity have better health (Koenig, 2004).

Most outcomes or consequences of spirituality are noted to be positive. The most commonly mentioned consequences of spirituality include power and strength, hope, coping, improved health and well-being (Baldacchino & Buhagiar, 2003; Barnum, 1998; Becker, 1994; Dyson, Cobb, & Forman 1997; Fehring, Miller, & Shaw, 1997; Levin, 1994; MacLaren, 2004; Newlin, Knafel, & Melkus, 2002; Post, Puchalski, & Larson, 2000; Ross, 1994). These consequences typically contribute to lead to health and well-being.

Negative consequences of spirituality can also occur. These negative consequences include fear, lack of control, guilt and inner conflict regarding faith (Evangelista, et al., 2003; Tanyi, 2002). In this case the capacity to connect with a higher power can be impeded by negative feelings leading to impairment in health and well-being. Some with addiction say that they are less spiritual due to the guilt they feel while using. However, these feelings can lead to giving over control to a higher power which helps in the search for the transcendent. This is a common theme in recovery for those in Alcoholics Anonymous. Overall, spirituality most often has been noted to have a positive and not a negative impact on health.

### **Spirituality and religiosity in persons with addiction.**

Increased spirituality has been related to improved health and may be an important factor to note in caring for the person with addiction. Alcoholics Anonymous (AA) which relies heavily on spirituality is noted to be a successful program in the

treatment of alcoholics (Carter, 1998; Miller, 1998). Larson and Wilson (1980) related that AA brought hope to many who had no hope before it began. They attributed the success of AA directly to the spiritual dimension.

Both AA and the derivative Narcotics Anonymous (NA) utilize the 12-Step program to assist abusers in recovery. These 12 steps are heavily grounded in spirituality concepts and are often important to recovering abusers for relapse prevention. Substance abusers are often ordered by the courts to participate in 12-step programs due to the effectiveness the programs have shown (Mathew, Georgi, Wilson, & Mathew, 1996). AA involvement and religious/spiritual involvement are modestly and positively related to improved abstinence in studies of alcoholics (Tonigan, 2007). Although spirituality has been found to be successful in AA treatment, little attention has been paid to spirituality and the related concept of religiosity in the context of the person who is currently suffering from addiction. Hence, little is known about how spirituality and religiosity relate to other factors in the person currently abusing substances.

Authors have noted the need to study spirituality as it relates to addiction (Arnold, et al., 2002; Cook, 2004; Culliford, 2002; Hodge, 2001; Larson & Wilson, 1980; Mathew, Mathew, Wilson, & George, 1995; Miller, 1998). Through understanding spirituality and providing spiritual care, providers may meet spiritual needs which may lead to lower substance misuse (Culliford, 2002). Spiritual care can mean being present with a person and listening, helping them connect with spiritual leaders, reading religious materials with a person, or praying with a person. Spirituality can be studied as a factor in different aspects of addiction research including prevention, current addiction, or recovery from addiction.

As seen in the general literature, attempts to study spirituality in addiction have been problematic and have lacked conceptual clarity. A systematic review of the definition of spirituality in the addiction literature was completed by Cook (2004) using

MEDLINE and PsychINFO database searches. Cook identified and reviewed 265 articles over 25 years of publication and noted that addiction literature emphasized different main conceptual components of spirituality from non-addiction literature. The former emphasized relatedness and transcendence, while the later emphasized meaning and purpose. Cook also noted that instruments used to study spirituality were not conceptually congruent with the concept as understood by addiction clinicians. Cook concluded that more study is needed of spirituality in relation to addiction and that it may be beneficial to study the conceptual components of spirituality rather than try to study this multidimensional concept as a whole.

Miller (1998) published a research review on addiction and spirituality in which he noted that spirituality and religion are closely connected. The use of psychoactive substances is prescribed by some religions, such as peyote being used as by some Navajo Indians for physical and spiritual healing (Halpern, Sherwood, Hudson, Yurgelun-Todd, & Pope, 2005). Other religions prohibit psychoactive substances such as in the Mormon tradition. Since religions are not silent on substances, they are intertwined with use and thus addiction and dependence. Miller proposes that more research should be done examining addiction and spirituality and the role of religiosity and spirituality as: 1) protective factors for abuse, 2) elements in addiction disorders, 3) variables influencing drug use, and 4) components in the recovery process. The following paragraphs examine these four categories.

Spirituality and religiosity variables as protective factors or predictors of future use have been fairly well studied. Strong evidence has been gathered demonstrating spirituality and religiosity as protective factors inhibiting the use of alcohol and illicit drugs in diverse groups (Brizer 1993, Hodge, 2001; Marsiglia, Kulis, Nieri, & Parsai, 2005; Pullen, 1999; Walker, Ainette, Wills, & Mendoza, 2007). Higher levels of spirituality have also been correlated with less use of nicotine and alcohol (Kendler, Gardner, &



Prescott, 1997). Researchers have established that increased spirituality and religiosity are preventive factors of drug abuse.

Researchers have also established that spirituality and religiosity are factors that influence drug treatment. "Spirituality and religious importance may be effective in the treatment of substance abuse disorders, because they provide recovering individuals with an optimistic life orientation, greater social support, and a buffering against stress and negative emotionality." (Pardini, Plante, Sherman, & Stump, 2000, p. 348). Addicts in recovery with increased spiritual practices have fewer relapses and longer term recoveries (Carter, 1998). Other research studies provide evidence that spirituality is associated with recovery and prevention of relapse and a better mental health status (Brome, 2000; Miller, 1998; Pardini, et al., 2000).

Spirituality related to recovering from addiction has been explored most commonly within the context of AA. AA is recognized as being a successful program in the treatment of alcoholics (Carter, 1998; Miller, 1998). The twelve steps of the program include spiritual principles such as dependence on God or a Higher Power, prayer and meditation. Addicts in recovery with increased spiritual practices have fewer relapses and longer term recoveries (Carter, 1998).

While most studies of spirituality and addiction have examined preventative measures and those in recovery, few studies have examined spirituality in the person who is currently addicted. The studies also have been limited by unclear conceptualization and methodology. Thus, it is not known if spirituality and religiosity are elements in addiction disorders or variables influencing drug use and are affected by or affect the person in the throes of addiction. Although, researchers have noted that alcohol and drug problems are associated with a current lack of religious affiliation (Gorsuch, 1995), most studies have not clearly defined spirituality. Miller notes "there is

limited empirical evidence at present for a predictive relationship of spirituality to recovery” (Miller, 1998, p. 983).

### **Studies of spirituality during addiction when in recovery.**

Some studies of persons recovering from substance addiction retrospectively investigated spirituality at the time of addiction. One qualitative study sought to describe the role of spirituality in recovering addicts (Green, Fullilove, & Fullilove, 1998). The researchers observed 24 participants in peer group support meetings. Also, focus groups were held seeking to examine how a relationship with a Higher Power made a difference. Field notes were taken. The authors concluded that a spiritual awakening occurred during recovery. People started attending group meetings with an innate faith and as they contemplated their addiction they received energy from spiritual beliefs as the will of the person was given over to a Higher Power. As they grew in faith, they transcended and the Higher Power became a daily presence in their lives giving them meaning and purpose. Prayer and meditation became important in the daily lives of the participants. The researchers concluded that abusers must develop new coping skills in life in order to be successful at recovery from addiction. They note one effective way to do this was to attend AA or NA meetings and follow the 12-step process which assists with spiritual awakening. The study sample was likely influenced by the presence of an active 12-step AA program at the treatment site. Also, the authors had the experience in practice that a Higher Power made a difference in recovering addict’s lives. This assumption directed their study question and may have biased the study analysis to find this positive difference.

In a phenomenological investigation of spirituality in addiction recovery, participants were self-selected to determine how spirituality affects recovery (Moten-Solomon, 2001). In the study, nine former drug users were administered a spiritual well-

being scale in order to choose those with high “spiritual perception.” The six highest scoring individuals were then interviewed. Interviews uncovered that spirituality emerged gradually and led to progressive change and personal development during addiction. Participants incorporated spirituality into recovery and, thus, established purpose and meaning in life, and developed a sense of self and social-responsibility. Participants also indicated that they had a reluctance to incorporate spirituality into their lives during active addiction and early recovery, as they did not want ritualistic religion. As they distinguished between religiosity and spirituality they developed a personal spirituality. The results of this study may be influenced by the researcher due to the phenomenological method.

One ethnographic study did not look at spirituality, but rather the lives of people with severe mental illness that were also substance abusers (Alverson, Alverson, & Drake, 2000). The authors purposively selected 16 participants from a larger clinical trial of individuals diagnosed with substance abuse and a mental illness and studied the sub-population over a two-year period. The researchers concluded that factors preceded and predicted sobriety among their population. These factors included having regular and enjoyable activities in which to engage, having stable housing, and developing close relationships. It appears meaning and purpose in life, aspects of spirituality, were found to be important in this study. Participants felt these aspects of spirituality made a difference in their lives when addicted to substances.

In summary, retrospective studies of persons who were addicted have begun to explore religious and spiritual factors. The research findings support that spirituality is important in addiction recovery and warrants further consideration and investigation. However, the few studies that were completed were qualitative, had small sample sizes, and, thus, were limited in generalizability. More studies with clear conceptualizations are needed to further knowledge on this topic.

### **Studies of spirituality and religiosity in persons with current addiction.**

The few published studies of spirituality and religiosity in persons with current addiction are descriptive in nature and are reviewed in this section.

One study questioned 217 adolescents, 77 recruited from a mental health agency and 140 recruited from a Protestant church who were assumed to not be receiving mental health care (Pullen, et al., 1999). Another group of 65 from the Protestant church who chose not to participate is not described. The researchers assessed alcohol and drug use and compared it to religious service attendance. Daily and weekly attendance were classified as high religiosity and monthly or less were categorized as low religiosity. The researchers asked the participants if they used alcohol or drugs. A chi-square analysis showed that the high religiosity participants reported far less alcohol and drug use. Limitations to this study are the self-report method, the lack of clarity on drug use and the self-selection of the students in the Protestant church group.

Another descriptive study of 1,902 adult women examined their religiosity and their current and lifetime use of alcohol and nicotine (Kendler Gardner, & Prescott, 1997). The participants were questioned on their religious preferences. Participants also answered 10 religious items (e.g. importance of religious beliefs and belief in God). Analysis of the 10 items found a two factor structure of personal conservatism and personal devotion with twins highly correlating with each other on both factors. The study concluded that religiosity was inversely related to alcohol and drug use. Personal devotion was found to be the strongest and most negatively correlated with a lifetime history of alcoholism. Religious affiliation is often asked as the sole measure of religiosity in research. It is interesting that the religious affiliation acted in congruence with the other measures of religiosity used in this study.

A later study again examined religiosity and drug dependence in 2,616 adults (Kendler, et al., 2003). The researchers chose 78 items to examine the multidimensional aspects of religiosity. A seven factor solution was found which included factors of general religiosity, social religiosity, involved God, forgiveness, God as judge, unvengefulness, and thankfulness. All factors of religiosity, except for unvengefulness, were found to be inversely associated with drug abuse or dependence.

Larson and Wilson (1980) examined religiosity by comparing 81 men with alcoholism admitted to a psychiatric unit to 107 non-alcoholic control volunteers with no history of psychological disease in the Southern United States. The alcoholics were interviewed after detoxification and physical stabilization. A religious history was recorded as well as current religious preference and church attendance. The author's concluded that this group had a less stable childhood with many coming from broken homes and low socioeconomic status. Formal religion was conservative for many with home life being less conservative, causing confusion in the beliefs of alcoholics. They also noted that many alcoholics professed to read the Bible and pray, but they infrequently shared their faith. Sharing of faith would have been a common expectation of the Southern Baptist environment among which the participants were raised. Control volunteers came from more stable home settings, had more frequent salvation experiences, and had more consistency in their beliefs between religion and home practices.

Religiosity and drug abuse among psychiatric inpatients was examined in a cross-sectional quantitative study (Brizer, 1993). The sample included 63 patients admitted to a chemical dependency unit and 105 admitted to a general psychiatric unit. A religious involvement questionnaire was used along with questions about faith and a drug use quantification questionnaire. The study found several religiosity items negatively correlated with alcohol and drug use. The study concluded that affiliation with

a highly structured belief system correlated with abstinence from substance use. Of note, 46% of the sample professed belonging to the Mormon faith, 45 % Protestant and 8% Catholic. The author did not report differences in how the faith groups responded, which is interesting when considering that the Mormon faith strictly prohibits alcohol and illicit drugs.

A prospective longitudinal study hypothesized that spiritual beliefs and attendance at Narcotics Anonymous (NA) meetings would be related to improved six-month outcomes of patients under treatment for drug abuse (Christo & Franey, 1995). One-hundred and one patients entering drug abuse treatment for poly-drug use were administered a newly developed Spiritual Beliefs Questionnaire (SBQ) at baseline and again at six-months. Self-reported drug use and NA attendance data were also collected. The study found that NA attendance related to less drug use at follow-up. However, high SBQ scores could not predict less drug use. This contradiction to other studies could be accounted for by the unvalidated tool that was used in the study. Of the 12 items on the pilot tool, five correlated poorly (less than 0.5 to the total score) and were discarded with the remaining seven items adequately correlating (0.45-0.75). Further research on the tool was needed.

In summary, studies of spirituality and religiosity of persons with current addiction are few. However, a correlation seems to exist between increased spirituality and religiosity and decreased alcohol and drug use. Twelve-step groups with their contemplative practices and transcendent experiences are successful in reducing use. Further study of spirituality and religiosity in the currently addicted is needed.

#### **Studies including spiritual well-being in treatment and recovery.**

Spirituality, as noted earlier in this chapter, is a difficult concept to define and, therefore, it is difficult to measure. Instead, researchers have looked at dimensions of

spirituality, such as spiritual well-being. Spiritual well-being (SWB) is a measure of the spiritual quality of life. SWB is similar to spiritual health, but includes more. It goes beyond religion and includes that which gives meaning to life and influences the person's behavior (Moberg 1971; Moberg, 1979; Moberg 1984). A well studied tool for assessing the spiritual quality of life is the Spiritual Well-Being Scale (Ellison, 1983; Ellison & Smith, 1991). The Spiritual Well-Being Scale (SWBS) has two ten-item subscales: Existential Well-Being (EWB), which looks at one's meaning and purpose in life, and Religious Well-Being (RWB) which looks at one's relationship with God. The RWB asks questions such as whether God cares about the person and if their relationship with God helps them not to feel lonely. The EWB asks questions such as feeling good about the future and having a purpose and sense of direction. The following addiction studies included the SWBS.

Brome, et al. (2000) defined spirituality as a perception of well-being coming from a relationship with God that provides purpose and satisfaction with life. A median split on the SWBS was used to divide 146 African-American mothers who had been in substance recovery for an average of two years into two groups. The relationship of spirituality to positive mental health outcomes was studied. The author concluded that higher spirituality, as measured by the SWBS, was related to a more positive mental health state including better self-concept and better family climate. When interpreting these results, one must keep in mind that the SWBS was not divided into the subscales and, thus, likely measured psychological well-being within SWB. Therefore the study may be correlating positive mental health with positive mental health.

Another investigation of 49 adult males undergoing outpatient treatment for cocaine abuse or dependence examined spirituality and treatment outcomes (Lee, 1998). The SWBS was administered at intake and 90-days later. Outcome measures used were length of time in treatment and abstinence. No correlation was found

between the SWBS and length of time in treatment or abstinence. This also held true for both the subscales. This lack of correlation may be due in-part to the small sample size, with only 24 participants completing the 90-day study period. The study also examined attributional style looking at response to negative events. An optimistic style was defined as bad events being externally caused, unstable and short term. The study concluded that those with an optimistic style along with high spiritual well-being did have longer abstinence. Participants named spiritual aspects as helping to sustain abstinence.

A cross-sectional study investigated the relation of spirituality and spiritual well-being to alcohol dependence (States, 2001). Eighty-one alcoholics were parsed according to level of recovery (no abstinence, abstinence with recent relapse, three-months of sobriety and six-months or more of sobriety). The SWBS was used as a measure of spirituality. The SWBS showed a trend towards significance across the groups. The subscale of Religious Well-Being differed among the groups, whereas Existential Well-Being did not differ. Increasing length of treatment was found to correlate with increasing RWB scores. The study concluded that prior to treatment participants had significantly lower levels of spirituality. Once a person was in treatment, the levels did not change significantly.

Spirituality in persons with alcohol dependence was studied to determine if spirituality was associated with abstinence self-efficacy (Piderman, 2005). Forty-nine people in a three-week alcoholic treatment program were given three questionnaires on spirituality, including the SWBS, upon admission and discharge from treatment. The questionnaires measured religious practices, religious coping and spiritual well-being. All three variables correlated with each other and showed a positive increase after treatment as compared to before treatment. These measures also correlated with an increase in abstinence self-efficacy. Interestingly, the SWBS and the subscale of EWB showed significant improvement over time, whereas the RWB subscale did not improve.



The generalizability of this research is limited by the specificity of the population. Of note, despite the fact that 96% of the sample indicated coming from families with church affiliations, 1/3 had no affiliation at the time of the study. Findings of this study beg the question as to whether loss of church affiliation is related to alcoholism.

Another study investigated spirituality and religious factors in 80 adults within one week of entering outpatient alcohol treatment centers (Saunders, Lucas, & Kuras, 2007). The authors utilized a newly developed tool measuring religious and existential well-being, connectedness to God and Others, and spiritual and religious behaviors. The tool was compiled from the SWBS (Ellison, 1983) and from the work of the Fetzer Institute which developed a multidimensional measure of spirituality and religiousness (Fetzer Institute, 2003). The authors concluded that problems with the use of alcohol were related to concerns with spiritual and religious functioning. The article supports spirituality as a factor affected by alcohol use. However, in this article, the tool is only partially described, and, while the authors found their new tool to be internally consistent and to have adequate test-retest reliability, reliability and validity of the tool need further examination.

One other related study focused on scores of SWB of substance abuse counselors as compared to patients in treatment (Brooks & Matthews, 2000). The sample included 94 patients in inpatient treatment at three facilities as compared to 11 counselors. The authors do not clearly present the data or the time lapse between pre-test and post-test. No correlation was found between counselors' SWB scores as compared to patients. However, the authors note that SWB scores improved with inpatient treatment.

The addiction research utilizing the SWBS was found to be sparse and in need of further exploration. Results of the SWBS appeared to improve with time in treatment,

but the subscales had equivocal results in the studies reviewed. The SWBS does correlate with optimistic outlooks and positive mental health.

### **Spirituality during methadone maintenance therapy.**

Methadone Maintenance Therapy (MMT) is a therapy that historically has been accessed by only a small fraction of those who could benefit from it (Broekhuysen, 2000). Methadone is a long acting opioid that replaces the short acting opioid to which the person is addicted. This prevents physical withdrawal symptoms and reduces craving and, in effective doses, will prevent the “high” associated with use of illicit drugs (Kampman, 2010). Methadone maintenance has been described as a precursor or a first stage of treatment (National Institute on Drug Abuse, 1999; Stimmel, 2009). Recommended length of therapy for effectiveness is a minimum of one year. Those in MMT for less than three months do not decrease use, but those who stay in treatment for more than several months to one year show decreases in the use of illicit opioids up to 80% (Leavitt, 2004)

Few studies have directly examined spirituality in addicts undergoing methadone therapy. One descriptive study examined 43 HIV positive injection drug users in methadone treatment (Avants, Warburton, & Margolin, 2001). The study included one question regarding the degree to which religion or spirituality personally provided participants with a source of comfort or support. The question was asked at intake into MMT and repeated six months later. A five-point Likert-type scale with anchors of “not at all” (0) and “extremely” (4) was used. The mean scores did not change significantly between time 1 (2.23) and time 2 (2.58). Ninety-one percent of participants classified as “high spiritual support” (rated at 3 or 4) at intake remained high whereas 43% of the participants classified as “low spiritual support” (rated at 2 or less) classified as “high spiritual support” (3 or more) at time 2. Using multiple regression the authors deduced

that spiritual comfort and support at entry was a strong independent predictor of abstinence from illicit drug use.

A second descriptive study by the same group assessed 47 methadone maintained individuals in an inner city clinic (Arnold, et al., 2002). Participants completed a religious affiliation and practice form, and a Perceived Helpfulness of Spirituality (PHS) questionnaire. The PHS contained five items measuring the value of including spirituality or religion in addiction treatment. The items were assessed on a Likert-type scale from 0 (not at all) to 4 (extremely). Although it is not clear how the tool was developed, the PHS questionnaire was reported to have an inter-item reliability of 0.91. No mention of validity was made. Higher scores on the PHS indicated more perceived helpfulness with spiritual or religious faith being included in treatment. Median scores for four of the items were 3.0 (a lot) and the last item regarding hopefulness had a median score of 4.0 (extremely). Thus, the scores indicated that it would be helpful to integrate spiritual and religious faith into addiction treatment. Twenty-one participants in this study also participated in focus groups. Participants were asked several questions about spirituality. Participant quotes were grouped and common threads assessed. The most common themes that emerged indicated that spirituality was a protector or helper to self as well as others. The authors concluded that spirituality, as defined by the individual, was important and that spirituality would be helpful in addiction treatment.

Overall, this is an interesting study of addicts currently undergoing Methadone therapy. Although 53% of the total sample was known to be HIV positive, answers were similar on the PHS whether participants were HIV positive or not. However, the PHS may be a limited tool which is not sensitive enough to find differences among groups as only a five point Likert scale was used and only five questions were asked. Another limitation is that the answers may have been skewed by the non-random selection of participants in the focus groups as well as by the likelihood that they would have further

contact with the researchers. Peer pressure certainly could be a factor in not reporting negative social behavior in a group. The convenience sample for the PHS limits generalizability.

A large scale study investigated persons undergoing outpatient methadone maintenance at 18 programs located in the United States (Flynn, Joe, Broome, Simpson, & Brown, 2003). The Drug Abuse Treatment Outcome Studies (DATOS) included intake interviews and a five-year follow-up interview with 432 persons in methadone treatment. A five-point scale was used for participants to report if religion/spirituality affected their recovery. Forty-seven percent of the individuals who were successful in recovering cited religion/spirituality as significant to their behavior change. The construct of religion/spirituality was found to differentiate recovering from non-recovering former patients as evidenced by abstinence from opioids, daily alcohol use, and criminality problems.

In summary, very few studies of spirituality and religiosity during MMT have been completed despite the perceived importance to patients. Patients wanted spirituality to be part of their addiction treatment. In addition, spirituality was related to improved outcomes from MMT. The research indicates that spirituality is important in addiction treatment and in methadone maintenance therapy outcomes.

#### **Studies including spirituality and comorbid depression and anxiety.**

When viewing the person with addiction holistically, it is important to look beyond spiritual factors. Those who suffer from substance addiction frequently also suffer from depression and anxiety (Cacciola, Alterman, Rutherford, McKay, & Mulvaney, 2001; Ries, 2006). Studies have found that increased religious faith and spirituality are associated with many positive mental and physical health outcomes (Pardini, et al.,

2000) and, hence, are important in MMT outcomes. For example, spirituality and depression have been found to be inversely related (Ellison & Smith, 1991).

A cross-sectional study investigated the relationship of religious faith and spirituality to mental health outcomes (Pardini, et al., 2000). Two-hundred thirty-six persons recovering from drug or alcohol addiction were given a religious faith questionnaire as well as measures of mental health. They also were given two, 10-point Likert-type scales to answer a question on whether they considered themselves to be a spiritual and/or a religious person. The participants reported themselves to have a high level of religious faith and spirituality. The study also found high religious faith to be associated with increased coping mechanisms, an optimistic life orientation, and decreased levels of anxiety.

Some studies have examined anxiety and/or depression in those in alcohol treatment (Driessen, et al., 2001; Reyno, Stewart, Brown, Horvath, & Wiens, 2006), those undergoing opiate treatment (Cacciola, et al., 2001; Verthein, Degkwitz, Haasen, & Krausz, 2005) or those entering general substance abuse treatment programs (Cervantes, Kappos, Duenas, & Arellano, 2003; Charney, Palacios-Boix, Negrete, Dobkin, & Gill, 2005). In general, these studies have found that persons with anxiety and/or depression are more likely to continue substance abuse or to suffer relapse and, as substance use goes down, so do the symptoms of anxiety and depression. However, Charney, Paraherakis, Negrete, & Gill (1998) studied inpatient addiction treatment participants and found that those with depression had longer abstinence. One reason for this may be that the more depressed patients had more intensive therapy in this study.

No addiction studies were located that investigated spirituality, anxiety, and depression together in the person with substance addiction. However, one study examined these factors in a cancer population. McCoubrie and Davies (2006) studied

85 day hospice patients with terminal cancer in the United Kingdom. They used the hospital anxiety and depression scale (HADS), which is specific to cancer patients, and contains seven questions for each of the two subscales, anxiety and depression. The SWBS measured spiritual well-being and the Royal Free Interview (RFI) was used to measure strength of spiritual beliefs. All three tools were reported to have adequate psychometric properties. The study found a negative correlation between spiritual well-being and both anxiety and depression. Interestingly, the existential subscale of the SWBS had a strong negative correlation with anxiety and depression whereas the religious well-being subscale had no correlation. The RFI was noted to be a laborious tool and not useful in the study.

Another study examined depression, anxiety, religiosity, and spirituality in a post-partum sample (Mann, McKeown, Bacon, Vesselinov, & Bush, 2008). In this study multiple regressions were used prospectively to predict post-partum depression. Participation in organized religious activities at least a few times a month was found to be a strong protective factor. Anxiety was found to relate independently, but not when included in a regression model with other variables of depression, history of mental illness and social support. Depression scores antepartum were predictive of postpartum depression in this model. Since anxiety and depression often correlate, this may have confounded the findings.

As noted, studies are lacking that involve investigating spirituality in the currently addicted. However, there is some evidence that spirituality can be a helpful factor among many individuals who are addicted to substances. Also, depression and anxiety have been correlated with spirituality. Further research of spirituality, anxiety, and depression among persons with substance addiction is warranted.

#### **Summary of literature, literature gaps and importance of the study.**

What is clear from reviewing the literature is that the studies scrutinizing spirituality in those currently suffering from addiction are few. Most addiction studies have focused on prevention and treatment, rather than on the current user or the person undergoing MMT. The few measurement tools that have been utilized have been varied and most are not well validated. One exception is the SWBS. Methods for understanding spirituality and spiritual well-being in those currently suffering from addiction are missing. A large knowledge gap exists in the professional literature describing current addiction and spirituality. In order to fill this gap we need to better understand the constructs of spirituality and religiosity, develop standardized measurement tools, and understand how the concepts relate to drug addiction.

The literature supported the importance of understanding the role of spirituality and religiosity in those currently suffering from addiction. Through understanding spirituality and providing spiritual care, providers may meet spiritual needs which may lead to lower substance misuse (Culliford, 2002). The synthesis of the knowledge including spiritual aspects is poor and spiritual concepts are not adequately applied to addiction treatment in the United States of America (Miller & Carroll, 2006). The literature has not clearly addressed the relationship between spirituality, religiosity, depression and anxiety in the person with substance addiction.

### **Theoretical framework – Neuman Systems Model**

The Neuman Systems Model is the conceptual framework for this study. Neumann's model views the person, or groups of people, as a dynamic system, a composite of five interacting variables: physiological, psychological, sociocultural, developmental, and spiritual (Neuman & Fawcett, 2002). The person, or client system, is the core and it constantly interacts and exchanges energy with the environment. The environment consists of three parts, the internal environment which includes all

intrapersonal factors, the external environment which includes all external factors, and the created environment which includes factors developed unconsciously to maintain balance. The created environment changes to maintain health in response to stressors. For example, denial may be used to cope with a psychological stressor such as sudden loss. The person seeks to achieve, maintain, or retain internal system stability, or wellness, while interacting with the environment (Neuman & Fawcett, 2002).

To maintain system stability, or wellness, the person has two types of surrounding “lines of defense.” These lines of defense are the “normal” and the “flexible lines of defense” (Figure 1). The normal line of defense represents the evolved steady state or the usual wellness level of the individual. When the normal line of defense has been breached, the person becomes unstable or ill. However, stressors can also cause positive change and the lines of defense may expand and the system grows. The flexible lines of defense act as a flexible buffer system, protecting the normal line of defense, and, thus keeping the person well or stable. Examples of items helping to buffer would be sleep and belief systems (Neuman, & Fawcett, 2002). If inadequate sleep or a challenge to one’s beliefs occurs, the buffer would be lessened and the flexible line would move inward towards the normal line of defense.

Inside the lines of defense are the lines of resistance. These lines symbolize the resources, both internal and external, that the person has for support. The lines of defense and resistance are a composite of the five interacting variables of the person and, thus, a change in one variable has the potential to impact all other variables. When a person encounters a stressor, he/she can have positive or negative outcomes. A positive outcome is seen if the person recovers from the stress and re-establishes lines of defense, and thus, health. A negative outcome occurs when the lines of resistance fail and cause negative events including death. The spiritual variable of the person is conceptualized as an innate factor that is present at birth in all people and realizes its



potential power through relationship with God. All persons are capable of growing in spirituality. As the spirit grows, the person develops a very powerful force that has inexhaustible energy. It is a strong force interacting with the other variables affecting the energy level and, thus, the lines of defense and the health of the person.

**Figure 1. Conceptualization of the Neuman Systems Model**

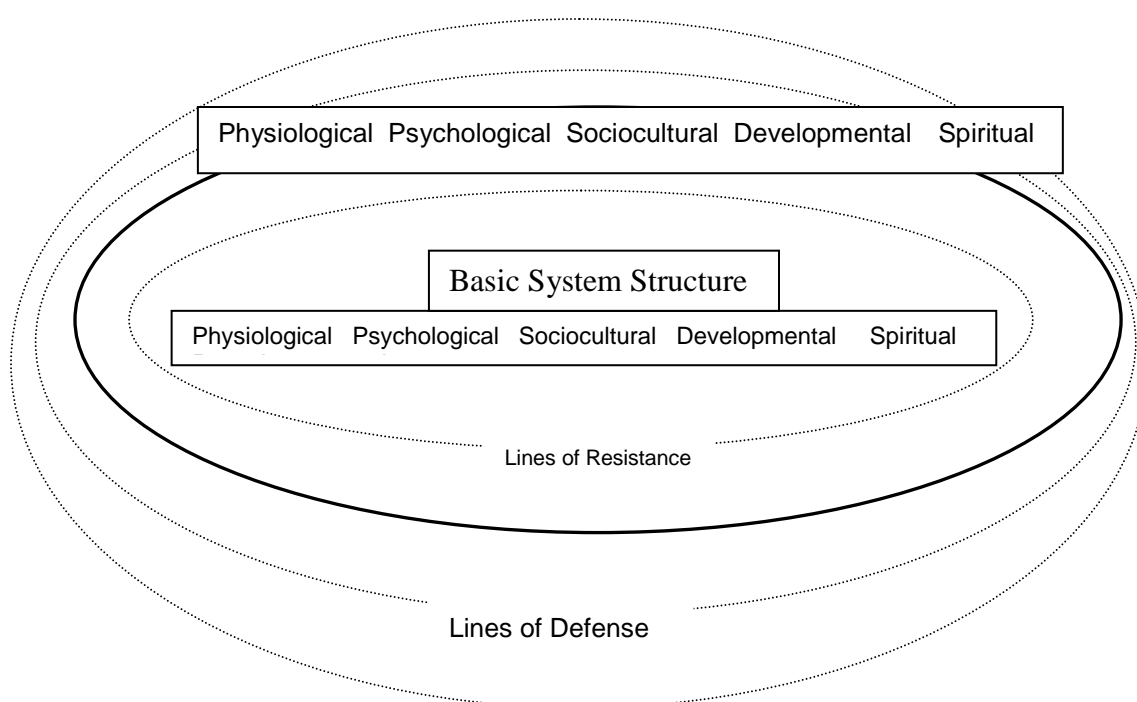


Figure 1. Parts of the Neuman Systems Model are seen in this conceptual drawing of the Basic System Structure surrounded by the lines of defense. The normal line of defense is represented by a solid line. The five interacting variables are shown as both part of the basic structure of the person as well as variables in the lines of defense.

### **Relationship of the theoretical framework to the study.**

In Neuman's model the person is in constant interaction with environmental factors to "mitigate possible harm from internal and external stressors" (Neuman & Fawcett, 2002, p. 12). Stressors can cause weakening of the lines of defense and resistance of a person, thus weakening their energy. A person addicted to drugs has stressors that include not only the drug, but also the consequences of addiction, such as poor social, physical, psychological, and spiritual health. For example, the person with addiction often lists consequences of loss of relationships, jobs, money, and housing. The person with addiction needs to re-establish lines of defense to establish health before substantial deterioration or death occurs. As the spiritual factor improves, it will help to reinforce the physiological, psychological, sociocultural, and developmental factors.

In Neuman's model, the interest lies in what helps to maintain the lines of resistance. The spiritual factor is one of the five factors sustaining resistance and maintaining health. The spiritual variable of the person is part of the lines of defense and resistance. Each person has an innate "spiritual energy" that is activated through relationship with God (Neuman & Fawcett, 2002). In Neuman's model "the spirit controls the mind and the mind controls the body" (Neuman & Fawcett, 2002, p. 16). As the spiritual variable of the person strengthens, it positively affects the lines of defense and resistance, giving them increased strength in all areas.

Neuman's model was chosen for this study as it is a holistic model and looks at multiple variables at the same time. One of the accepted models of addiction is the biopsychosocial model. This model is congruent with Neuman's model including biological, psychological, and social causes of addiction. The other categories that are included in Neuman's model are developmental and spiritual. Developmental issues

such as parenting and developing independence are often altered by drug addiction. Spiritual factors are often undertreated in addiction. Neuman's model looks at the patient holistically and accounts for these additional variables. Also, methadone therapy is used to stabilize a person's life and then withdraw from the drug. This can be thought of as strengthening the lines of resistance before attempting to remove the drug.

The spiritual variable in the model refers to spiritual beliefs and influences (Neuman & Fawcett, 2002). Each person has an innate spiritual energy that can be developed, but needs nurturing to develop into a healthy spirituality. The spiritual health of the person can be studied by examining the person's spiritual well-being. One way to increase spiritual well-being may be through religiousness. Each person has an innate spiritual energy force at birth that is activated by life events (Neuman & Fawcett, 2002). This spiritual force has the potential to deliver tremendous positive influence to the person when developed and nurtured. Interacting with the environment, such as practicing within an organized religion or attending AA groups, could be one way of developing and directing spiritual energy towards spiritual well-being. By increasing spiritual well-being, the spiritual line of defense has the potential to strengthen the entire system. For example, increased spiritual well-being potentially leads to improved psychological wellness, such as less depression and anxiety. When psychologically strengthened, the person's physical health and developmental health are improved, as evidenced by feeling physically better and having improved relationships.

By understanding and supporting spiritual well-being of persons with addiction, nurses may assist in improving the health of the patient. Health care providers may be able to assist in strengthening the defense and resistance of a person with addiction and this may lead to prevention of negative consequences. This study will examine the spiritual well-being, religiosity, anxiety, depression, and negative consequences among persons in MMT.

## **Conceptual and Philosophical Underpinnings**

This section presents conceptual and philosophical underpinnings of the study. First reviewed is the holistic approach to nursing and the client. Next reviewed are concepts of addiction and Methadone Maintenance Therapy. The section concludes with the definition of spiritual well-being.

### ***Nursing is holistic.***

The philosophy of the nursing profession is holistic. Spirituality is inherent not only to the nurse, but also to nursing practice within a holistic paradigm. Spirituality is part of the ontologic foundation of nursing practice (Dyson, Cobb, & Forman, 1997; Reed, 1992). As such, it is within the domain of nursing to assess spirituality and provide interventions. The mind, body, and spirit are intimately connected and each requires individual attention in order to provide holistic care (O'Brien, 2008).

### ***Person as a system.***

The person is a dynamic system of five interacting variables: physiological, psychological, sociocultural, developmental, and spiritual (Neuman & Fawcett, 2002). Each variable supports and interacts with the lines of defense and resistance. Each part of the system has the potential to be affected by addiction.

### ***Addiction.***

Addictions are defined as “learned habits that once established become difficult to extinguish even in the face of dramatic, and, at times, numerous negative consequences” (DiClemente, 2003, p. 4). This broad view of addiction includes many types of habits such as computer, sexual, gambling, and substances or chemicals. A subset of this broad definition is chemical dependency or substance abuse which is defined as,

*a chronic use (often daily), that results in a physiological and/or psychological 'need' (real or felt) for the drug as a matter of survival, causing severe, and/or chronic negative life consequences. The chemically dependent person's life is fully encompassed by the obsession to use the drug and live the accompanying lifestyle (Johnson, 2004, p.10).*

Drug addiction has also been defined as, "A chronic disorder characterized by the compulsive use of a substance resulting in physical, psychological, or social harm to the user and continued use despite that harm" (Rinaldi, Steindler, Wilford, & Goodwin, 1988, p. 556). Thus, substance addiction is a dependency on a drug that controls the life of the addicted person. This addiction results in a vulnerable person who is at risk for or has poor physical, social, or psychological health (Aday, 1994). The person with drug addiction becomes more and more vulnerable to poor health as the addiction continues. The person suffers negative consequences related to substance use and continues to use despite these negative consequences.

People may be vulnerable to addiction for various reasons which are not fully understood. Researchers have suggested biological reasons such as genetic predisposition, and social reasons such as a parent with addiction. Physical pain can also put a person at risk due to exposure to opioid analgesics for pain control. For example, chronic low back pain treated with opioid analgesics may actually increase sensitivity to pain due to cellular changes in the brain (Deyo, 2009). Chronic pain coupled with addiction may intensify the vulnerability of the person to additional negative consequences.

### ***Opioid Addiction***

Opioids are a class of drugs commonly used to treat severe pain in various situations, such as severe trauma or after surgery. Opioids were prescribed in the

emergency department for 37% of pain related visits in 2005 with the severity of pain correlating to the likelihood of receiving an opioid (Pletcher, 2008). Included in the opioid class are prescription pain medications, such as morphine and oxycodone, and the illicit drug heroin. These drugs not only treat pain, but also produce a euphoria or sense of well-being in the person taking them. If these drugs are used for a long enough time, they can cause physical dependence. Euphoric sensations from taking an opiate, along with the development of physical dependence, cause a desire for repeated use and may lead to drug abuse and addiction.

Opioid addiction is more than an individual problem. Substance abuse is associated with diminished quality of life, increased morbidity and mortality, decreased productivity, increased societal costs, and increased activity in the criminal justice system (Becker, Sullivan, Tetrault, Desai, & Fiellin, 2008; Office of National Drug Control Policy, 2004). Substance abuse is costly economically, physically, and emotionally.

***Methadone maintenance therapy.***

Some people who are addicted to opioid drugs undergo pharmacological treatment with methadone. Methadone is a long-acting opiate used as a replacement for the drug to which the person was addicted. Once persons are on an effective dose of methadone, they no longer experience euphoria or withdrawal effects from the drug to which they were addicted (Miller & Carroll, 2006). Initial treatment in a methadone maintenance program includes medical evaluation, periodic counseling, urine testing for drug use, and oral doses of the drug taken with supervision. Initially, the person in methadone maintenance therapy (MMT) attends a treatment facility daily for drug administration. If the person is able to remain under treatment and is benefiting from the treatment, eventually they will be able to attend less frequently and take some of the medication at home. People enter treatment for various reasons, including self-

motivation, persuasion by family members, or are ordered by the court to participate (Zeldman, Ryan, & Fiscella, 2004). Spiritual issues are sometimes included among questions on admission, but often are not included in treatment plans (Arnold, Avants, Margolin, & Marcotte, 2002).

### ***Spiritual well-being.***

Spiritual well-being is utilized in this study as a measure of the spiritual factor of a person. Spiritual Well-Being is a concept that first emerged in the quality of life literature in the 1970's. At the time social indicators were being sought that measured subjective quality of life (Moberg, 1979; Paloutzian & Ellison, 1982). Spiritual well-being arises from spiritual health and includes religious and psycho-social components (Ellison, 1983). The National Interfaith Coalition on Aging (NICA) developed the following definition, "Spiritual well-being is the affirmation of life in a relationship with God, self, community, and environment that nurtures and celebrates wholeness" (Cook, 1975). This definition includes those who are focused on a sacred being, God.

Spiritual well-being has been conceptualized as having two components (Paloutzian & Ellison, 1982). Religious well-being is described as a vertical component, denoting a relationship with a higher being or God. Existential well-being is described as a horizontal component indicating a sense of purpose and meaning in life and includes all people by not referencing God. For most people, spiritual well-being refers to a satisfaction with life that one experiences from having purpose and meaning in life and is experienced through transcendence or a relationship with God or a higher power (Ellison, 1983; Mickley, Soeken, & Belcher, 1992).

### **Assumptions of the Study**

The following are statements of assumptions of this study.

- Addictions are “learned habits that once established become difficult to extinguish even in the face of dramatic, and, at times, numerous negative consequences” (DiClemente, 2003, p. 4).
- The person undergoing Methadone treatment is addicted to a substitute drug.
- Persons undergoing Methadone treatment are willing and able to give honest responses to written questionnaires about spiritual well-being, anxiety, and depression.
- Spiritual well-being is a facet of spirituality.
- Higher scores on spiritual well-being indicate higher spiritual quality of life
- The Spiritual Well-Being Scale is valid for the population being studied

### **Chapter Summary**

In summary, a paucity of research exists regarding spirituality in the person who is currently abusing substances. Yet, research indicates it is an important topic with a few studies noting that spirituality is important to recovery. With the success of AA and NA and the lack of success of other programs, it is clear the spirituality is an important factor in recovery for at least some abusers. Understanding the relationship between spiritual well-being, religiosity, depression, and anxiety will help in understanding the person who is addicted to drugs. Improved knowledge of spirituality and religiosity while in the grip of drug addiction could lead to an opportunity to effect positive change in persons suffering from substance addiction. This study helps to fill in the knowledge gap in the literature.



## Chapter III

### Research Design and Methods

Spirituality is “the innate capacity of the human person to transcend herself/himself to experience meaning and purpose in life through contemplation and action aimed ultimately toward the sacred” (J. Schaefer, personal communication, August 31, 2010). Spirituality is a factor in addiction. Persons who are in recovery from addiction note spirituality helped them maintain abstinence through becoming aware of a higher power in their lives (Green, Fullilove, & Fullilove, 1998). Very little is known about how spirituality affects the person who is currently addicted to opioids and whether spirituality or spiritual well-being affects continued addiction or addiction affects spirituality.

Persons undergoing methadone maintenance therapy (MMT) are taking methadone as a substitute for their drug of choice in addiction, usually heroin or prescription pain medications. Alongside the addiction, these persons commonly have coexisting depression and anxiety. Understanding the relationships among spiritual well-being, depression, and anxiety will help in understanding the person who is addicted to opioid drugs. Improved knowledge of spirituality while in the grip of drug addiction could lead to an opportunity to affect positive change in persons suffering from substance addiction.

#### **Research Aims**

Aim 1: Increase understanding of spiritual well-being (SWB) and religiosity among persons with opioid addiction when undergoing methadone maintenance therapy.

Aim 2: Increase understanding of the relationships among spiritual well-being, religiosity, depression, anxiety, and negative drug use consequences among persons with opioid addiction.

Aim 3: To evaluate the association of spiritual well-being, religiosity, anxiety, depression, with continued drug use among persons with opioid addiction during methadone maintenance therapy.

### **Methodology**

The following sections describe the methodology utilized in this research study. The research design is described along with information regarding the setting, study measures and instruments, including the Spiritual Well-Being Scale, the Religious Background and Behavior questionnaire, Patient Health Questionnaire 9-item depression module and the State-Trait Anxiety Inventory. The statistical analysis utilized to answer the research questions are reviewed as well as sample size and measures to ensure human protection.

#### **Research design.**

A descriptive and cross-sectional correlational design was used to determine the association of spiritual well-being (SWB), religiosity, depression, and anxiety with continued drug use and drug use consequences during MMT. Questionnaires regarding SWB, religious background and behavior, anxiety, depression, and drug use consequences were administered upon admission to the study. Demographic data and medical and psychiatric history as well as drug abuse and spiritual history were collected by chart review. Physiological data including recent methadone levels and presence of illicit drugs in the urine during the last month were also collected.

#### **Sample.**

A convenience sample of participants who were enrolled in Methadone Maintenance Therapy and met study entrance criteria were recruited from an outpatient methadone clinic. Participants were required to speak, read, and understand English.

Participant inclusion criteria were age 18 or older and the ability to answer questionnaires independently. These inclusion criteria were necessary as the self-administered questionnaires were in English. Subject exclusion criteria were lack of fluency in English, volunteers who had prior treatment less than three months ago and are now newly enrolled in current treatment (< 2 weeks). This last exclusion criteria was chosen as those who had recent treatment and were now newly re-enrolled may score differently due to recent relapse.

### **Setting.**

The setting of the study was a national, privately held methadone maintenance clinic located in a large Midwestern city. The national clinics specialized in behavioral health issues and were not affiliated with a religion. The clinic was located in a small industrial area within the city limits and within a short walking distance of city buses. The patients in this outpatient clinic were self-referred. A small number chose to enroll so that it would look good on their records due to the fact that they had impending court dates. Patients either had insurance or were required to pay for services on a daily basis. The clinic had a census of about 400 outpatients and enrolled approximately 15 new patients a month. A medical doctor supervised care in the clinic. An advanced practice nurse performed a medically focused intake history and physical exam and yearly physical exams and managed medication treatment. Addiction counselors completed the initial biopsychosocial assessment, including the spiritual history, and clinic orientation. When entering the program patients have a history and physical performed by the advanced practice nurse and blood drawn by the registered nurse. The blood work includes complete blood counts to ensure the patient is basically healthy as they begin treatment.

Once accepted into the clinic the patients have an orientation and begin the first phase of MMT which includes daily doses of oral liquid methadone distributed by licensed practical nurses. Patients are required to participate in weekly group sessions and weekly individual counseling sessions at the clinic. Topics covered in the group sessions ranged from drug avoidance to dealing with emotions. Spiritual and religious topics are not discussed with patients unless the patient brings it up. Counselors are instructed not to bring up these subjects in part due to the risk of proselytizing.

The average clinic census was 408 patients for the year that the study began. The reported race of the patients were 79% White, 13% Hispanic, 2% African-American, 2% Asian and 1% Native American. The patients were 61% male and 39% female. Forty-nine percent of the patients are less than 35 years old. The majority of patients reported very low incomes (58% less than \$15,000, 13% between \$15,000 and \$20,000, 16% between \$20,000 and \$30,000 and 8% between \$40,000 and \$50,000).

### **Measures/Instruments**

Demographics collected for this study included age, race, sex, highest education, employment history, primary drug of abuse, years of abuse, number of days of methadone therapy, previous drug treatment, recent drug use, psychiatric and medical history upon admission, and current anxiolytics.

Independent variables measured included self-administered questionnaires for spiritual well-being, religiosity, anxiety, and depression. Dependent variables measured included urine drug screens for methadone use and for absence of drugs of abuse, serum methadone levels, and an inventory of drug use consequences. See Figure 2 for a conceptualization of the variables in relation to the five variables in the basic structure of the person.

**Figure 2. Measurements of Client System Variables.**

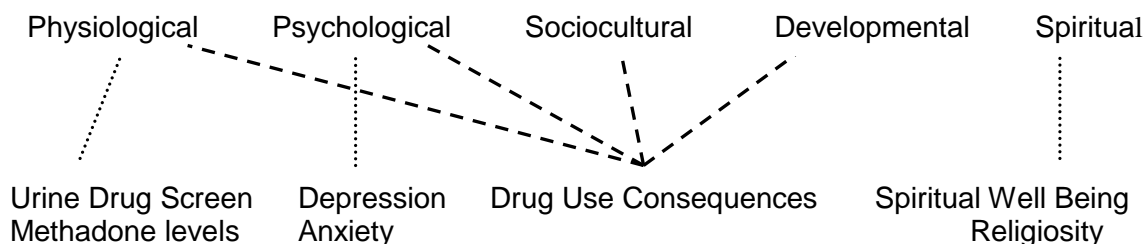


Figure 2 . The five interacting variables of the client system in Neuman's Model are shown in relationship to the primary measures in the study.

### **Spiritual Well-Being.**

Spiritual Well-Being was measured using the Spiritual Well-Being Scale (SWB) (Bufford, Paloutzian, & Ellison, 1991; Ellison, 1983; Ellison & Smith, 1991; Paloutzian & Ellison, 1991/2009) [©1982 by Craig W. Ellison and Raymond F. Paloutzian].

Permission to use this tool was obtained from the authors (Appendix A). The SWB was a 20-item tool which included two 10-item subscales, Existential Well-Being (EWB) a vertical component denoting a relationship with a higher being or God, and Religious Well-Being (RWB), a horizontal component indicating a sense of purpose and meaning in life. Each of the items was scored on a six-point Likert-type scale using the following words: strongly agree, moderately agree, agree, disagree, moderately disagree, strongly disagree. Some items were negatively worded and reverse scored. Possible scores ranged from 20-120 with higher scores indicating greater spiritual well-being.

The SWB has strong psychometric properties that have been demonstrated in various populations including outpatient counselees (Bufford, Paloutzian, & Ellison, 1991). Internal consistency based on over 900 participants has ranged from .82-.94 for the total scale, 0.78-0.86 for the existential well-being (EWB) and 0.89-0.94 for the religious well-being (RWB) subscales (Hill & Hood, 1999). Validity was indicated as the

scale correlated with other measures that were similar, e.g. spiritual well-being correlated with higher self-confidence and intrinsic religion measures (Hill & Hood, 1999). The scale has been used in several studies of substance abuse and, while considered to be valid and reliable, Cronbach's alpha scores have not been reported in these studies. One criticism of the SWB is that the EWB scale is contaminated by measuring psychological well-being (Koenig, 2008). Thus, associations between mental health and the SWB may be skewed positively. By reporting the subscales separately, this issue can be examined. Spiritual well-being has been shown to be related to mental health. Two of the aspects of mental health measured in this study were depression and anxiety.

### **Religiosity.**

The Religious Background and Behavior Questionnaire (RBB) was used to measure religiosity (Appendix B). The RBB was developed to measure lifetime and recent religious behavior to be used in tandem with other measures of spirituality (Connors, 1996; Hartz, 2005). The tool was in the public domain and consisted of 13 questions. The first question asked the person to categorize himself or herself as atheist, agnostic, spiritual, religious or unsure. The next six questions asked the person to rate the frequency of their participation in various religious or spiritual activities in the last year ranging from never to more than once a day. The last six questions asked if the person performed these same activities in the past and at the present time with possible answers indicating never, in the past, or in the past and still actively participating. Possible scores on the tool ranged from 0-46 with higher scores indicating greater religiosity.

A version of the tool was used by Connors, Tonigan, and Miller (1996) in a large scale study of alcoholism with good overall scale reliability ( $\alpha=0.86$ ). Two factors were

identified with a five-item God Consciousness scale ( $\alpha=0.76$ ) and an eight-item Formal Practices (0.81) scale. Test-retest reliability was good ( $r=0.94$ ).

### **Depression.**

Depression was measured with the Patient Health Questionnaire 9-item depression module (PHQ-9, ©Pfizer, 2005) (Kroenke, Spitzer, & Williams, 2001) [Appendix C]. The PHQ-9 is a 9-item instrument that is a module extracted from a larger primary care screening tool and permission is not needed to use the tool. The PHQ-9 was originally developed to be in congruence with the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) criteria for depression (Kroenke Spitzer, & Williams, 2001). The nine items on the tool are rated on how often in the last two weeks the person has exhibited depression symptoms, such as feeling down or having little energy. The frequency of occurrence ranges from not at all (scores 0) to nearly every day (scores 3). The range of scores for the PHQ-9 is 0-27 with scores over 15 indicating the need for depression treatment. The tool has been found to have strong psychometric properties with high internal consistency reported ( $\alpha = 0.90$ ) and a 1-factor structure with coefficients above 0.35 on all items (Dum, Pickren, Sobell, & Sobell, 2008). It also has been used in longitudinal research with a good test-retest validity ( $r=0.81-0.96$ ) (Löwe, Unützer, Callahan, Perkins, & Kroenke, 2004). The tool has been validated in the substance abusing population (Dum, et al., 2008). The PHQ-9 has compared favorably to the BDI (Dum, et al, 2008) and the BDI has been negatively correlated to the SWB (Fehring, Brennan, & Keller, 1987).

### **Anxiety.**

Anxiety was measured with the Spielberger State-Trait Anxiety Inventory (STAI). The STAI is a widely used tool measuring anxiety consisting of two 20-item scales: state and trait (Spielberger & Vagg, 1984) [©1968, 1977 by Charles D. Spielberger].

Permission was obtained to use this tool (Appendix D). The state scale measures the more transient anxiety of an immediate situation whereas the trait scale measures individual perception of stress and stress responses. Individuals are asked to rate how often they feel anxiety symptoms. Some of the items are negatively worded and reverse scored. Scores for each item on both subscales range from 0-4 with higher scores indicating greater frequency of occurrence of the item. Total scale scores range from 40-160. The STAI reliability is high for trait anxiety (0.65- 0.86) and lower (0.16-0.62) for the state anxiety scale where it is expected that responses will vary based on immediate factors. The tool has good validity, as it has been correlated with other anxiety tools (Spielberger & Vagg, 1984). Several studies have used the STAI to measure stress in the persons who are substance users (Darke, Swift, & Hall, 1994; Donham, 1984; Karlsgodt, Lukas, & Elman, 2003). The tool is written at the sixth grade reading level.

#### **Outcome measures.**

Abstinence from illicit drugs was evidenced by urine drug test results. Participants had bi-weekly random urine testing when beginning treatment. This was decreased to bimonthly depending on urine test results. When patients were due for urine testing, their attendance card was flagged to indicate a sample was needed. Staff did not administer methadone until the sample was acquired. Therefore, samples were consistently obtained. Test results indicated the presence or absence in the urine of specific illicit drugs including heroin, cocaine, methadone, opiates, barbiturates, alcohol, benzodiazepines, amphetamines, and marijuana. The results were reviewed by the counselors and documented on a form in the patient's chart. Positive illicit drug results were reviewed with patients by their counselors.

Methadone levels were collected at yearly physical exams. Levels within one year of the study were extracted from the patient charts. Serum trough levels of 150-600



ng/mL are thought to be adequate to control drug craving (Center for Substance Abuse Treatment, 2005). Levels were dependent on pharmacokinetics and metabolism and, thus, varied among participants. Due to the variance in patient response to methadone doses, serum methadone levels were considered less important than monitoring the patient for withdrawal or overmedication (Leavitt, 2003). The methadone levels were used in this study to reflect that the patient was taking the drug and to explore relationships between therapeutic levels and spirituality and religiosity. It was postulated that therapeutic levels indicated patient compliance with the medication regimen and, thus, would relate to spirituality and religiosity. Urine test results and methadone levels were recorded in a password protected patient data base for use as outcome measures. Only the study investigator had access to the coded data stored on a personal computer.

The Inventory of Drug Use Consequences (InDUC) is a 50-item tool assessing the negative consequences of drug use (Tonigan & Miller, 2002). The tool is in the public domain. The InDUC can be used to assess lifetime or recent drug use consequences. For this study the recent version was chosen. The recent version, InDUC-2R3, assessed the negative consequences over the last 90 days (Appendix E). Both lifetime (InDUC 2L) and recent (InDUC-2R3) versions have good test-retest reliability (Blanchard, Morgenstern, Morgan, & Labouvie, 2003; Tonigan & Miller, 2002). Individual items were scored as to frequency of occurrence of the particular negative consequence. Frequencies ranged from never (scored 0) to daily or almost daily (scored 3). Five items were control items and were not scored. The range of scores was 0-135 with higher scores indicating more negative consequences. Internal consistency has been reported at 0.82-0.96 (Blanchard et al., 2003; Conner, Ross, Baciewicz, Sworts, & Meldrum, 2009). When participants completed this questionnaire, they were instructed to include methadone along with any illicit drugs used in the three months prior to study participation.

## Procedures

After receiving approval from Marquette University's Institutional Review Board and permission from the clinic director, the investigator met with the clinic staff to describe the study. An advertising flyer (Appendix F) was posted in the clinic and a description of the study was included in the clinic newsletter (Appendix G). The investigator was present in the clinic lobby to individually explain the study to those present and to hand out fliers. Clinic staff identified some patients who had psychiatric co-morbidities, mainly severe depression or anxiety, who should not be approached to participate. The milieu of the lobby was often one of friendly conversation as patients waited for group meetings, appointments, or to receive their daily methadone. Patients expressed interest in the investigator's presence and in participating in the study. Interested persons were taken to a private office and given a consent form (Appendix H) for their review and questions were answered. They were given a choice to proceed to participation or to not enroll in the study after reviewing the consent.

Once written consent was obtained the questionnaires were administered utilizing a computerized survey instrument on a desktop computer in a private office in the clinic. The computer was in a locked office and password protected. It was only available for the clinic supervisor to use when not being used in the study. The survey was hosted by Qualtrics, a secure, HIPAA compliant website. Only the investigator had access to the website. The system allowed the researcher to design the questionnaire, log each individual in to the site separately, and seamlessly presented the five questionnaires with the use of a password trigger for each questionnaire. The SWBS began the sequence followed by the RBB. These questionnaires were the main focus of the study and, so, were completed first. The third questionnaire was the depression scale followed by the longer STAI. The last questionnaire was the lengthy INDUC. This

was administered last so as to not fatigue the participant prior to the last questionnaire. Participants were logged onto the computer by the investigator with a coded identity. The participants then independently completed self-administered study questionnaires for spiritual well-being, religiosity, depression, anxiety, and an inventory of drug use consequences. Most participants took 15-30 minutes to complete the five questionnaires.

Due to security protocols in the clinic the investigator was required to be present at all times with the participant. The participant was encouraged to ask questions as needed. Otherwise, the investigator worked on paperwork at a table facing away from the participant. While some participants chose to engage the investigator in conversation about the study and about religion and spiritual issues while they were on the computer, others worked quietly. The investigator did not offer any advice to the participants and remained neutral during conversations to keep from influencing results. Immediately after participants completed all five study questionnaires and logged off the website, they received a \$15 gift card to a fast-food restaurant from the investigator. This amount was chosen to provide an incentive to participate in the study without being coercive. The literature is equivocal on how much and even whether participants should be compensated. However, due to the sensitive nature of the topic, it was felt that a modest compensation would be appropriate to assist in recruitment without exploiting an already vulnerable population.

The investigator was present in the clinic an average of two days a week for nearly six months. The computerized data were collected and maintained on the secure website until downloaded by the researcher. The data were coded with no patient identifiers and kept in a password protected computer file. The investigator completed the chart reviews to gather demographic data and data for the outcome measures. This data was kept in a password protected computer file.

## Data Analysis

In order to explore the first research aim, descriptive statistics were utilized to examine the SWBS and the component subscale scores for EWB and RWB as well as the RBB and the subscale scores of Formal Practices and God Consciousness. The descriptive statistics included mean, standard deviation, and range. A one-sample T-test was used to determine SWBS score differences between study participants and other reference groups. The one-sample t-test is used when the standard deviation of the population is unknown (Howell, 2002). This allows for testing the sample mean against a population mean.

For the second research aim the summated score for the PHQ-9 and the InDUC, and the subscales of the STAI, the SWBS, and the RBB were compared using correlations. Correlations examine the degree of relationship between two variables (Howell, 2002). The Pearson Product-Moment Correlations coefficient (Pearson's  $r$ ) was used. A correlation matrix was created using Pearson's  $r$  values to describe relationships between the study variables.

The third research aim was examined using a multiple regression and logistic regression methods. A regression predicts the chance of a dependent, or outcome variable, based on an independent, or predictor variable (Howell, 2002). A multiple regression is used when the dependent variable is a numerical scale. A logistic regression is used when the dependent variable is dichotomous. The predictor variables for the regressions were the SWBS, the RBB, the PHQ-9, and the STAI total scores. The multiple regression dependent variables were methadone levels and the InDUC. For the logistic regression the dichotomous dependent variable was the presence or absence of illicit drugs in the urine. SPSS 17.0 (SPSS, 2009) was used to analyze the data. A statistician was consulted for data analysis assistance as needed.

### **Missing Data.**

Data on the five study questionnaires were checked for completeness and the following was discovered. Regarding the SWBS, three participants did not answer one item on the SWBS (one on the RWB subscale and two participants on the EWB subscale) and mean substitution was used to replace these single items. Data from the recent year were used to answer the lifetime questions if the participant only missed one question. Since question two and question three mirror each other with different time frames, data were inferred from the question that was answered. For example, one participant indicated having never prayed in life and it was assumed that the person had not prayed in the last year. Another person reported having direct experience of God once or twice a month and the substitution was made that they had a direct experience in the past and also do now. No items were missed on the PHQ-9.

The STAI included two 20 item subscales. Mean substitution was used for the fifteen participants missing one item. Two participants missed two items on one subscale and mean substitution was used for these. Overall, less than one percent of the data were incomplete and validity was maintained. The InDUC was the longest (50 questions) and last tool administered. Twenty one people missed one item and two people missed three items, mostly from different items between the participants. Mean substitution was used for the missing data.

### **Demographic Data**

Demographic data were reported using frequencies for race, ethnicity, sex, education, categorization of years of MMT, religion, primary drug of abuse, recent drug use, and psychiatric and medical history and number of previous drug treatment programs in which volunteers participated. Means were reported for age, number of

years of opioid abuse prior to MMT, and number of days of methadone therapy prior to study entrance.

### **Justification for Sample Size.**

The necessary sample size estimated for this study was 108. The a priori analysis of sample size was based on the multiple regression with a desired power of 0.90, a medium effect size of 0.15 and a significance level of 0.05 (G-power 3.0, Faul, Erdfelder, Lang, & Buchner, 2007). For the analysis 2-tail tests were chosen as it was uncertain if the instruments would correlate in a negative or positive direction. Based on a 10-15% rate of unusable data, approval for 140 patients was requested by the investigator and granted by the University Institutional Review Board.

### **Human Rights Protection**

Prior to entering the study written informed consent was obtained from all participants according to Marquette University guidelines. Consent was obtained by the Principal Investigator using a written consent form approved by the Marquette University Office of Research Compliance for this study which contained detailed information regarding the purpose, risks, and benefits of participating. See Appendix H.

Volunteers were informed that all information obtained would be strictly confidential and would not affect clinic status or treatment. Strict participant confidentiality was maintained throughout, with only the exception of reporting if the participant was determined to be at risk of harm to self or others. All data were stored in locked file drawers or password protected computer files in a locked office in an office area in an education building at the university. The area was secured after hours. Volunteers were assigned a code number upon study entrance. Only the investigator had access to the ID code, which was maintained in a locked file separate from the data. This number was used throughout the experiment and was the only identifier on instruments and data

sheets. The identity of Volunteers was not revealed at scientific meetings, in publications or other vehicles of public communication. Data were pooled across Volunteers as appropriate.

Participants were informed of the right to withdraw from the study at any time without fear of reprisal. The possible benefits and risks of the study were explained. The only identifiable risk to this study was possible emotional distress when participants consider their life and spiritual and religious aspects of it. Clinic counselors were available to assist the investigator and meet with patients for issues of emotional distress in the participants.

## Chapter IV

### Results

This chapter presents the results from this study. This presentation begins with a description of characteristics of the study participants: demographic data are reviewed as well as recent drug use characteristics. This is followed by results that address the three aims of the study. Descriptive statistics, correlation matrices, logistic regression, and multiple regression tests are presented. The chapter concludes with a summary of the results.

#### Sample Characteristics

The study sample consisted of 111 participants undergoing methadone maintenance therapy (MMT) who met inclusion criteria. The complete data analysis does not include three participants as they did not complete all the study questionnaires for various reasons: one became fatigued, one did not complete more than half the questions on one questionnaire due to time constraints, and one withdrew before completing the last questionnaire due to emotional stress which she expressed as not wanting to think about her situation. This third person met with her counselor to discuss her feelings and felt better.

The final sample of 108 included 54 women and 54 men. The mean age of the sample was 34.8 (Standard Deviation 11.4, range 21-65 years). Women (mean age 32.4) were significantly younger than men (mean age 37.2) [ $t(106)=-2.193, p=0.03$ ]. The majority of the sample was white (89%) and non-Hispanic (89%) and had a high school or equivalent education (64%). Most (70%) were unemployed at the time of admission to MMT.

Spiritual history was available in 90 charts. This history was part of the biopsychosocial assessment that was completed with the addiction counselor upon clinic



admission (See Appendix I). Most of the remaining charts had incomplete spiritual history sections or were missing intake forms. The majority of the completed charts indicated that the sample believed in a higher power (88%) and the majority (62%) indicated that their spiritual belief or higher power would have an impact on their treatment. Evidence was found that a majority indicated a belief in God (77%). Only 24% indicated they attended formal religious or spiritual practices, 37% indicated formal practices were a significant part of their life, and 58% indicated they meditated or prayed regularly. Only 80 of the charts noted an answer to “How has your substance abuse affected your spiritual aspect of life?” Of these, 53 (66%) noted that substance abuse had an impact, whereas the rest did not. Of these 53 people, 35 (66%) noted the impact as negative such as not attending church, not praying, and neglecting God due to the substance abuse. Nine people noted a positive affect such as praying more often, turning to God because of use and feeling more spiritual.

The sample had been undergoing Methadone Maintenance Therapy (MMT) for an average of 3.1 years (range 0-28.1 years). Many (30%) had not been treated for drug addiction in the past, however, 33% declared one prior episode and 23% two prior episodes of addiction treatment. Most (43%) stated that heroin was their drug of choice while 32% preferred prescription opioids, such as oxycodone and hydrocodone, and 16% were documented as preferring “opioids” in general. Over 70% of the sample did not drink alcohol when entering MMT and the majority of the rest drank less than once a week. Table 1 summarizes demographic characteristics of the sample.

**Table 1***Sample Characteristics*

Variables	Mean (SD) (n=108)	Range
Age (years)	34.8 (11.5)	21-65
Length of time in MMT(years)	3.1 (4.53)	0-28
Inventory of Drug Use Consequences (INDUC)	35.0 (28.78)	0-106.7
	Number	Percent
Race		
White	96	90
African-American	6	6
Native American	5	5
Other	1	1
Ethnicity		
Hispanic	12	11
Non-hispanic	96	89
Sex		
Female	54	50
Male	54	50
Education		
Less than H.S.	27	25
High School	69	64
< 4 years College	4	4
≥ 4 years College	3	3
unknown	5	5
Primary Drug of Addiction		
Heroin	46	43
Prescription opiates	36	33
Illegal Methadone	5	5
All opiates	17	16
Data not available	4	4
No previous drug treatment	30	28
Years in MMT		
<1	40	37
1-2	19	17
2-3	13	12
3-5	13	12
5 or more	22	20
Religious Background		
Spiritual	48	44
Religious	45	42
Unsure	11	10
Negative for illicit drugs	47	44

## **Analysis of Aims**

The overall purpose of this study was to increase understanding of spirituality, religiosity, depression, and anxiety among persons addicted to opioids. The study had three separate aims. These aims and the results are presented individually below.

### **Analysis of the Spiritual and Religious Characteristics of the Sample.**

The first study aim was to increase understanding of spiritual well-being (SWB) and religiosity among persons with opioid addiction when undergoing methadone maintenance therapy. Descriptive statistics were utilized for Aim 1 to determine the SWB and its component scores for EWB and RWB of the study group. The Spiritual Well Being Scale (SWBS) has a scale range of 0-120 with higher scores indicating higher spiritual well being. Each of the subscales, EWB and RWB, has a maximum score of 60. The means and ranges for the study sample are presented in Table 2. Cronbach's alpha for this sample was 0.90 for the total scale, 0.83 for the EWB and 0.92 for the RWB subscales indicating that the scale is reliable in this population.

The Religious Background and Behaviors Questionnaire (RBB) measured religiosity for this study. The version of the scale used had a range of 0-46. The RBB had two subscales of God Consciousness (GC) and Formal Practices (FP) with scale ranges of 0-18 and 0-28 respectively. A summary of the RBB scores is presented in Table 2. Cronbach's alpha for this RBB sample was 0.89, 0.78 for the GC subscale and 0.86 for the FP subscale indicating adequate reliability. Means for the scale are not reported in the literature. The first question on the RBB addresses whether a person is spiritual, religious, unsure, atheist, or agnostic. The majority of the sample described themselves as spiritual or religious (86.1%), that is, they believed in a sacred being or supreme reality regardless of whether they practiced religion. Fifty-one percent of the

sample endorsed that they attended religious services regularly in the past but did not do so now.

**Table 2**

*Spiritual Well-Being, Existential Well-Being, and Religious Well-Being Means and Ranges (n=108)*

Scale	Mean	Standard Deviation	Range
Spiritual Well-Being Scale (SWBS)	86.7	16.41	51-120
Existential Well-Being (EWB)	41.4	8.76	20-60
Religious Well-Being (RWB)	45.3	10.58	10-60
Religious Background and Behavior (RBB)	23.7	9.80	0-46
RBB God Consciousness Subscale	13.1	4.07	0-18
RBB Formal Practices Subscale	10.6	6.69	0-28

Normative data were sought for comparison of this group to other studies of persons with addiction. Three studies using the SWBS were located. The studies are presented in the following paragraphs because the data was tested against the results of this study. Table 3 summarizes the studies that were located in the literature.

Brome, Owens, Allen, & Vevaina (2000) studied 146 mothers who were recovering from polysubstance drug addiction for two years. The study found a mean SWBS of 48.28. However, the scale was scored with lower numbers indicating greater spirituality. Reversing this score would indicate a mean of 71.72.

A second study examined 49 patients admitted to an intensive outpatient addiction treatment program for alcoholism (Piderman, 2004). The SWBS was administered at intake (Time one) and at discharge three weeks later (Time 2). A significant increase in the SWBS was seen in this sample.

A third study measured spiritual well-being in 81 persons with alcohol dependence being treated at an outpatient drug and alcohol treatment clinic (States, 2001). The participants were divided into four groups based on self-reported length of sobriety. Groups one and two were entering treatment and were divided into those not having previous sobriety or having been sober with recent relapse. Groups three and four were in the middle of treatment and were divided into those with three months versus six months or longer of treatment.

A one-sample t-test was used to determine if the SWBS of the current sample differed from the reference groups. Seven groups taken from the three studies had an overall SWBS mean score of 85.7. The mean score of 86.7 for this study is not significantly different than that reported in the literature ( $t_{(107)}=0.624$ ,  $p=0.534$ ). The mean in this study falls between those entering alcohol treatment and those who have been in treatment for three weeks. The scores in this study are also lower than those who are sober more than two months.

**Table 3***SWBS of Reference Groups from the Literature*

Study	Sample Size	Groups	SWBS	Standard Deviation <sup>‡</sup>
Brome, et al., 2000*	146		71.72	
Piederman, 2004	49	Time 1	83.2	17.5
	49	Time 2	89.7	18.1
States, 2001	18	no sobriety	80.39	15.72
	21	recent relapse	89.76	14.71
	17	3 months sobriety	91.32	16.44
	25	6 months sobriety	94.04	18.26
Total of 7 groups	325		85.7	

\* Data are reversed from reported in study as scale was used with lowest number indicating higher spirituality.

<sup>‡</sup> SD (Standard Deviation) is reported when available

### **Analyses of Associations Between Spirituality, Religiosity, Depression,**

#### **Anxiety and Drug Use Consequences.**

The second aim in this study was to increase understanding of the relationships among spiritual well-being, religiosity, depression, anxiety, and negative drug use consequences among persons with opioid addiction.

For this aim correlations were examined among measures of spiritual well-being (SWBS), religiosity (RBB), depression, anxiety, and the Inventory of Drug Use Consequences (INDUC). In the present study Cronbach's alpha for the PHQ-9 was

0.88. Cronbach's alpha for the Spielberger State-Trait Anxiety Inventory (STAI) was 0.96, for the State subscale it was 0.95 and for the Trait subscale it was 0.94. The INDUC demonstrated a Cronbach's alpha of 0.97.

A correlation matrix was created to describe the relationships between the variables in this aim. Comparison correlations include the summated score for the PHQ-9 and the InDUC and the subscales, as well as total scores for the STAI (subscales state and trait), SWBS (subscales EWB and RWB) and RBB (subscales God Consciousness [GC] and Formal Practices [FP]). The correlations are summarized in Table 4.

**Table 4**

*Correlation Matrix for Spiritual Well-Being, Religiosity, Depression, Anxiety and Drug Use Consequences (Pearson's r correlations)*

	RBB	GC	FP	PHQ-9	STAI	State	Trait	INDUC
SWBS	0.60**	0.57**	0.53**	-0.47**	-0.46**	-0.40**	-0.46**	-0.07
EWB	0.33**	0.23*	0.34**	-0.61**	-0.67**	-0.58**	-0.67**	-0.22*
RWB	0.65**	0.69**	0.54**	-0.22*	-0.17	-0.14	-0.17	0.07
RBB				-0.16	-0.12	-0.10	-0.13	0.03
GC				0.01	0.06	0.04	0.06	0.11
FP				-0.23*	-0.21*	-0.17	-0.23*	-0.03
PHQ-9					0.75**	0.61**	0.79**	0.39**
STAI								0.40**
State								0.38**
Trait								0.36**

\*p < 0.05 (2-tailed)

\*\*p < 0.01 (2-tailed)

## **Analysis of Associations Between Spirituality, Religiosity, Depression, Anxiety and Continued Drug Use**

The third aim in this study was to evaluate the association of spiritual well-being, religiosity, anxiety, depression, with continued drug use among persons with opioid addiction during methadone maintenance therapy.

A multiple regression analysis was completed with predictor variables of spiritual well-being (SWBS), religiosity (RBB) depression (PHQ-9), and anxiety (STAI). The dependent variable was the methadone level of the patient taken within one year of the study. Methadone trough levels taken within 12 months were only available on 57 patients. Reasons for missing levels include patients new to treatment, patients tapering off treatment and hence no level drawn, and patients missing appointments. Trough levels indicate the amount of drug in the plasma at the lowest point of the day, just prior to the next dose. In order for methadone to be effective it is estimated that a therapeutic trough level must be between 100-600 ng/mL (Center for Substance Abuse Treatment, 2005). In this study, two patients had levels less than 100 ng/mL, suggesting which is considered subtherapeutic. The mean level for the other 55 patients was 441.6 (SD 191.40) with a range of 103-843. The model was not found to be associated with methadone levels in the patients ( $F_{(4,50)}=1.13$   $p=.35$ ).

To examine the association of positive urine tests to spiritual well-being, religiosity, depression, and anxiety, urine test results for the presence or absence of illicit drugs in any of the urine samples tested during the month prior to study participation. A logistic regression was completed with the same predictor variables, the SWBS, the RBB, the PHQ-9, and the STAI. The outcome variable was presence or absence of illicit drugs in any of the urine tests recorded. The most common illicit drugs found were opiates, benzodiazepines, marijuana, cocaine, propoxyphene, and amphetamines.



Sixty-one participants (57%) had at least one urine positive for illicit drugs during the month prior to the study. The regression model was not significant ( $F_{(4,103)}=1.08$   $p=.372$ ).

To examine the association of negative drug use consequences with spiritual well-being, religiosity, depression, and anxiety a multiple regression analysis was completed. Predictor Variables were the SWBS, the RBB, the PHQ-9, and the STAI. The dependent variable was the InDUC. The model was found to be significant,  $R^2=0.203$ [ $AR^2=.17$ ] $F_{(4,103)}=6.57$ ,  $p<.001$ .. Therefore, the independent study measures (SWBS, RBB, PHQ-9 and STAI) accounted for 20.3% of the variance in the InDUC. Of the individual predictors only the anxiety score was found to be of significance ( $\beta=0.30$ ,  $t=2.2$ ,  $p=.03$ ). However, the depression scale approached significance ( $\beta=0.26$ ,  $t=1.9$ ,  $p=.06$ ). SWBS was not significant ( $t=1.5$ ,  $p=.135$ ). The RBB had a tiny effect and was not significant ( $t=-0.12$ ,  $p=.90$ ). Using backward selection RBB was removed and the model was run with 3 predictor variables. Using the three predictor variables of SWBS, STAI and PHQ-9, the model was significant,  $R^2=0.203$ [ $AR^2=0.18$ ] $F_{(3,104)}=8.84$ ,  $p<.001$ ]. The anxiety scale was the only significant predictor ( $\beta=0.35$ ,  $t=2.2$ ,  $p=.03$ ). However, the depression scale approached significance ( $\beta=0.26$ ,  $t=1.9$ ,  $p=.06$ ).

### **Additional Findings.**

Based on literature reports with equivocal results, exploration of variables in this study was completed looking for differences based on sex, age, and length of time in treatment. No significant differences were found in means of the participants based on sex or length of time in methadone therapy. A correlation was found between age and religious well-being ( $r=0.20$ ,  $p=.04$ ).

### **Chapter Summary**

This study sought to examine the spirituality and religiosity of persons undergoing methadone therapy for opioid abuse. The majority of the sample described themselves as spiritual or religious. The sample also had a spiritual well-being scale score similar to other groups with a history of drug abuse.

Also examined in this study were relationships among spiritual well-being, religiosity, anxiety, depression, and drug use outcomes among persons taking methadone. Correlations were found among spiritual well-being, religiosity, and anxiety. Depression was inversely correlated to the only the formal practices subscale but not the entire RBB. Depression was not related to the SWBS or either of its subscales. A positive correlation was also found between depression and negative drug use consequences.

Finally, this study examined the association between spiritual well-being, religiosity, anxiety, depression, and drug use outcomes among persons taking methadone. The outcome measures included methadone blood levels, urine tests positive for illicit drugs and negative drug use consequences. A multiple regression model demonstrated a significant relationship between anxiety and negative drug use consequences.

## Chapter V

### Discussion

The purpose of this study was to increase understanding of spirituality, religiosity, depression, and anxiety among persons addicted to opioids. A descriptive research approach was utilized to investigate spiritual well-being and religiosity among persons with opioid addiction undergoing methadone maintenance therapy (MMT), and the results were compared to similar samples. The relationships among spiritual well-being, religiosity, depression, anxiety, and negative drug use consequences were also examined in the study population. Additionally, the study evaluated the association of spiritual well-being, religiosity, anxiety, depression, with continued drug use while undergoing MMT.

#### Interpretations of the Findings

The sample in this study was somewhat similar to the clinic population. The clinic reports 49% of the patients being less than 35 years old which was similar to the mean age of 34.8. The clinic has more men (61%) than women enrolled, which differs from the study sample of 50% men. Thus, it appears the men were less willing to enroll in the study. The majority of participants in this study were white. Participants did include a slightly higher representation of African-Americans (6%) and Native Americans (5%) when compared to the clinic patients overall (2% African-American and 2% Native American). Overall, the sample demographics appeared fairly similar to the patient demographics of the clinic.

The study sample was different in race and gender to a large study of enrollees into methadone clinics ( 73% white, 13% black, 12% Hispanic, 36.6% female) However, the mean age in the large study was similar 35.0 (Rosenblum, et al., 2007).

Interestingly, national trends find the highest amount of illicit drug use to be in the age

group 18-25, less than a high school degree or partial college only, and those who are American Indian or Hawaiian or Pacific Islander (Substance Abuse and Mental Health Services Administration [SAMHSA], 2006). Perhaps access to treatment is more difficult for younger and minority persons and those with less than a high school education. Also, the younger may not yet have decided treatment was needed.

### **Spiritual well-being and religiosity in methadone maintenance therapy.**

The first aim of the study was to increase understanding of spiritual well-being (SWB) and religiosity among persons with opioid addiction when undergoing methadone maintenance therapy. The score on the Spiritual Well-Being Scale (SWBS) (M=86.7) indicated that the study sample had a moderate level of spiritual well-being ([moderate range=41-99], Paloutzian & Ellison, 1991/2009). The subscale scores for Existential Well-Being (EWB) and Religious Well-Being (RWB) also indicated a moderate amount of satisfaction with life, purpose in life and religious well-being, or wellness in reference to relationship with God. This SWBS score is within the range reported (M=76.30-105.5) for various counselee groups undergoing mental health treatment for diseases including eating disorders and sexual abuse (Bufford, Paloutzian & Ellison, 1991). The scores are lower than many other groups representing healthy populations. In the majority of studies, the SWBS scores have not been shown to vary in groups based on sex or age, which is consistent with this study (Bufford, et al.,1991).

Studies of similar populations were reviewed. Only two studies were located that utilized the SWBS in a drug abuse population. The first study examined those with alcoholism of which 27% were also using heroin or prescription pain meds (States, 2001). The SWBS mean ranged from 80.39 to 94.04 in this longitudinal study, with those being in recovery the longest having the highest scores. In a second study of African-Americans in recovery the mean was 71.72 (Brome, Owens, Allen, & Vevaina,

2000). This SWBS mean of this study was lower, compared to the mean in the current study. The literature reports that a communal religious experience is important to the spirituality of African-Americans (Musgrave, Allen, & Allen, 2002). The lack of well-being in this group may be related to the centrality of religion and spirituality in the study population (Brome, et al., 2000). The SWBS also may be biased towards a Christian, Western religious perspective. In a third study of persons with alcoholism, the mean score changed significantly from 83.2 to 89.7 during the three weeks the patients were in an alcohol treatment program (Piderman, 2004).

The spiritual well-being of the study sample (86.7) was lower than reported in the literature for similar groups under treatment for alcohol dependence for three weeks to 6 months or longer (89.7-94.0) in the studies by Piderman (2004) and States (2001) noted above. This is interesting when considering the MMT group has been in therapy for a mean of 3.1 years. One reason for the difference may be the attention paid to spirituality in the alcohol treatment programs. The three-week intensive outpatient alcoholism program included a lecture on spirituality and recovery as well as encouragement to join Alcoholics Anonymous (AA). In this methadone sample the patients were offered 12-step program information, but it was not an integral part of treatment. Religion and spirituality were not main foci of the program.

A second reason for the lower SWBS scores despite prolonged methadone therapy may be related to the continuing use of illicit drugs by participants. Substance addiction is a chronic disease characterized by continued use of a substance despite physical, psychological, or social harm (Rinaldi, Steindler, Wilford, & Goodwin, 1988). A person is considered recovering from substance abuse when they are no longer physiologically or psychologically dependent on the substance (Rinaldi, et al, 1988). Recent research has characterized recovery as a personal experience and a continual process (White, Wampler, & Fischer, 2007). Whereas the alcohol groups reported

abstinence and were apparently in full recovery, more than one-half (53%) of the methadone study participants had at least one urine test indicating use of an illicit drug during the month prior to study enrollment and are, at best, partially recovered.

The Religious Background and Behavior (RBB) questionnaire measured religiosity (Appendix B). In this tool the term “spiritual” included the notion that the individual was not religious but believed in a sacred being or supreme reality whereas “religious” meant the individual practiced religion and believed in a sacred being or supreme reality. This tool forced a choice of descriptor and one could not be both spiritual and religious. The overwhelming majority of participants described themselves as either religious or spiritual, as opposed to the other options of atheist, agnostic, or unsure. Unfortunately no comparison means for the RBB are reported in the literature. The scores on the God Consciousness subscale reflect the frequency in which a person prays and thinks about a sacred being as well as whether they categorize themselves as spiritual or religious. The scores (averaged 13.1 out of a possible 18) suggested that the participants think about God frequently. The scores on the Formal Practices subscale (averaged 10.6 out of a possible 28) suggested that participants were not frequently attending worship services, reading scriptures, meditating, or having experiences of God. The majority indicated they regularly attended formal religious services in the past but no longer do so.

The spiritual history was located on the biopsychosocial form in the chart. The questions asked at clinic intake included, “Do you have a spiritual belief, or a higher power? If yes, please describe” and, “How has your substance abuse affected your spiritual aspect of life?” Review of the charts discovered that the majority of the sample believed in God, prayed or meditated, and felt their substance abuse affected the spiritual aspect of their life in a negative manner. Several participants noted that they stopped going to church because of their substance use. Some of the reasons given

were the drug use changed their interest level, consumed their time, or made them feel guilty,

It is important that nurses recognize that the majority of participants felt substance abuse had negatively impacted their spiritual life and spiritual well-being. The participants believed in God or a higher power and prayed frequently, but were not regularly participating in formal practices. This aspect has not been documented in previous research. The physical and psychological aspects of addiction have impacted the spiritual factors, weakening the person. They have also lost at least some of the social contacts found in being an active part of a religious community. As suggested by the Neuman Systems Model, by recognizing the effects drug abuse is having on spiritual factors and developing strategies to strengthen the system, nurses can make an impact on the care of the patient with addiction. Nurses may be able to help the person contemplate and strengthen their spirituality.

**Relationships among spirituality, religiosity, depression, anxiety, and negative drug use consequences.**

The second aim of the study was to increase understanding of the relationships among spiritual well-being, religiosity, depression, anxiety, and negative drug use consequences among persons with opioid addiction. The relationships were investigated using correlations and several relationships were found (Figure 3).

**Figure 3. Results and Relationships among study variables.**

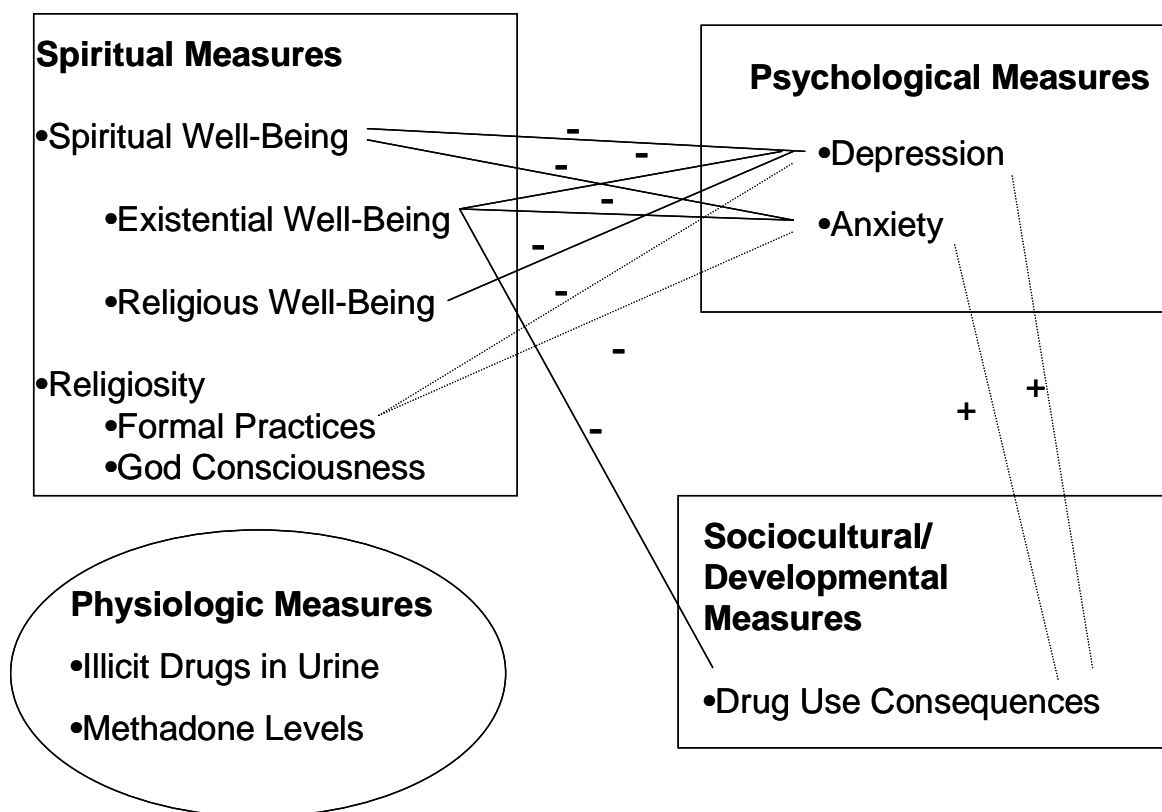


Figure 3. Relationships found among the study variables organized according to the Neuman Model. Positive (+) and negative (-) correlations are indicated.

Spiritual well-being was found to have a moderate inverse significant correlation to both the depression and anxiety measures. The EWB subscale inversely correlated to depression and anxiety. These findings are congruent with a study of older patients with advanced cancer in the United Kingdom (McCoubrie and Davies, 2006). However in the current study the RWB subscale inversely correlated with depression, but not anxiety. In the study of cancer patients the RWB correlated to neither depression nor anxiety. In the cancer study 22% of the sample (19 patients) described themselves as neither religious or spiritual which may explain why questions related to God did not correlate. Overall, the EWB is a much stronger factor than the RWB in relation to the



psychological measures. This could support the recent literature which questions whether the EWB is a measure of spirituality or of psychological well-being (Koenig, 2008). Spirituality itself is not clearly defined and separated from religiosity which leads to difficulty understanding results from a spirituality or spiritual well-being instrument.

The SWBS and the RWB subscale did not correlate with the Inventory of Negative Drug Use Consequences (InDUC), but the EWB did correlate significantly. This moderate negative correlation indicates that those who score higher in feelings of purpose in life and life satisfaction indicate lower scores on negative drug use consequences. As noted above, the EWB scale could be considered a measure of psychological well-being (Koenig, 2008) and, thus, more likely to inversely correlate with the InDUC which measures negative life factors. It is interesting that the SWBS total scale score did not correlate when considering the high correlation with all the other study measures. However, the InDUC did not correlate with the RBB or either subscale. Religiosity and negative consequences are not related and, thus, the RWB subscale may have prevented the SWBS from correlating.

Religiosity was not found to correlate with depression and anxiety, however, the formal practices subscale inversely correlated with both. Thus, the more religious practices, the less anxiety and depression. This is congruent with a prospective study of pregnant women that noted participation in organized religion was protective against post-partum depression (Mann, McKeown, Bacon, Vesselinov, & Bush, 2008). While this depression has a different cause, it is interesting that higher religiosity correlates predicted better protection from post-partum stress independent of antenatal depressive symptoms. The findings are congruent with studies showing that spirituality and depression are inversely correlated (Ellison & Smith, 1991). The relationship between religiosity and anxiety is less clear in the literature. One reason for the equivocal nature of the literature may be that anxiety itself may spur more religious activities, such as

praying (Koenig, McCullough, & Larson, 2001). Another reason may be that intrinsic religion, that is religion as an end in itself, differs from extrinsic religion, religion used as a means to an end. The literature suggests intrinsic and extrinsic religion are related to anxiety in opposite direction (Baker & Gorsuch, 1982; Koenig, McCullough, & Larson, 2001). This is an unknown factor in the current study and may have affected the results.

Depression and anxiety both moderately significantly correlated with negative drug use consequences. This indicates that the more depression and anxiety the person has, the more likely the person will have higher scores of negative consequences in the areas of subscale areas of physical, interpersonal, intrapersonal, impulse control and social responsibility. Items on the InDUC include alcohol or drugs harming the ability to be a good parent (interpersonal), spiritual or moral life (intrapersonal), and proper eating (physical) (See Appendix E). The InDUC has been developed as a measure of drug use consequences and no reports in relation to anxiety and depression were found.

This current study has discovered relationships among the variables in the theoretical framework demonstrating that the person with substance abuse has concerns in all five areas of the basic structure that correlate between the domains. Thus, credence is given to the belief that increasing well-being in one structural variable will increase well-being in another area. Among the study findings is the novel discovery of the relationship between the psychological domains and negative consequences. Also found was the relationship between existential well-being and negative consequences of drug use. By demonstrating these relationships interventions can begin to be developed to strengthen one variable of the person with the expectation that it also will strengthen other variables of the human person.

Also this study confirms earlier findings in which religiosity has been inversely correlated to depression (Koenig, McCullough, & Larson, 2001). Thus, through increased religiosity the person may be able to decrease depression. Increased

attention and helping the person contemplate and take action toward enhancing spirituality and religiosity may very well make a difference in the treatment of drug abuse.

**Associations among spirituality, religiosity, anxiety, depression and outcome measures.**

The third aim was to evaluate the association of spiritual well-being, religiosity, anxiety, depression, with continued drug use among persons with opioid addiction during methadone maintenance therapy. For this aim data were collected on three outcome measures: the methadone serum levels recorded within 12 months of study participation, the presence of illicit drugs in any of the urine tests recorded within one month prior to the study, and negative drug use consequences. The InDUC was used to measure the negative consequences in life from using drugs or alcohol.

Spiritual well-being, religiosity, depression, and anxiety were not found to be associated with methadone serum levels. This was not an unexpected finding. Methadone levels vary greatly according to physiology and dosage. Some of the patients in the study were having their doses adjusted because they were new to treatment and were increasing doses to therapeutic levels, some were attempting to taper off as they were ending MMT, and a few needed doses adjusted due to pregnancy. Also, the sample was underpowered with many not having recent tests noted in the chart. In addition, the sample dates were often distant from the study dates. Since methadone levels may only occur on a yearly basis, the variance in dates is large (about half more than three months remote from the study date) and thus, validity is threatened.

Spiritual well-being, religiosity, depression, and anxiety were not found to be associated with urine results that had been positive for illicit drugs at least once during the month prior to entrance into the study. Only one other study investigating urine and

psychosocial functioning was located, an intervention study of methadone maintenance patients who used heroin plus cocaine and were new to treatment. The study did not report methadone results but did find depression correlated with positive cocaine urine screens at the end of 25 weeks (Ghitza, Epstein and Preston, 2007). These patients were different than the participants in this current methadone study who were rarely found to test positive for cocaine.

Spiritual well-being and religiosity were not found to be associated with negative drug use consequences. Since religiosity was not correlated to the InDUC and the RWB subscale did not correlate it is not surprising that the SWBS does not associate with the InDUC. Anxiety was associated with the InDUC in the regression model, but not depression. Anxiety and depression strongly correlated independently to the InDUC so further investigation of this finding was completed. Anxiety and depression are strongly correlated, and when either is alone in the regression model they each associate. However, overall, the model accounts only for a very small amount of variance in the relationship. Thus, depression and anxiety are weakly related to negative drug use consequences.

### **Implications of the Findings**

Spirituality was an important factor to the study participants. The patients noted the importance of spirituality in their lives and scored a moderate level of spiritual well-being. The moderate SWBS scores for this sample, despite lengthy therapy, may indicate the lack of importance this aspect of therapy is given in the overall program. Some patients disclosed that they were seeking churches to attend, but were not able to find one that they were comfortable attending. Others noted they were not attending church due to their drug use and feelings of it being unaccepted. At intake, about 2/3 of the sample indicated that spirituality would have a positive impact on their treatment.

Interestingly, 17% of the charts were uncharacteristically incomplete in this area. And those that were complete had varying answers suggesting that the questions were interpreted differently. The spiritual history may not be as important as other topics to those evaluating the person for MMT. This finding is consistent with the literature that notes counselors may focus too narrowly on physical and psychological needs and neglect the spiritual (Chapman, 1996). It would likely be beneficial to the person in MMT to contemplate spirituality and even to make available a list of places beyond AA and NA groups where the person could go to learn more about spirituality. Some persons with addiction feel excluded by religion and helping them find ways of being included could be beneficial.

Religiosity was important to the study sample, with formal practices being less important than being aware of God. That is, people believe in God and engaged more often in praying rather than attending church or reading scripture. Substance abuse interferes with the practice of religion in many cases, making persons feel guilty about having acted against religious beliefs, and driving the person away from church, prayer, or reading scriptures.

Although spirituality was important to the patients it did not appear to be a priority in MMT. This is similar to a study of psychiatric outpatients which found that cultural values and beliefs were not taken into consideration by the mental health care providers (Awara & Faseyl, 2008). Another researcher noted that mental health care has become mechanistic and less holistic and neglects the spiritual aspects (Greasley, Chiu, & Gartland, 2001). Care providers often lack a spiritual care focus. In part, this is due to constraints of the health care system. Counselors are directed to not probe spiritual issues if the client chooses not to answer those questions on intake assessment. They also are not to bring up spirituality, but only to follow the direction of the client should they raise the issue. Thus, spirituality is not utilized as a tool with client because it is a

subject that is not discussed. In essence, they are directed not to give holistic care unless the client specifically asks for it. A fear of imposing beliefs or proselytizing seems to be an important factor in client care.

Nurses do not recognize the need or meet the spiritual needs of patients (Ledger, 2005). Although most patients have a spiritual assessment completed, nurses often feel ill prepared or uncomfortable asking patients about their spirituality and then giving spiritual care. In part, the lack of giving spiritual care is due to a lack of training and knowledge development (Creel, 2007; Koslander & Arvidsson, 2005). The topic of spiritual care often lacks adequate definition and time allotment in nursing schools and faculty may be uncomfortable teaching about the topic (Lemmer, 2002). Nurses often have difficulty providing spiritual care because they lack adequate knowledge and they are not sure what spirituality and spiritual care mean (Greasley, et al.,2001).

Spiritual care acknowledges the importance of the person and their meaning and purpose in life and involves being compassionate towards the person (Greasley, et al., 2001). Spiritual care interventions can include praying, being with a patient and listening, reading religious text, referring to a spiritual leaders, (Naranyanasamy & Owens, 2001; O'Brien, 2008). Studies have shown that not all patients want spiritual care and care should be tailored to the individual and their desires (Taylor & Mamier, 2005). However, being present with a patient and listening are methods that are appropriate for everyone, even when they profess no spirituality or religiosity. Spirituality is inherent to holistic nursing practice.

Spirituality, along with anxiety and depression, are factors in opiate dependence and inversely correlate with negative consequences. Religiosity also was found to negatively correlate with both depression and anxiety. Nurses need to be knowledgeable and comfortable providing spiritual care to the addicted population.

Providing patient directed spiritual care may increase the spiritual well-being of a person

and anxiety and depression may be reduced and indirectly reduce the negative consequences.

### **Importance of the Findings**

Addiction is a common and devastating problem in our society. Nurses believe in providing spiritual care as part of the holistic care of the person with addiction. Yet, nurses often lack the knowledge or ability to provide spiritual care. This study was the first to examine spirituality, religiosity, depression, and anxiety together in a methadone maintenance population. The knowledge gained will inform the care of the patient with addiction undergoing MMT.

This study gained new knowledge regarding the person on MMT and the inter-relatedness of the basic core of the person. Spirituality and formal religious practices inversely correlated with anxiety and depression (psychological factors). Anxiety, depression and existential well-being correlated with negative drug use consequences (sociocultural/developmental factors). The negative consequences of addiction are many and continue to add to the poor health of the individual, family, and society at large. This demonstrated the importance of examining multiple factors associated with the patient receiving MMT.

It is important that nurses assess and care for the spiritual needs of patients. If nurses and others were able to provide care that assists the person to contemplate spirituality, the spiritual well-being of the person might be improved. Helping a person to practice religion can help lead them towards the sacred and thus help increase spirituality. Those in MMT demonstrated moderate spiritual well-being. By improving spiritual well-being, the basic core of the person would become stronger to fight anxiety and depression. Through improved understanding of the spiritual factor and how these variables all relate, better care can be provided.

## Limitations of Study

This study has limited generalizability due to the convenience sampling methods and the specificity of the MMT population. This sample has characteristics specific to the location of the clinic that are not generalizable to all populations, such as the lack of cocaine usage among the heroin using sample. Also, though this sample included current addiction to an opiate, an argument can be made that this is not an addicted population suffering all the issues of illicit drug use. When seeking opiates on the street the person is risking police arrest, engaging in criminal activity, receiving a drug of possible unknown quality, may not be able to obtain drugs on a regular basis, and are not receiving medical attention. Those in a clinic are receiving a legal drug in a controlled setting on a regular basis. They also have access to limited medical care in the clinic. The distribution of methadone in the controlled setting is different from street drug usage.

Bias occurred in the study due to the self-selection method and due to the fact that the characteristics of those who volunteered likely differ from those who elected not to participate. Some of those who declined participation stated they were not interested in spirituality and disclosing confidential information. Some people stated they participated after hearing others say the study was not difficult and even interesting. Some people who declined early in the study approached the investigator after several weeks of observing her presence, suggesting trust became a factor in participation, which may be useful information in future study designs. Volunteers were reminded that not participating in the study would not affect their treatment at the clinic.

Psychiatric co-morbidities limited willingness or ability of some patients to participate. The majority of co-morbidities encountered were depression and anxiety. In some cases clinic staff indicated a person should not be approached for the study due to



their psychological status. Court ordered program participation could have been an issue, however, clinic staff disclosed that none of the current patients were under court order to be in treatment. Some patients reportedly chose to be in treatment so they would appear more favorably in a court setting. Participants were given multiple chances to continue or stop participation in the study. Consenting was always completed in a private setting and the patient had to verbally demonstrate understanding before participating.

Pregnancy may have affected study results. Responses could have been affected by feelings of another child or being a new mother. Information was not collected on pregnancy history or emotional response to the pregnancy. The few who were pregnant may have responded differently to the questionnaires as they anticipated the future.

The study also did not control for spiritual history. The participants may have had prior treatment that included spirituality and thus may have been different than those not treated in the past. Also, religious history may cause differences in responses on the tools.

Self-report computerized measures also limited the validity of the data. People may have given what they consider to be socially acceptable responses when reporting sensitive information, such as negative consequence, despite the fact that the study used confidential computer questionnaires. The participant also may not have been completely comfortable with the computerized assessment or may have become fatigued during the process. The presence of the investigator in the room may also have skewed results by causing discomfort or social desirability bias.

The study tools themselves had some limitations. The SWBS was biased towards a Western, Christian population. The extensive use of the tool spoke to its usefulness, however, no groups are defined as having a "low" spiritual well-being raising

the question about what the numbers mean (Paloutzian & Ellison, 1991/2009). The RBB has no comparison groups in the literature. The STAI used the word “keenly” that was not meaningful to the younger participants.

The reliance on spiritual history data recorded by addiction counselors in the medical record also resulted in missing information. This missing information was due to incomplete forms, unwillingness of the patient to disclose this information at intake, or failure to document or elicit information from the patient. It was interesting that this area often appeared to be the most incomplete of any area of the intake assessment form.

### **Relationship of the Findings to the Conceptual Framework**

In Neuman’s model, nurses care for the patient in a holistic manner, viewing the client as a system interacting with the environment (Neuman & Fawcett, 2002). The client system has a basic structure at the core that is composed of basic survival factors and flexible lines of defense which protect the client. Within the basic structure and the defense system are five variables; physiological, psychological, sociocultural, developmental, and spiritual. The variables in this current study were drawn from the five variables.

The InDUC included five subscales: physical, interpersonal, intrapersonal, impulse control and social responsibility consequences. These categories related to physiological, psychological, sociocultural and developmental variables in Neuman’s model. As an example, negative consequences included loss of relationships, jobs, money, and housing, developmental and sociocultural variables affected by drug use. This current research demonstrated the interrelatedness of the system with the many relationships between spirituality, religiosity, depression, anxiety and negative consequences.

In Neuman's model the basic structure is constantly interacting with internal and external environmental stressors. These stressors are affecting the lines of defense. Substance addiction was the stressor in the current study. Addiction correlated with moderate levels of spiritual well-being and lower levels of formal practices of religion. These variables also correlated with anxiety and depression which is consistent with the study of teachers which examined work stressors (Mahan, et al., 2010). This study found that work environment stressors were positively associated with anxiety and depression. The study also found coworker support, a socio cultural variable, inversely related to anxiety and depression, psychological factors.

Research using Neuman's model in addiction was not located. However, a middle-range theory has recently been proposed. Cazzell (2008) developed a theory adapted from Neuman's model to explain adolescent vulnerability to addiction and places at which intervention could occur. It notes that Neuman's theory allows for prayer to be used to strengthen a patient's basic core (DiJoseph, 2005). This literature supports Neuman's theory.

Understanding the factors in the client system will help in planning addiction treatment. Strengthening the spiritual factor will reinforce the physiological, psychological, sociocultural, and developmental factors. For example, treating spirituality could help treat the whole client because increased spirituality is related to less depression and anxiety and also to less negative drug consequences. It is important to look at the person as a holistic system and to treat the various factors of the system to strengthen the entire system.

### **Implications of the Research for Nursing Practice and Education**

Spirituality is a factor in maintaining health and well-being and is an important resource for nurses to utilize in patient care. Continued knowledge development is

needed to understand spirituality and religiosity in addiction. This study illuminated aspects of these topics for the practicing nurse. Increased knowledge will lead to better care if the knowledge is used to help the person contemplate their spirituality and religiosity and to take action to increase these factors to lead toward the sacred. Nurses need to understand spirituality and how to give spiritual care and to be comfortable when doing so.

This current study noted less consistency in charting spiritual history than the other portions assessed in the intake assessment. One reason for this was that counselors are instructed not to probe spiritual or religious topics if the client does not offer answers to the questions. Very few charts indicated that the patient refused to answer. Other possible reasons of no information may include discomfort with the topic by either the patient or the counselor, or a lack of importance attributed to a spiritual history by the addiction counselors completing the assessment. Counselors and nurses need to understand that spirituality and religiosity are important to the majority of persons with addiction. Also, improvements need to be made in assessment and subsequent care to improve nursing practice and promote the well-being of the person with addiction.

Addiction is another area where nurses need to be knowledgeable. Increased knowledge of practicing nurses through addiction education has been demonstrated through research. In one study nurses decided to improve depression and substance abuse screening using evidence-based practice measures (Valente & Nemec, 2006). It was found that a one-hour educational program improved nurses' knowledge as measured with a pre-test and post-test. And, practice improved with an outcome measure of screening rates in ambulatory and home-care visits. Screening rates improved to 100% which likely positively impacted the number of clients being treated for depression and alcohol issues. Another study noted that practicing nurses benefited

from formal addiction training (Marcus, 1999). However, one study concluded that although intervention of education helped to raise knowledge bases, attitude of nurses towards persons with substance abuse problems did not improve (Swenson-Britt, Carrougher, Bruce, & Brackley, 2000). This lack of improvement in attitude occurred despite the design of the education which was to improve knowledge of addiction instill hope by recognizing that many do recover from addiction. The findings indicated that the milieu of the unit was more important in nurses' attitudes. Knowledge itself does not lead to improved attitude.

Furthering understanding of spirituality in addiction may help in patient care as we seek to treat substance use and abuse. Helping a person to develop their innate capacity to transcend the self and to experience meaning and purpose in life is part of holistic nursing care. Through including spirituality in caring for the person, nurses can make a difference in the well-being of the person.

### **Suggestions for Future Research**

This study demonstrated relationships among opioid abusers that need further exploration. A longitudinal study examining clearly conceptualized aspects of religiosity and spirituality when entering treatment with repeated measures over time looking for changes would add to understanding. Also, an interventional study using spiritual techniques such as being present and listening to a patient, prayer, or meditation in an attempt to affect spirituality and help the person towards transcendence would be useful. Also, studies exploring the spirituality of the care provider and the patient and how they relate could increase understanding of how to match providers to patients to most effectively help the person grow spiritually during addiction. Better spiritual intervention could aid in recovery and prevent relapse of patients. Spirituality is innate and helping a

person to grow spiritually during addiction is important and needs to be further explored to ensure the best care is given to the patient.

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## Appendix A Permission for SWBS

Linda Piacentine  
Marquette University College of Nursing  
530 N. 16th St.  
Milwaukee, WI 53233

17 December 2009

Dear Ms. Piacentine:

Permission is granted for you to post the "Spiritual Well-Being Scale" (SWBS) on your restricted website in order to conduct research titled "Spiritual Well-Being, Depression, Anxiety, and Continued Drug Use Among Persons Undergoing Methadone Therapy." This permission for electronic use is subject to the following terms and conditions:

1. Craig W. Ellison and Raymond F. Paloutzian possess, reserve, and own all rights to the posted scale. Copyrights to the posted scale are assigned to them. After the posting of the Spiritual Well-Being scale is made, any subsequent posting of it, either in connection with this present research or beyond, is at the discretion of Drs. Ellison and Paloutzian and requires their written permission.
2. The posted scale shall contain the copyright byline that appears at the bottom of the English version of the Spiritual Well-Being Scale. The posted scale should also include a statement of the form "posted with permission of the copyright holders."
3. Neither Drs. Ellison nor Paloutzian nor Life Advance shall be held, in combination nor individually, liable nor responsible for liabilities or charges incurred in connection with use of the scale or any postings of it.
4. Data collected with the scale shall be made available at no cost and on a continuing basis to Drs. Ellison and Paloutzian for purposes of documentation and assessment of the statistical properties of the scale, including but not necessarily limited to reliability, validity, and norms.
5. This permission is in effect only from the start to the conclusion of the data collection period for your research project noted in this letter: November 2009 to October 2010, with total N = 140 (each subject will have the scale administered once only).
6. This permission is in effect for this project only. Scale use for other purposes requires additional permission.
7. Restricted access: Only authorized subjects will have access to or take the scale on the restricted website, and they will be authorized to take it only a prescribed number of times. The scale will not be downloaded or copied. The scale will not be accessible or available at the close of data collection, and shall be removed from the website at the close of data collection.

The cost per copy authorization for electronic copies is the same as for paper copies as indicated on the website [www.lifeadvance.com](http://www.lifeadvance.com). The base price/copy authorization for N=1-50 is \$2.25/copy. For N=51-100 it is \$2.00/copy; continuing in discounted steps as indicated on the website down to a cost of \$1.00/copy for N = 251 or higher. The N of 140 is in the \$1.75/copy-administration range. Students receive a half-price discount.

Payment should be made through the above website for the number to be used in the research. Also, use the contact/email function and write a message to Life Advance indicating what the payment is for, making reference to this letter, and documenting the total N.

Your signature at the bottom of this letter indicates acceptance of the above terms. Please sign and date this letter in the space below and return it to me at the following address: Raymond F. Paloutzian (LA), 3715 Ardilla Drive, Santa Barbara, CA 93105. You may also fax it to me at the US phone number 805-565-6233, or (preferably) you may return it to me by email as a PDF attachment. Keep a copy for your files.

Sincerely,

Raymond F. Paloutzian, Ph.D.

Craig W. Ellison, Ph.D.

---

Linda Piacentine (Signature)

(Date)

## Appendix B The Religious Background and Behaviors Questionnaire

3. Have you ever in your life:

	Never	Yes, in the past but not now	Yes, and I still do
a. Believed in a sacred being or supreme reality?	1	2	3
b. Prayed?	1	2	3
c. Meditated?	1	2	3
d. Attended religious services regularly?	1	2	3
e. Read or studied scriptures or holy writings regularly?	1	2	3
f. Had direct experiences of a sacred being or supreme reality?	1	2	3

Source: Adapted from Center on Alcoholism, Substance Abuse and Addictions, 1994.

### THE RELIGIOUS BACKGROUND AND BEHAVIORS QUESTIONNAIRE

1. Which of the following best describes you at the present time? (Check one.)

\_\_\_ Atheist: I do not believe in a sacred being or supreme reality, such as God, Brahman, Allah, or nirvana.

\_\_\_ Agnostic: I believe we can't really know about a sacred being or supreme reality, such as God, Brahman, Allah, or nirvana.

\_\_\_ Unsure: I don't know what to believe about a sacred being or supreme reality, such as God, Brahman, Allah, or nirvana.

\_\_\_ Spiritual: I'm not religious, but I believe in a sacred being or supreme reality, such as God, Brahman, Allah, or nirvana.

\_\_\_ Religious: I practice religion and believe in a sacred being or supreme reality, such as God, Brahman, Allah, or nirvana.

2. For the past year, how often have you done the following? (Circle one number for each line.)

	Never	Rarely	Once or twice a month	Once or twice a week	Almost daily	More than once a day
a. Thought about a sacred being or supreme reality	1	2	3	4	5	6
b. Prayed	1	2	3	4	5	6
c. Meditated	1	2	3	4	5	6
d. Attended religious services	1	2	3	4	5	6
e. Read scriptures or holy writings	1	2	3	4	5	6
f. Had direct experiences of a sacred being or supreme reality	1	2	3	4	5	6

Appendix C  
Patient Health Questionnaire 9-Item Depression Module

**Patient Health Questionnaire**

This questionnaire is an important part of providing you with the best health care possible. Your answers will help in understanding problems that you may have. Please answer every question to the best of your ability unless you are requested to skip over a question.

Name \_\_\_\_\_ Age \_\_\_\_\_ Sex:  Female  Male Today's Date \_\_\_\_\_

1. During the last 4 weeks, how much have you been bothered by any of the following problems?
- |  | Not<br>bothered          | Bothered<br>a little     | Bothered<br>a lot        |
|--|--------------------------|--------------------------|--------------------------|
| a. Stomach pain.....   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Back pain.....  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Pain in your arms, legs, or joints (knees, hips, etc.)..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Menstrual cramps or other problems with your periods.....   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Pain or problems during sexual intercourse.....             | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f. Headaches.....  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g. Chest pain.....   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| h. Dizziness.....  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| i. Fainting spells.....  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| j. Feeling your heart pound or race.....                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| k. Shortness of breath.....                                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| l. Constipation, loose bowels, or diarrhea.....                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| m. Nausea, gas, or indigestion.....                            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
2. Over the last 2 weeks, how often have you been bothered by any of the following problems?
- |  | Not at all               | Several<br>days          | More<br>than half<br>the days | Nearly<br>every<br>day   |
|--|--------------------------|--------------------------|-------------------------------|--------------------------|
| a. Little interest or pleasure in doing things.....  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>      | <input type="checkbox"/> |
| b. Feeling down, depressed, or hopeless.....   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>      | <input type="checkbox"/> |
| c. Trouble falling or staying asleep, or sleeping too much.....  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>      | <input type="checkbox"/> |
| d. Feeling tired or having little energy.....  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>      | <input type="checkbox"/> |
| e. Poor appetite or overeating.....  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>      | <input type="checkbox"/> |
| f. Feeling bad about yourself — or that you are a failure or have let yourself or your family down.....  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>      | <input type="checkbox"/> |
| g. Trouble concentrating on things, such as reading the newspaper or watching television.....  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>      | <input type="checkbox"/> |
| h. Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>      | <input type="checkbox"/> |
| i. Thoughts that you would be better off dead or of hurting yourself in some way.....  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>      | <input type="checkbox"/> |

FOR OFFICE CODING: Som Dis If at least 3 of #1a-m are "a lot" and lack an adequate bio/ explanation.  
Maj Dep Syn if answers to #2a or b and five or more of #2a-i are at least "More than half the days" (count #2) if present at all).  
Other Dep Syn if #2a or b and two, three, or four of #2a-i are at least "More than half the days" (count #2) if present at all).

file:///c:/outdep/project/mk2783/etude2783/mf-version/iphq1-3ortq.doc - 14/11/2005

1

Appendix D  
Permission for STAI

**Re: MGAgree: State-Trait Anxiety Inventory for Adults from Linda Piacentine (Order # 10529)**

info@mindgarden.com

Sent: Monday, December 07, 2009 5:11 PM

To: Piacentine, Linda

Hello Linda,  
Thank you for your order and for completing the Online Use Agreement.  
Please feel free to proceed with your study.  
Best,  
Valorie Keller  
Mind Garden, Inc.

Quoting linda.piacentine@marquette.edu:

Name: Linda Piacentine  
Email address: linda.piacentine@marquette.edu  
Phone number: 414-288-5696  
Company/Institution: Marquette University  
Order/Invoice number: 10529  
Order Date: 12/6/2009

Project Title: Influence of Spiritual Well-Being on Depression and Anxiety Among Person's with Opiod Addiction  
Instrument Name: State-Trait Anxiety Inventory for Adults

I will compensate Mind Garden, Inc. for every use of this online form.

I will put the instrument copyright on every page containing question items from this instrument.

I will remove this form from online at the conclusion of my data collection.

I will limit access to this online form and require a login or uniquely coded url. Once the login/code is used that evaluation will be closed to use.

The form will not be available to the open Web.

I will include info@mindgarden.com on my list of survey respondents so that Mind Garden can verify the proper use of the instrument.

**Method for Restricting Access:**

The instrument will be on a secure website for which the researcher will access at the time of the assessment. The researcher will be the only one accessing the website for the respondents to answer on the computer while the researcher is present in the room.

Electronically signed on 12/5/2009 by Linda Piacentine.

## Appendix E

CASAA Research Division\*

**Inventory of Drug Use Consequences (InDUC-2R3)**

**INSTRUCTIONS:** Here are a number of events that people sometimes experience in relation to their use of alcohol and other drugs. Read each one carefully, and indicate how often each one has happened to you DURING THE PAST 3 MONTHS by circling the appropriate number (0 = Never, 1 = Once or a few times, etc.). If an item does not apply to you, circle zero (0).

FOR OFFICE USE ONLY	
_____	Study
_____	ID
_____	Point
_____	Date
_____	Raid
DEC10- Revised 104 3 Pages	

During the <u>Past 3 Months</u> , about how often has this happened to you? Circle one answer for each item:	Never	Once or a few times	Once or twice a week	Daily or almost daily
1. I have had a hangover or felt bad after drinking or using drugs.	0	1	2	3
2. I have felt bad about myself because of my drinking or drug use.	0	1	2	3
3. I have missed days of work or school because of my drinking or drug use.	0	1	2	3
4. My family or friends have worried or complained about my drinking or drug use.	0	1	2	3
5. I have enjoyed drinking or using drugs.	0	1	2	3
6. The quality of my work has suffered because of my drinking or drug use.	0	1	2	3
7. My ability to be a good parent has been harmed by my drinking or drug use.	0	1	2	3
8. After drinking or using drugs, I have had trouble with sleeping, staying asleep, or nightmares.	0	1	2	3
9. I have driven a motor vehicle while under the influence of alcohol or other drugs.	0	1	2	3
10. Drinking or using one drug has caused me to use other drugs more.	0	1	2	3
11. I have been sick and vomited after drinking or using drugs.	0	1	2	3
12. I have been unhappy because of my drinking or drug use.	0	1	2	3
13. Because of my drinking or drug use, I have lost weight or not eaten properly.	0	1	2	3
14. I have failed to do what is expected of me because of my drinking or drug use.	0	1	2	3

DUOFUS- Revised 7/04 Page 1 of 3



During the <b>Past 3 Months</b> , about how often has this happened to you? Circle one answer for each item:	Never	Once or a few times	Once or twice a week	Daily or almost daily
15. Drinking or using drugs has helped me to relax.	0	1	2	3
16. I have felt guilty or ashamed because of my drinking or drug use.	0	1	2	3
17. While drinking or using drugs I have said or done embarrassing things.	0	1	2	3
18. When drinking or using drugs my personality has changed for the worse	0	1	2	3
19. I have taken foolish risks when I have been drinking or using drugs.	0	1	2	3
20. I have gotten into trouble because of drinking or drug use	0	1	2	3
21. While drinking or using drugs, I have said harsh or cruel things to someone.	0	1	2	3
22. When drinking or using drugs, I have done impulsive things that I regretted later.	0	1	2	3
23. I have gotten into a physical fight while drinking or using drugs.	0	1	2	3
24. My physical health has been harmed by my drinking or drug uses.	0	1	2	3
25. Drinking or using drugs has helped me to have a more positive outlook on life.	0	1	2	3
26. I have had money problems because of my drinking or drug use	0	1	2	3
27. My marriage or love relationship has been harmed by my drinking or drug use.	0	1	2	3
28. I have smoked tobacco more when I am drinking or using drugs.	0	1	2	3
29. My physical appearance has been harmed by my drinking or drug use	0	1	2	3
30. My family has been hurt by my drinking or drug use.	0	1	2	3
31. A friendship or close relationship has been damaged by my drinking or drug use.	0	1	2	3
32. I have spent time in jail or prison because of my drinking or drug use.	0	1	2	3
33. My sex life has suffered because of my drinking or drug use.	0	1	2	3

DUOFUS- Revised 7/94 Page 2 of 3

During the <b>Past 3 Months</b> , about how often has this happened to you? Circle one answer for each item:	Never	Once or a few times	Once or twice a week	Daily or almost daily
34. I have lost interest in activities and hobbies because of my drinking or drug use	0	1	2	3
35. When drinking or using drugs, my social life has been more enjoyable.	0	1	2	3
36. My spiritual or moral life has been harmed by my drinking or drug use.	0	1	2	3
37. Because of my drinking or drug use, I have not had the kind of life that I want.	0	1	2	3
38. My drinking or drug use has gotten in the way of my growth as a person.	0	1	2	3
39. My drinking or drug use has damaged my social life, popularity, or reputation.	0	1	2	3
40. I have spent too much or lost a lot of money because of my drinking or drug use.	0	1	2	3
41. I have been arrested for driving under the influence of alcohol or other drugs.	0	1	2	3
42. I have been arrested for other offenses (besides driving under the influence) related to my drinking or other drug use.	0	1	2	3
43. I have lost a marriage or a close love relationship because of my drinking or drug use.	0	1	2	3
44. I have been suspended/fired from or left a job or school because of my drinking or drug use.	0	1	2	3
45. I have used drugs moderately, without having problems.	0	1	2	3
46. I have lost a friend because of my drinking or drug use.	0	1	2	3
47. I have had an accident while using or under the influence of alcohol or drugs.	0	1	2	3
48. While using or under the influence of alcohol or drugs, I have been physically hurt, injured, or burned	0	1	2	3
49. While using or under the influence of alcohol or drugs, I have injured someone.	0	1	2	3
50. I have broken things or damaged property while using or under the influence of alcohol or drugs.	0	1	2	3

DUOFUS- Revised 7/94 Page 3 of 3

Appendix F  
Advertising Flyer

**You can make a difference in the future  
of addiction therapy.  
Be a part of a research study.**

A Marquette University researcher wants to learn about an individual's spirituality and religious beliefs when in drug therapy. The information gathered in this study may be used to help develop future treatment options for persons undergoing addiction treatment.

You will be asked to participate in 1 research session about 30 minutes in length conducted at the clinic.

In order to participate, you must:

- Be at least 18 years old
- Be able to read and understand English
- Answer survey questions

Volunteers will receive a \$15 fast-food gift card for their time.

If you are interested, please ask the clinic staff for more information.

Appendix G  
Clinic Newsletter Article

**Be a part of a  
research study.**

A Marquette University Graduate Student is looking for volunteers for a research project here at the clinic. The researcher is studying spirituality and religious beliefs among clinic attendees. The purpose of the research is to gain understanding about spirituality and how it relates to sadness, anxiety, and drug use.

Volunteers will be asked to participate in 1 confidential research session answering online survey questions. The session will be held at the clinic and be about 30 minutes long. Volunteers who consent to the study and answer all the questions on the surveys will receive a \$15 fast-food gift card for their time.

In order to participate, you must:

- Be at least 18 years old
- Be able to read and understand English
- Answer survey questions

The researcher will be here 1 day a week. If you are interested, please ask the clinic staff for more information.

Appendix H  
Study Consent Form

MARQUETTE UNIVERSITY  
AGREEMENT OF CONSENT FOR RESEARCH PARTICIPANTS

*Spiritual Well-Being, Depression, Anxiety, and Continued Drug Use  
Among Persons Undergoing Methadone Therapy*

Linda Piacentine  
College of Nursing

You have been invited to participate in this research study. Before you agree to participate, it is important that you read and understand the following information. Participation is completely voluntary. Please ask questions about anything you do not understand before deciding whether or not to participate. Whether or not you choose to participate in this research project will have no impact on the care you receive at this clinic.

**PURPOSE:** The purpose of this research study is to gather information regarding spiritual well-being, depression, and anxiety in people who are undergoing methadone maintenance therapy. You will be one of approximately 108 participants in this research study.

**PROCEDURES:** You will be asked to complete 5 questionnaires about your religious background, your spirituality, consequences of drug use, and any anxiety or sadness that you may be feeling. The questionnaires will be given as online surveys on a laptop computer. The investigator will be available in the room to answer questions and help you if you need it.

The investigator will also gather information from your clinic record including your medical, psychological, drug use, and spiritual history. Also gathered from your chart will be information on your recent methadone levels and drug use.

**DURATION:** The one study session may take about 30 minutes.

**RISKS:** The risks associated with participation in this study include risks that you would encounter in everyday life. This includes the risk of distress when thinking about your spiritual and religious life and your emotional health. If you become uncomfortable with the questions during the study you may skip a very small number of questions or withdraw from the study.

**BENEFITS:** There is no direct benefit to you from participating in this study. Your participation may help provide a better understanding of spirituality among persons who have abused drugs. Understanding this better may help to develop future treatment programs.

**CONFIDENTIALITY:** All information you reveal in this study will be kept confidential. The only exception to this is if your answers raise concern that you may be at risk of harming yourself. This concern would need to be shared with the appropriate clinic staff.

All your data will be assigned an arbitrary code number rather than using your name or other information that could identify you as an individual. Data collected on the survey will be kept confidential with only the Principal Investigator knowing the code for the data. When the results of the study are published, you will not be identified by name. All computer information will be kept password protected until it is destroyed. The data will be destroyed by deleting electronic files an indefinite number of years and shredding paper documents 2 years after the completion of the study. Your research records may be used for future research purposes.

Your research records may be inspected by the Marquette University Institutional Review Board or its designees, and (as allowable by law) state and federal agencies.

**COMPENSATION:** If you complete all the questionnaires you will be given a \$15 fast-food restaurant gift card for your participation in the study. If you complete at least 3 but not all the questionnaires, you will be given a \$5 gift card. The gift card will be given to you when you complete your participation in the study.

**VOLUNTARY NATURE OF PARTICIPATION:** Participating in this study is completely voluntary and you may withdraw from the study and stop participating at any time without penalty or loss of benefits to which you are otherwise entitled. To withdraw from the study you will need to inform the researcher that you are stopping your participation. To withdraw any data that has been collected prior to your withdrawal, you will need to provide a written letter, dated and signed, to the researcher stating you would like all data withdrawn from the study.

**CONTACT INFORMATION:** If you have any questions about this research project, you can contact Linda Piacentine at Marquette University, phone number 414-288-5696 or via email at Linda.piacentine@marquette.edu. If you have questions or concerns about your rights as a research participant, you can contact Marquette University's Office of Research Compliance at (414) 288-7570.

**I HAVE HAD THE OPPORTUNITY TO READ THIS CONSENT FORM, ASK QUESTIONS ABOUT THE RESEARCH PROJECT AND AM PREPARED TO PARTICIPATE IN THIS PROJECT.**

\_\_\_\_\_  
Participant's Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Participant's Name

\_\_\_\_\_  
Researcher's Signature

\_\_\_\_\_  
Date

Appendix I  
Demographics/Clinic Assessment Form

Demographics

Study date: \_\_\_\_\_  
 Clinic Admit date: \_\_\_\_\_  
 Employment: \_\_\_\_\_  
 Age: \_\_\_\_\_ Sex: \_\_\_\_\_  
 Marital Status: \_\_\_\_\_ Partner live with you? \_\_\_\_\_  
 Primary language: \_\_\_\_\_  
 Trouble reading English: \_\_\_\_\_  
 Race/Ethnic background  
     White       Black       American Indian       Asian       Other   
     Hispanic       Non-Hispanic

**Substance Abuse History (from Clinic Biopsychosocial Assessment)**

Why are you seeking treatment at this time?  
 \_\_\_\_\_

Do you currently consume alcohol? Yes  No  If yes, how much? \_\_\_\_\_

What is your primary drug of choice? \_\_\_\_\_ Secondary? \_\_\_\_\_

What is your normal route of administration? \_\_\_\_\_

Have you ever attended any outside support groups? Yes  No  If yes, please describe what benefited you most: \_\_\_\_\_

Have you ever been treated for a substance abuse issue? Yes  No

If Yes, please give type of treatment facility, length attended, reason attended and outcome/responses to treatment:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

**Past and Current Drug History:**

Drugs and alcohol used in the past 24 hours: \_\_\_\_\_

Drugs and alcohol used in the past 72 hours: \_\_\_\_\_

How much and how often do you use? \_\_\_\_\_

Have you made any attempts to reduce or stop your substance use? Yes  No  If yes, please describe: \_\_\_\_\_

What are your expectations/outcomes from this treatment:  
 \_\_\_\_\_

Type of Drug Used	Past History Year of First Use	Current Usage past 30 days		Frequency/length and patterns of use	Route
		Yes	No		
Heroin					
Morphine					
Dilaudid					
Illegal Methadone					
Oxycontin					
Other opiate/opiod					
Benzodiazepines					
Alcohol					
Barbiturates					
Methaqualine					
Amphetamines					
Cocaine					
Marijuana					
Tobacco					
Hallucinogens					
Inhalants					
Others (list)					

Frequency of Use:

- 1 = 1 time or less per week
- 2 = 2 times per week
- 3 = 3-4 times per week
- 4 = 1 time daily
- 5 = 2-3 times daily
- 6 = 4 or more times daily

Most Usual Route of Administration

- 1 = oral
- 2 = Smoking
- 3 = Nasal
- 4 = Non-IV injection
- 5 = IV injection

First Choice: \_\_\_\_\_ Second Choice: \_\_\_\_\_ Third Choice: \_\_\_\_\_

Mental Health History:

\_\_\_\_\_

Medical History:

\_\_\_\_\_



**Spiritual History from Clinic Psychosocial Assessment Form**

Spiritual beliefs, upbringing and values within family of origin and how it affected you:

---



---

Do you have a spiritual belief, or a higher power?  Yes  No If yes, please describe:

---



---

Do you attend formal religious/spiritual practice?  Yes  No

Is it a significant part of your life?  Yes  No

Do you meditate or pray regularly?  Yes  No

How has your substance abuse affected your spiritual aspect of life? \_\_\_\_\_

---

Do you feel your spiritual belief/higher power will have an impact on your recovery?

Yes  No

If yes, please describe: \_\_\_\_\_

---