

Copyright

by

Michael Joseph Shattah

2011

**The Report Committee for Michael Joseph Shattah  
Certifies that this is the approved version of the following report:**

**Quality of Life and the Impairment Effects of Pain  
in a Chronic Pain Patient Population  
as Potentially Moderated by Self-Compassion**

**APPROVED BY  
SUPERVISING COMMITTEE:**

**Supervisor:**

---

Diane Schallert

---

Kristin Neff

**Quality of life and the Impairment Effects of Pain  
in a Chronic Pain Patient Population  
as Potentially Moderated by Self-Compassion**

**by**

**Michael Joseph Shattah, B.B.A.**

**Report**

Presented to the Faculty of the Graduate School of  
The University of Texas at Austin  
in Partial Fulfillment  
of the Requirements  
for the Degree of

**Master of Arts**

**The University of Texas at Austin**

**August 2011**

## Dedication

May all beings enjoy happiness  
and the causes of happiness.

May all be free from suffering  
and the roots of suffering.

Buddha-dharma meditations on *mettā* ('loving-kindness') and *karunā* (compassion)

## **Abstract**

# **Quality of Life and the Impairment Effects of Pain in a Chronic Pain Patient Population as Potentially Moderated by Self-Compassion**

Michael Joseph Shattah, M.A.

The University of Texas at Austin, 2011

Supervisor: Diane Schallert

Due to the subjective nature of pain and the profound debilitating effects of pain for a growing number of people, there are many challenges to approaching and fully addressing its problems. The traditional biomedical model of health limits its treatment focus to the physical components of pain. Biomedicine provides useful and effective short-term relief of bodily symptoms, but usually cannot cure pain that persists in both mind and body over time. Because chronic pain is often accompanied with discomfort, depression, and other significant life impairments, health researchers have recently conceptualized more comprehensive models to address pain. In the bio-psycho-social-spiritual health model, chronic pain is assessed and treated in the context of a person's overall quality of life, considering biological, psychological, social, and spiritual health conditions. This movement towards adopting integrative health care models can also provide patient guidance needed for developing inner resources to adapt to pain, as well as recover from and prevent disease.

Self-compassion comes from a fertile field of inquiry emerging out of a wider conception of health that includes spirituality. The construct is based on three related components that can assist a person living with pain: (a) being kind to oneself while in pain or suffering, (b) perceiving difficult times as shared human experiences, and (c) holding painful thoughts and feelings with mindfulness, instead of over-identification. Measured using the Self-Compassion Scale, it demonstrates positive associations with a variety of health indicators. However, a direct relationship with chronic pain has not yet been examined.

In applying recent research in quality of life (QoL) and self-compassion to a chronic pain patient population, the purpose of this study is twofold: (a) to produce a comprehensive assessment of bio-psycho-social-spiritual QoL conditions (b) to examine differences in QoL with the presence of self-compassion and determine its potential moderating effect on life impairments due to pain. From this project, the QoL conditions that are affected by chronic pain and the moderation effect of self-compassion will be understood better so that more effective treatment and prevention procedures can be developed for people living with pain from long-term disease conditions.

## Table of Contents

List of Tables .....	ix
List of Figures .....	x
Chapter I: Introduction .....	1
The prevalence of pain.....	1
The problems of pain .....	2
Chapter II: Review of the Literature .....	9
Chronic pain: a multidimensional experience.....	9
Models of health and disease for conceptualizing chronic pain.....	10
Biomedical Model of Health and Disease .....	10
Biomedical Diagnoses of Pain .....	11
Biomedical Treatments for Chronic Pain .....	12
The Critical Limitation of Biomedicine: Mind-Body Dualism .	12
Bio-Psycho-Social Model of Health and Disease.....	13
Psychological QoL Conditions and Chronic Pain.....	15
Social QoL Conditions and Chronic Pain.....	19
Bio-Psycho-Social Treatments for Chronic Pain .....	20
Bio-Psycho-Social-Spiritual Model of Health and Disease .....	22
Spiritual QoL Conditions and Chronic Pain .....	24
Assessing Bio-Psycho-Social-Spiritual Health.....	26
Bio-Psycho-Social-Spiritual Treatments for Chronic Pain .....	32
The potential promise of self-compassion for people living with pain .....	36
Self-Kindness and Chronic Pain .....	37
Shared Humanity and Chronic Pain.....	39
Mindfulness and Chronic Pain .....	40
Assessing Self-Compassion.....	45

Chapter III: The Proposed Study .....	46
Hypotheses .....	49
Participants .....	49
Procedures .....	50
Outcome measures .....	51
Statistical analyses .....	56
Appendix A: Models of health and disease comparison chart.....	58
Appendix B: WHOQOL-SRPB facets and items .....	59
Appendix C: Domains and Facets in WHOQOL-BREF and -SRPB.....	60
Appendix D: Announcement of study distributed to pain specialists .....	61
Appendix E: Informed consent .....	62
Appendix F: Invitation for chronic pain patient participation .....	65
References.....	66



## **List of Tables**

Table 1: Facets of the WHOQOL-PDM Pain and Discomfort Module (2008).... 53

Table 2: Factor loadings of Williams & Richardson BDI pain facets (1993) ..... 54

## **List of Figures**

Figure 1: Chronic pain study outcome measures .....	48
---	----

## **Chapter I: Introduction**

### **THE PREVALENCE OF PAIN**

The International Association for the Study of Pain has defined *pain* as “an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage” (Russo et al., 1998). Caused by a variety of adverse conditions, pain is the most common reason for seeking medical help, and accounts for over 80% of all medical office visits (Gatchel, 2005; Gatchel & Turk, 1996; Loeser & Melzack, 1999). Experienced regularly by over 76 million Americans (National Center for Health Statistics, 2006), pain is now considered the “fifth” vital sign of life and is required to be documented in all healthcare settings—along with pulse, blood pressure, core temperature, and respiration—as a significant indicator of physical health and the presence or absence of disease (JCAHO, 2000). With growing population of patients seeking relief, the pain field has gained importance in theoretical and therapeutic efforts. The significance of pain was recognized by Congress, designating 2001–2010 as the Decade of Pain Control and Research. According to the National Institutes of Health (2003), pain research is needed (a) to understand the objective and subjective nature of pain more clearly, (b) to improve diagnosis and assessments, and (c) to develop health promotion interventions beyond medical and surgical treatments to manage and prevent pain and disease. Pain is a critical concern for so many people because it can lead to difficulties in nearly every aspect of their lives. Thus, health researchers and practitioners must consider approaching the problems of pain comprehensively in terms of the causes, contributing factors, and consequences, as well as the need for effective solutions. The focus of this report is to explore these areas on pain as a basis for proposing a study that will test ways to improve patient care and treatment for chronic pain.

## **THE PROBLEMS OF PAIN**

In the field of pain research, at least three related issues must be considered in order to understand, diagnose, and treat chronic pain better: (a) reliance on a medical healthcare model with a focus limited to symptoms of pain in the body; (b) co-existence of chronic pain with significant impairments in both mind and body; (c) likelihood of unsuccessful medical treatment outcomes in chronic pain patients.

A fundamental problem concerning chronic pain is that most patient care procedures are based on a theoretical model of health that limits the focus of treatment to the physical symptoms of pain, without considering mental influences and other potential contributors. Traditionally in biomedical research and practices, pain was considered to indicate either physical or psychological diseases, but not both. Physicians looked at pain as a mechanical phenomenon to be assessed and treated through pharmaceutical or surgical interventions. When improvement was not found, pain was diagnosed as psychosomatic. The cause was considered to be “all in one’s head” and perpetuated by psychological disorders or motivations for secondary gains such as drugs, sympathy, or compensation (Crossley, 2001; Gatchel, 2000; Melzack, 1993).

In the last half century, a theoretical movement has established pain to be more than just an objective mechanism in the body; instead, pain shows evidence of being a subjective experience that affects both mind and body. Chronic pain does not simply correlate with physical pathology as previously thought. Rather, it is found to be unique to each patient and to change over time based on factors such as personality, sensory awareness, beliefs, environmental factors, and genes. Traditional medical assessments focused solely on physical mechanisms give little consideration to these critical influences, thereby severely limiting pain treatment options.

With pain now known to be subjective to each person living with it, a new realm of possible treatments has emerged based on exploring inner resources to live more peacefully with the unpleasantness of pain and its effects. These include cognitive-behavioral therapies (Teasdale et al., 1995, 2000; Turk & Gatchel, 2002) and mindfulness practices (Kabat-Zinn, 1982, 1990; Kabat-Zinn et al., 1985, 1986). Mindfulness is a systematic approach to developing new kinds of control and wisdom in life that is based on tapping into one's capacities for relaxing mind and body in order increase attention, awareness and insight (Kabat-Zinn, 1990). Because pain occurs in the mind as well as the body, a psychological construct of recent interest that is related to mindfulness called self-compassion shows potential promise for pain relief and prevention. Self-compassion involves relating to oneself in ways that promote health through being kind to oneself, recognizing a shared humanity, and maintaining mindfulness in balance during unpleasant times. Studies reveal self-compassion as a beneficial skill that can be developed and used when experiencing difficulties in life (Gilbert & Procter, 2006; Neff et al., 2007a; Pauley & McPherson, 2010). To date, the construct has not yet been considered in a chronic pain patient population. Subsequently, the study proposed in this report is aimed at establishing that self-compassion plays a potential role in helping to solve the problems of pain beyond the limits of traditional medical approaches.

A second significant issue for individuals living with pain involves the profound impairments to overall health. Chronic pain involves not only physical limitations, but a variety of related mental disturbances and resulting unpleasant circumstances. When chronic illness affects both mind and body, boundaries often blur between diseases. This can prevent accurate diagnoses of conditions, if they are diagnosed at all. Chronic pain patients frequently exhibit symptoms of impairment far exceeding that which can be predicted on the basis of known physical disease, with increased reports in functional

disabilities as well as maladaptive responses and behaviors (Bair, 2003; Keefe et al., 2004; Romano & Turner, 1985; Verma & Gallagher, 2000).

A person with chronic pain is likely to experience life impairments involving discomfort and depression. Discomfort is the degree of unpleasantness a person is feeling due to the pain, and is based on four facets: (a) pain control and relief; (b) anger and frustration; (c) vulnerability, fear, and worry; and (d) uncertainty due to physical limitations and difficulties making plans (Mason et al., 2008). When pain and discomfort continue without resolution, concomitant depression is also likely to ensue.

The relationships between pain and depression have been well documented, indicating important implications on treatment outcomes. Depression in a pain population is identified by the degree to which a patient feels sad, is self-critical, and has somatic disturbances related to mental and physical health (Williams & Richardson, 1993). Many of the other severe impairments in those with chronic pain and disease have been attributed partially to depression, which is often not assessed or not treated successfully in the pain patient population at large (Bair et al., 2003; Verma & Gallagher, 2000).

Although self-compassion has not been studied in relation to discomfort and depression in pain patients in the past, a review of recent literature reveals significant associations between self-compassion and the factors that comprise each condition. For example, self-kindness is negatively related to the anger and frustration of self-criticism (Gilbert & Proctor, 2006; Neely et al., 2009; Pauley & McPherson, 2010), symptoms found in discomfort when relief is not readily available (Mason et al., 2004, 2008). Self-kindness also appears to be a likely antidote to the critical self-reproach found in depression (Williamson & Richardson, 1993). Self-reproach includes endorsement of items on the Beck Depression Inventory to indicate feelings of a sense of failure, of being punished, having poor body image, self-accusation, and self-hate (Beck et al., 1996). In

contrast, self-kindness encompasses caring, tenderness, tolerance, and patience towards oneself in times of suffering (Gilbert & Procter, 2006; Neff et al., 2003b; Neff, 2007).

A third significant pain-related issue is an overwhelming evidence of unsuccessful treatment outcomes in individuals with chronic disease conditions. For many patients, persistent pain and associated life impairments— including discomfort and depression— will contribute to and exacerbate each other in cycles that can become more resistant to physical interventions over time. Unfortunately, the reliance on a biomedical model of health limits treatment options for pain to drugs and surgical procedures. Medical approaches generally do not consider other factors that can potentially worsen the pain, or moderate its impairment effects, as in the case of self-compassion. Although a biomedical contribution to short-term pain relief has been enormously useful, the long-term dependence on medical treatments of chronic pain tends to result in improper drug use, ineffective invasive procedures, and the resulting perpetuation of suffering in millions of people everyday (Gatchel, 2005; Turk & Monarch, 2002).

Because of limitations to the medical approach, many researchers and health professionals have reconsidered biomedicine with more comprehensive perspectives of health. A review of relevant literature from the last forty years is quite revealing: when patients are provided with healthcare approaches that treat a person as a whole being, they are more likely to experience successful long-term health outcomes. The findings have contributed to the development of integrative health models that cross barriers between the fields of physical and mental health in the area of chronic pain, using approaches that follow these general objectives: (a) to prevent pain, if possible (b) to reduce its severity or frequency; (c) to improve physical functioning (d) to reduce associated psychological distress; and, ultimately, (e) to improve the overall quality of life (QoL) for people experiencing chronic pain and disease. Achieving improvement in

the QoL for individuals suffering from chronic pain presents a profound dilemma for the clinician, ultimately reflecting a deep dilemma in the paradigm of traditional medicine itself (Kabat-Zinn et al., 1985).

Quality of life is an expansive concept, affected in a complex way by a person's physical health, psychological state, level of independence, social relationships, spiritual beliefs, and relationship to the environment (WHO, 1997). Understanding how pain can affect QoL is a necessary step towards improved care for chronic pain patients, who are among the most avid users of healthcare resources (Mason et al., 2004). In order to improve QoL in a pain population, many organizations including the World Health Organization (WHO) recommend using a holistic health care approach. The WHO establishes QoL as "an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards, and concerns" (p. 1).

Using a wholeness-based approach to health and QoL can provide a detailed map for guiding researchers, clinicians, and patients along well-traveled healing pathways from sickness toward well-being. This more complete conceptual worldview encompasses larger territories that are typically not covered in the traditional medical system as it bridges perceived separations between mind and body, and one's self from source and spirit. Currently, the most comprehensive health model considers four conditions as contributing to a person's QoL: the bio-psycho-social-spiritual health model (Brady, 1999; Johnson & Kushner, 2001; Wachholtz et al., 2007). This approach, along with the preceding bio-psycho-social (Engel, 1977) health model that did not include spirituality, can provide practical, evidence-based solutions to relieve chronic pain and prevent disease.



In order to face the problematic nature of pain, the study proposed in this report will explore the compelling reasons for using integrative models of health to assess QoL in a population of patients experiencing chronic pain. Using a wholeness-based assessment is still relatively novel in healthcare practices, yet it is necessary to understand more clearly what a chronic pain patient undergoes in everyday life. To guide treatment options effectively, a comprehensive assessment goes beyond physical measures to look at other important health indicators that occur simultaneously with the pain. In this study, a focus of inquiry will be on the coexistence of pain with symptoms of discomfort and depression because both conditions are associated with severe impairments to QoL as a whole.

The adoption of an integrative framework into healthcare practices shows additional promise in helping patients develop inner guidance needed to adapt to pain and heal from long-term disease conditions. Although self-compassion is considered a psychological construct, it emerges out of this broader conception of health that recognizes the benefits of spirituality. Research reveals self-compassion to be a potentially useful resource that can help ease suffering in those who experience chronic pain, based on its three components of self-kindness, shared humanity, and mindfulness. Recent studies have established the benefits of self-compassion, finding many positive associations with bio-psycho-social-spiritual QoL indicators, including self-acceptance (Neely et al., 2009), happiness and life satisfaction, as well as social connectedness (Neff, 2003a; Neff et al., 2007a, 2007b).

In applying recent QoL and self-compassion research to a chronic pain patient population, the purpose of the study described here is twofold: (a) to administer a broad-based health assessment in order to investigate the relationships between pain, bio-psycho-social-spiritual QoL, and impairments from discomfort and depression, and (b) to

examine differences in QoL with the presence of self-compassion and determine its potential moderating effect on life impairments due to pain.

Although previous research has not investigated these specific relationships, it is hypothesized that evidence will show that the presence of self-compassion can buffer many life impairments from persistent pain, particularly discomfort and depression. This potential moderating effect is based on the assumption that the negative impact of pain is not amplified or perpetuated through harsh feelings of self-criticism, isolation, and preoccupation with painful sensations, thoughts, and emotions. Instead, self-compassion might prove to be an important piece as part of a whole model to approaching the problems of pain, promoting health, and preventing disease in chronic pain patients.

## **Chapter II: Review of the Literature**

To provide possible solutions to the problems of pain, a review of the research explores three related areas of focus. First, the development of integrative models to conceptualize health and QoL in a chronic pain patient population is discussed. Next, the relationships between chronic pain and QoL conditions is described, with a focus on symptoms of discomfort and depression. Finally, the role of self-compassion as a potential moderator variable that buffers the impairment effects of pain on QoL, discomfort, and depression is considered. As compelling evidence is found showing that self-compassion can reduce the damaging effects from pain, a stronger case will be made for incorporating it into treatment practices to improve health and QoL outcomes in individuals with chronic pain and disease. The research and study is summarized by Figure 1 at the end of this chapter.

### **CHRONIC PAIN: A MULTIDIMENSIONAL EXPERIENCE**

Chronic pain researchers identify pain as a subjective process involving the presence of four broad, interrelated dimensions: (1) nociceptions—pain signals, or “noxious” nerve stimulation, indicating potential disease or physical damage; (2) pain perceptions—conscious awareness to the signs of pain; (3) pain-related suffering—impairments in physical function with resulting maladaptive mental responses; and (4) pain-related behaviors—actions taken while in pain or suffering. Pain-related behaviors include physical expression and verbalization of pain along with associated changes in interpersonal relationships, activity patterns, and drug usage. To understand a chronic pain patient more completely, it is critical to realize that these four dimensions often occur in cycles that can perpetuate throughout a person’s lifetime (Gatchel, 2005; Loeser & Melzack, 1999; Monga & Graobois, 2002).

## **MODELS OF HEALTH AND DISEASE FOR CONCEPTUALIZING CHRONIC PAIN**

For many people, chronic pain and related dimensions of suffering and behaviors significantly impair their lives in ways that are not even being assessed in health care settings. Additionally, these patients have traditionally been treated with an increasing array of invasive procedures that are likely to become less successful over time.

Because the health model used by researchers and health-care providers determines both assessment and treatment options for pain patients (Gatchel, 1996; Melzack, 1993), it is important to understand important limitations to the theoretical approaches used to conceptualize pain- as well as health and disease overall- in order to address fully the problems of chronic pain.

In this section, three commonly used theoretical models of health and disease are presented, reflecting an increased awareness towards a wider, more integrative scope of focus to define health and quality of life overall, from the biomedical to the bio-psycho-social and bio-psycho-social-spiritual models. The movement shows an expanding recognition to the wholeness of oneself in mind and body, and the improved health that comes from experiencing a shared connection with the world. This shift in approaching health as an integrated array of life conditions is particularly promising for chronic pain patients because it places the responsibility for health closer upon oneself to find relief for physical pain, discomfort, and depression, while recognizing that many additional factors can contribute to quality of life as a whole (Larson, 1999; Melzack, 1993; Turk& Gatchel, 2002).

### **Biomedical Model of Health and Disease**

In the eighteenth century, Descartes and his contemporaries helped to establish a theoretical basis for what became the modern biomedical model, or what is commonly called the “medical” approach, or just “medicine.” In this model, health is characterized

as the absence of disease (Larson, 1999), whereas disease itself is reduced to the biological, chemical, cellular, or genetic factors that cause physical deformities in the body (Crossley, 2001). The model assumes that reports of pain result from a specific disease state, with diagnosis confirmed by data from objective tests of physical impairment (Turk & Monarch, 2002). Currently, the biomedical model is the most widely used approach for treating chronic pain patients, although it shows limited success as a pain condition progresses over time.

### ***Biomedical Diagnoses of Pain***

Medical diagnoses assess physical pain due to an injury, trauma, or disease. Pain can be diagnosed in a variety of ways, including by (a) the mechanisms—for example, nociceptive or more extensive neuropathic pain; (b) the pathological disorders or causes of the pain—for example, cancer pain or diabetic neuropathy; and/or (c) the temporal profiles—for example, acute, recurrent, and chronic pain. Acute pain is characterized by momentary and intense sensations (nociceptions) usually experienced after injury, trauma, or surgery. It is an immediate response to tissue damage that serves as a biological signal of actual or potential harm (Gatchel, 2005). The experience of acute pain is considered to be an evolutionary adaptive function that stimulates a person in pain to perform behaviors needed for recovery, such as seeking medical attention, performing self-care activities, and removing oneself from potentially harmful substances. Normally, acute pain subsides as damage from a trauma decreases (Loeser & Melzack, 1999). If pain occurs over a period of more than six months—or longer than expected for its protective biological function to facilitate healing—it is diagnosed as chronic pain.

### ***Biomedical Treatments for Chronic Pain***

The traditional biomedical focus for pain patients has been on the cause of the pain reported, with the assumption of a physical basis to the pain and disease. This narrow definition is formalized into methods of diagnosis and treatments that focus on changing the physical state of the body to relieve the pain (Crossley, 2001). Medical treatments are specifically directed toward correcting the source of pathology (Turk & Monarch, 2002). Once identified, the source is eliminated or blocked by pharmaceutical or other medical interventions such as surgeries, injections, implants, and gene therapies.

The biomedical model has brought valuable advances in understanding pain and disease, producing many sophisticated diagnostic procedures and innovative treatments. Unfortunately, no current medical treatment is available that consistently and permanently alleviates chronic pain for many of those afflicted (Turk & Monarch, 2002). The result is millions of Americans experiencing chronic pain each year, with additional drugs and invasive procedures usually not improving their lives (Gatchel, 2005).

### ***The Critical Limitation of Biomedicine: Mind-Body Dualism***

Despite its significant contributions to research and therapeutic applications, the biomedical model has considerable limitations with regard to conceptualizing and treating chronic pain. The most critical limitation in the medical model revolves around the belief that psychological factors do not play a role in pain or physical disease. Mind and body are thought to operate independently, in a “mind-body dualism.” Within this perspective, the nonmaterial (thoughts, beliefs, feelings) and the material (physical structures and functions, actions) are conceived of as separate and unrelated (Crossley, 2001). Based on this approach, the biomedical view of persistent pain is characterized by a simple dichotomy: the cause of pain can be either physical or psychological, but not both (Turk & Gatchel, 2002). Assuming physical causes, reports of pain are the direct

result of physiological pathology. Assuming psychological causes, reports of pain might be unconscious factors associated with psychopathology, maladaptive personality, or a motive to achieve secondary gain, such as financial compensation or sympathy.

The implications of mind-body dualism have hampered advances towards understanding and treating chronic pain, which is now known to be a multi-dimensional experience with profound disabling effects across a wide range of life functions (Martelli et al., 2004). Although evidence is lacking to support the idea of the dualistic nature to mind and body, it remains persistent. In contrast, recent evidence shows that the applications of more integrative perspectives are necessary to relieve suffering in a chronic pain patient population (Engel, 1977; Gatchel, 2005; Larson, 1999).

### **Bio-Psycho-Social Model of Health and Disease**

The limitations of the biomedical model are due to what many consider to be an outdated, reductionistic view of health that disconnects mind from body and oneself from surrounding environments. In “The need for a new medical model: A challenge to biomedicine” (1977), psychiatrist George Engel’s *Science* report rocked the healthcare industry, describing the modern system in “crisis” resulting from an “adherence to a model of disease no longer adequate for the scientific tasks and social responsibilities of either medicine or psychiatry” (p. 129).

According to Engel, “To provide a basis for understanding the determinants of disease and arriving at rational treatments and patterns of health care, a medical model must also take into account the patient, the social context in which he lives, and the complementary system devised by society to deal with the disruptive effects of illness, that is, the physician role and the health care system. This requires a biopsychosocial model” (Engel, 1977, p. 132).

Engel's groundbreaking essay helped initiate a shift in the health sciences to a much wider scope of focus. As a result, the deeply entrenched position that mental and social processes are unimportant in the onset and progression of physical pain and disease came under attack from a number of emerging health disciplines, including psychosomatic and behavioral medicine, behavioral health, and health psychology (Ogden, 1996). This theoretical movement coincided with an awareness that in order to ensure therapeutic success in reducing chronic pain, psychosocial factors must be considered with physical and pre-dispositional personality traits (Turk & Gatchel, 2002).

Kabat-Zinn (1990) establishes the recognition that we can no longer think about health as being solely a characteristic of the body or the mind because body and mind are interconnected is perhaps the most fundamental development in behavioral medicine. The new perspective acknowledges the central importance of thinking in terms of wholeness and interconnectedness and the need to pay attention to interactions of body, mind and behavior in efforts to understand and treat illness. This transformation in medicine is sometimes referred to as a *paradigm shift*, a movement from one entire worldview to another (Kabat-Zinn, 1990).

With the advent of clinical research emphasizing the importance of mental conditions and external environments in disease, the bio-psycho-social (BPS) model became accepted as the most heuristic approach in treating pain disorders (Gatchel, 2005). From a BPS perspective, diversities in the expression of illness—including degree, duration, and consequences for the individual—are partially accounted for by the interrelationships among variables that shape a person's perception and response to illness (Turk & Monarch, 2002). The model views physical disorders and resulting pain to be the outcome of complex and dynamic interactions in and around an individual—a range of life conditions that can interact with physical pathology to affect a patient's



report of symptoms and subsequent disabilities (Gatchel, 2005). Research supports the importance of psychosocial factors in the cause, amount, and duration of biological pain, along with limited functioning and life impairments (Turk & Monarch, 2002).

### ***Psychological QoL Conditions and Chronic Pain***

Pain and psychological impairments operate in systematic cycles of suffering and maladaptive behaviors. Diminished cognitive function is one of the frequently reported psychological complaints in chronic pain patients (Martelli et al., 2004.) Evidence also shows that cognitive processes can also affect pain. Studies directed toward identifying cognitive factors that contribute to pain have consistently demonstrated that patients' attitudes, beliefs, expectations, personal resources, and experience in the healthcare system affect their reports of pain, activity, disability, and response to treatment (Keefe, 1996; Keefe et al., 2004; Martelli et al., 2004). Cognitive impairments are also associated with mood change and emotional distress along with symptoms of somatic preoccupation, sleep disturbance, fatigue, and perceived interference with daily activities (Ashburn & Staats, 1999; Grahn et al., 1998; Martelli et al., 2004).

**Pain and discomfort.** Psychological discomfort refers to the degree to which a person is not feeling ease or stability due to chronic pain. It is an affective response to the “unpleasantness or upsettingness” one feels about life as impacted by physical pain (Jensen, 1991). Although discomfort is a significant form of suffering commonly found in pain patients, there have been few measures to conceptualize or assess its subjective components. In 1991, Jensen et al. discussed the need for a measure of this affective element of the pain experience that is (a) brief; (b) distinct from other pain dimensions, especially intensity or amount; and (c) representative of the multiple components of pain affect. As a result, the 10-item Pain and Discomfort Scale (PDS) was developed. The

PDS inquired about experiences of feeling “scared,” “tortured,” and “helpless,” and asked about patients’ abilities to bear the pain and enjoy life. Although the PDS initially showed indications of reliability and validity for use in a pain patient population, later studies did not support use of the measure.

A review of the research literature revealed that discomfort measurement scales were considered again in 2004, when Mason et al. discussed the initial stages of developing a Pain and Discomfort Module (PDM) for the World Health Organization Quality of Life (WHOQOL) battery of assessments (Mason et al., 2004). The purpose of the PDM is to identify important psychological facets of chronic pain that are not covered by the generic WHOQOL measure. The authors investigated patient perceptions of chronic pain and its unpleasant effects, revealing four discomfort issues or facets that affect QoL: (a) control and relief; (b) anger and frustration; (c) vulnerability, fear, and worry; and (d) increased uncertainty due to limitations, interferences, and difficulties making plans (Mason et al., 2008).

*Control and relief* reflects the importance of being able to achieve pain relief and physical comfort through the means available to a person. The use of medications is the most common method for control of chronic pain. Although pharmaceuticals can appear to be a panacea for some chronic pain patients, they are not universally effective. As a result, partial rather than full relief is often a more realistic goal with medications (Feinberg, 2005). When relief is beyond one’s control, additional facets of discomfort are likely to occur—anger and frustration; fear and worry; and uncertainty due to limitations. *Anger and frustration* are reported as a loss of patience, being irritable and short-tempered with mood changes. These experiences can have profoundly negative consequences for one in pain, for one’s relationship with others, and for overall QoL. *Vulnerability, fear, and worry* are reported in terms of physical concern from pain and its

associated disability, along with fear about an apparent decreasing efficacy of medications over time. *Uncertainty* describes situations where the outcome is not known and includes concerns associated with making plans, lack of a definitive diagnosis, and general uncertainty about the future. Planning daily life for a chronic pain patient can be problematic because of the possibility of pain or immobility. The consequences of uncertainty include canceling plans and not committing to anything in the event of being unable to honor one's commitments. Also, uncertainty may lead to catastrophic thoughts about a potentially more negative future (Mason et al., 2004, 2008).

**Depression and chronic pain.** As fears, frustrations, and uncertainties in finding pain relief continue without resolution, feelings of helplessness and hopelessness often arise, resulting in a common coexistence of pain and depression (Turk & Monarch, 2002; Turner & Romano, 1984). Decades of research have shown a prevalence of pain among depressed individuals. Also, depression in individuals experiencing pain is higher than when these conditions are individually examined, leading to more severe impairments in QoL than with each condition in isolation.

Romano and Turner (1985) published one of the first critical meta-analysis evaluations of research describing the coexistence of pain and depression. The review of studies examining pain in depressed patients reported 30% to nearly 100%. A majority of published reports showed rates of depressive symptoms higher in chronic pain patients than in other medical populations, with around 50% of patients with chronic pain and depression reporting the two disorders simultaneously, and about 40% becoming depressed sometime after the onset of pain. Since then, more recent reports show the two conditions frequently coexist, with the presence of each negatively affecting the other. Fishbain et al. (1997) also found consistent indicators of depression among chronic pain patients more so than in healthy control patients without pain. The studies have shown

relationships between severity of depression and the intensity of perceived pain, and between the presence of pain and suicide completion. Similarly, Bair et al. (2003) found that between 5% and 85% of patients with chronic pain suffered from significant clinical depression (with an average of 37%), and 65% of patients with depression had clinically significant pain reports. The authors attributed the wide variation of depression comorbidity in chronic pain patients to a number of methodological factors, including heterogeneous study samples, the criteria used for diagnosis of depression, and assessment methods employed (Banks & Kerns, 1996; Fishbain et al., 1997; Poole et al., 2006; Romano & Turner, 1985).

**Orders and outcomes of pain and depression.** Whether depression precedes or follows the development of chronic pain symptoms is not clear. A few hypotheses have emerged, with more evidence for the “consequence hypothesis” (depression follows chronic pain) than for the “antecedent hypothesis” (depression precedes pain). There is also some evidence to support a “scar hypothesis” (history of depression causing vulnerability to pain disorders), which is more likely in pain patients with a diagnosis of major depression disorder than with any other DSM-IV diagnosis. Dohrenwend et al. (1999) showed that patients experiencing depression after the onset of pain did not have family histories different from pain cases without depression or controls without depression. The findings support the consequence hypothesis: The stress of living with chronic pain causes depression, not a pre-morbid personal or familial susceptibility.

Although order may not always be determined, it is known that the combined presence of depression and pain is associated with therapeutic outcomes that are worse than either condition alone (Bair et al., 2003). When pain is moderate to severe, impairs function, and/or is refractory to treatment, it is associated with more depressive symptoms. Similarly, depression in patients with pain is associated with more pain

complaints and physical impairments. Regardless of order, the challenges of identifying and treating depression in patients seeking chronic pain treatments (and vice versa) presents itself in nearly all healthcare disciplines. A fundamental concern of the coexistence is that the presence of depression often results from poor treatment of a pain disorder; but depression also magnifies the negative effects of pain on personal, social, and occupational functioning, which compounds unfavorable outcomes (Wells et al., 1988). Ultimately, depression increases the disabling potential of chronic pain and complicates the rehabilitation of patients with debilitating conditions (Gureje, 1998).

**Shared biological mechanisms of pain and depression.** A growing body of literature has focused on the biological interaction between depression and pain symptoms. Labeled a “depression-pain” syndrome or dyad (Lindsay & Wyckoff, 1981), it implies that the conditions often coexist, respond to similar treatments, and exacerbate one another. A critical evaluation of the relevant literature provides support for the association between the two syndromes, suggesting that coexisting pain and depression may be a final common presentation reached by a number of shared pathways, with implications for concurrent treatment (Romano & Turner, 1985). Because of their shared traits, treatment success demands a comfortable working knowledge of the phenomenology, physiology, and pharmacology of pain and the clinical course of chronic pain disorders, particularly in relationship to depressive illness and its effects on psychosocial conditions (Verma & Gallagher, 2000).

### ***Social QoL Conditions and Chronic Pain***

A pain patient lives in relationships within a community, culture, and country. In determining overall QoL, the bio-psycho-social model takes into consideration these larger social environments that play a significant role in health, disease, and the

perpetuation of pain. At an interpersonal level, chronic pain and associated symptoms of discomfort and depression affect not only the sufferer but also the people who provide primary and emotional support. Research has suggested that the family and social context in which pain persists can play a central role in the maintenance of disease and disability (Turk & Gatchel, 2002).

Nationally, the result of unrelieved pain leads to significant social burdens in healthcare expenditures, disability benefits, lost productivity, and tax revenue. Third-party payers are confronted with escalating medical costs, compensation payments, and frustration when patients remain disabled despite extensive and expensive treatments (Turk & Monarch, 2002). A significant social concern is that up to 85% of the adult workforce will miss work or seek professional care for musculoskeletal pain during the course of their careers (Gatchel, 2004). Although most return to work quickly, the cases becoming chronic account for a disproportionate percentage of total medical costs. For example, although chronic low-back pain develops in only 10% of individuals with acute low back pain, 80% of the total costs that arise from low-back pain can be attributed to the chronic cases (Proctor et al., 2004). Health care expenditures for chronic pain overall are enormous, rivaled only by the cost of wage replacement and social benefits programs for those who do not work because of pain (Loeser & Melzack, 1999).

### ***Bio-Psycho-Social Treatments for Chronic Pain***

Chronic pain has a tremendous effect on the biological, psychological, and social life conditions of a person with treatments requiring a comprehensive healthcare approach. When treating chronic pain, two issues must be considered. First, by definition, the pain is persistent and has failed to resolve spontaneously or respond to treatment. Second, the impact of the chronic pain in a patient's life becomes a sustained pattern of

maladaptive responses, including pain-related suffering and cycles of behaviors (Russo & Brose, 1998). This subjective pain experience is multidimensional and motivated by beliefs, emotions, coping styles, and a variety of other perceptual influences. Responses to pain and treatments can vary widely, reflecting complex BPS interactions among genetic, developmental, and environmental factors.

Although the management of acute pain is often treated effectively with biomedical approaches, chronic pain requires integrative treatments from healthcare professionals that include rehabilitation, therapeutic counseling, and patient education (Russo & Brose, 1998). In the field of rehabilitation, the introduction of a bio-psycho-social model represents an alternative theoretical approach to the dualistic conceptualizations of mind and body that explain disease primarily in terms of discrete biological variables (Gonzales et al., 2000). Rehabilitation is a form of psychoeducation through cognitive-behavioral therapy during which the patient's "normal" behavior is reinforced and "sick role" behavior is not. The learning focus is on physical and social functioning as well as the psychological control of perceived pain and discomfort (Olason, 2003). The cognitive-behavioral therapeutic (CBT) framework also outlines ways to apply comprehensive treatments that integrate social environment with individual biological and psychological conditions. Therapies for chronic pain management based on a CBT model consider pain as a complex experience, influenced not only by its underlying pathology but also by cognitions, emotions, and behaviors (Keefe et al., 2002). Forms of CBT have been used successfully to treat depression in chronic pain patients for over 25 years (Turk, 2002). Mindfulness programs combined with CBT are of particular interest in the chronic pain field because of proven efficacy in treating both chronic pain (Kabat-Zinn, 1982; Kabat-Zinn et al., 1985) and depression (Segal et al., 2002; Teasdale et al., 1995, 2000).

The use of rehabilitation and CBT with chronic pain has led to a proliferation of studies and meta-analyses that confirm both therapeutic and cost effectiveness of BPS treatments for treating chronic pain and disease (Turk & Gatchel, 2002; Turk & Monarch, 2002). When implementing pain treatments, researchers and healthcare providers go beyond theory and general principles to specific details of how to deal with long-term issues of pain. These can include patient motivation, methods to increase treatment, dealing with relapses, the role of opioids, psychological variables predicting chronicity, and the involvement of families and community support (Turk & Gatchel, 2002).

### **Bio-Psycho-Social-Spiritual Model of Health and Disease**

With the advent of a model of health that includes biological, psychological, and social components, considerable progress has been made toward understanding and treating pain from a perspective of wholeness in mind and body in relation to surrounding environments. Along with the development of the BPS health model, a movement has shifted responsibility away from the medical specialist as the sole provider of healthcare and toward the patient's development of inner resources needed for self-care and healing. This is indicated in the rehabilitation and cognitive-behavioral therapy frameworks described previously when discussing BPS treatments. Unfortunately, the BPS model is limited in encompassing the full range of healing potential available to a chronic pain patient because it ignores the potential healing influences of spirituality that many patients and health researchers have evidenced. Therefore, it is necessary to consider more recent developments in conceptualizing health that include spirituality and its associated positive effects on overall QoL as a whole.



In recent years, the linking of spiritual and medical interventions has become widely popular, coupled with the heightened interest in holistic health (Sloan et al., 1999). To date, nearly all documented definitions of holistic health include spirituality. For Rosch and Kearney (1985), the most fundamental principle of a holistic orientation is the importance of *wellness*, which “encompasses not merely the absence of clinical disease but also the existence of a positive state of well-being that embraces the physical, emotional, and spiritual aspects of health” (p. 1406). Similarly, Witmer and Sweeny (1992) proposed a holistic model of health that incorporates concepts from psychology, anthropology, sociology, religion, and education to describe the “total person” approach for improving QoL in proactive and positive ways. In this approach, lifestyles are seen as potentially creating high levels of wellness with components that relate to wholeness in mind, body, spirit, and community: a bio-psycho-social-spiritual (BPSS) model.

In a recent study at Northwestern, Brady et al. (1999) used a large and diverse sample to address questions regarding spirituality in QoL of oncology patients. They found a significant association between spirituality and QoL that remained after controlling for other BPSS core domains. Spiritual well-being was associated with QoL to the same degree as physical well-being, a domain of crucial importance to QoL. Spiritual well-being was also found to be related to the ability to enjoy life even while experiencing painful symptoms of chronic illness, making the domain a potentially important clinical target to include in QoL assessments for chronic pain patients.

A BPSS model incorporates the valid findings and clinical expertise of both the biomedical and bio-psycho-social models, with a broader worldview that includes spirituality and religious practices. The model allows for an intrinsic healing process based on realizing a person’s inner- and interconnectedness. A summary overview of the BPSS model as it compares with the medical model is shown in Appendix A.

### *Spiritual QoL Conditions and Chronic Pain*

In a Gallup and Lindsay (1999) poll, almost 95% of Americans professed a spiritual belief in God or a higher power, a figure that has never dropped below 90% during the past 50 years. Nine out of ten people also pray, most of them (67–75%) on a daily basis. Over two thirds reported that they were members of a church or synagogue, and 40% reported that they attended regularly. For many of these people, spiritual and religious activities provide comfort in the face of long-term illness.

Spiritual QoL conditions are important to consider in the pain field because of their potential to help patients in three ways. First, practices such as daily prayer may serve as a distraction from pain. Second, actively participating in a religious community provides opportunities for material, social, or spiritual support. Third, religious/spiritual practices such as meditation and prayer can create feelings of relaxation that directly alter the pain experience (Wachholtz & Keefe, 2006). Although it is established that religion and/or spirituality are often used by pain patients, findings have been inconsistent. As a result, it is still not fully understood how spiritual constructs are related to mental health, physical health, or QoL in those with chronic pain (Rippentrop et al., 2005).

**Operationally defining spirituality.** Persistent pain is recognized to be a multidimensional experience that influences and is affected by a person's bio-psycho-social-spiritual QoL. Because differences exist in what spirituality and religion mean to individuals, this important set of variables must be considered more deeply to determine how they might affect health and well-being. Brady et al. (1999) summarized recent perspectives on defining religious and spiritual constructs (p. 418):

With respect to definitions, many authors make a distinction between religiosity and spirituality, preferring the term spirituality because it is more inclusive and universal (Moberg, 1979; Hiatt, 1986; Reed, 1987; Elkins et al., 1988; Ley and Corless, 1988). Religiosity has been defined as “participation in the particular

beliefs, rituals and activities of traditional religion” (Elkins et al., 1988, p. 8). It can serve as a “nurturer and channel of expression” for spirituality (Elkins et al., 1988, p. 6). Spirituality, however, has been noted to be “more basic” than religiosity (Elkins et al., 1988), being a “subjective experience that exists both within and outside of traditional religious systems” (Vaughan et al., 1998, p. 497). Spirituality has been defined as “the way in which people understand and live their lives in view of their ultimate meaning and value” (Muldoon and King, 1995, p. 336) and is thought to include “a present state of peace and harmony” (Hungelmann et al., 1985, p. 151). In a similar vein, the spiritual dimension has been said to relate to “the need for finding satisfactory answers to . . . ultimate questions about the meaning of life, illness, and death” (Highfield and Cason, 1983, p. 187).

**Evidence of health benefits from spirituality.** A wide array of definitions for *spirituality* have made it challenging to find its true relationship with physical health and disease. Powell et al. (2003) reviewed methodologically sound studies to evaluate proposed causal links between spirituality and health. The authors found that relationships do exist, but may be both more limited and complex than currently conceptualized. In their analysis, they discovered that most definitions were based on the assumption that spiritual individuals were largely a heterogeneous group of religious people who attend church or go to religious services. Based on that conceptualization, they found that religion and spirituality could have an impact on physical health as a protective resource that prevents the development of disease in healthy individuals and/or as an adaptive resource that buffers the impact of disease on early death.

The authors posited that were it possible to identify individuals who conduct their day-to-day activities in ways that are consistent with the spiritual virtues that their religions teach, the protection against death might be found to be greater than the 25% observed. Such individuals might differ from other “attenders” in their experience of religious services, daily activities, and interactions with others with a style of adapting to stressors that may translate into health-related processes. They also stated that more precise conceptualizations of spiritual virtues such as forgiveness, altruism, hope, prayer,

and volunteerism would help establish better indicators to the relationship between spirituality and its effect on a patient's health (Powell et al., 2003).

Although operational definitions of the spiritual nature of health are still being considered, the Joint Commission on Accreditation for Health Care Organizations (JCAHO) and the Commission on Accreditation of Rehabilitation Facilities both recognize the importance of spirituality in healthcare by mandating that spiritual assessments be conducted and arrangements made for meeting patients' spiritual needs. The JCAHO (2000) requires organizations to define the content and scope of spiritual assessments and the qualifications of those performing the assessment. At minimum, an assessment should determine the patient's denomination, beliefs, and spiritual practices. This information would assist in determining the impact of spirituality, if any, on the care/services being provided and help identify whether further assessment is needed.

### ***Assessing Bio-Psycho-Social-Spiritual Health***

Until recently, there were no comprehensive measures to assess QoL conditions of patient populations—with or without pain. This changed in the 1990s, when the World Health Organization (WHO) began developing the WHOQOL battery of instruments to measure health and the effects of patient health-care services. In creating the measures, they recognized the need to assess well-being and overall QoL, as well as changes in frequency and severity of disease (WHO, 2006). The battery includes the general WHOQOL-100 and a shortened WHOQOL-BREF to measure bio-psycho-social QoL indicators; the WHOQOL-SRPB to measure spiritual, religious, and personal beliefs; and the WHOQOL-PDM, a module to measure pain and disability. The WHOQOL assessments were drafted based on statements made by patients with a range of diseases, by non-diseased people, and by health professionals in 18 collaborating centers around

the world; they have been developed in 20 languages and used in a variety of settings, allowing results from different populations and countries to be compared (WHO, 1997).

Traditionally, generic QoL assessments have not routinely addressed aspects related to religion, spirituality, or existential well-being. Measures of QoL that have included such topics have been specifically designed for individuals at the end of life, or with potentially terminal diseases including cancer and AIDS. Therefore, these assessments have not been applicable to people who might be in better physical health, or suffering from less critical diseases. Other instruments that have addressed religion or spirituality have subsumed such items into the psychological or social domains– similar to the format of the WHOQOL-100 and BREF– making it impossible to investigate the direct contribution of spirituality to QoL.

For these reasons, the WHOQOL-SRPB group (2006) performed an investigation to observe how facets of spirituality, religion, and personal beliefs (SRPB) relate to QoL. Over 5000 people with different worldviews across a variety of cultures and religious beliefs, including atheists and agnostics, were included in the study. The aim was to report on preliminary psychometric properties of an SRPB measure and determine how the facets relate to other domains of QoL. A series of studies were conducted to select the best facets and items for inclusion that were applicable to persons who hold religious beliefs and those who do not. As a result, a total of eight facets were selected with four items each, comprising 32 questions of the WHOQOL-SRPB. These facets operationally define spiritual, religious, and personal beliefs to include (a) spiritual connection, (b) life meaning and purpose, (c) experience of awe, (d) wholeness and integration, (e) spiritual strength, (f) inner peace, (g) hope and optimism, and (h) faith. The SRPB items are provided in Appendix B.

Combining the WHOQOL-BREF and the SRPB creates an assessment that can briefly and comprehensively indicate the bio-psycho-social-spiritual QoL conditions of a chronic pain patient population. The measure can be used to address a full range of patient concerns as well as to indicate the effect of treatment interventions. Psychometric properties of the WHOQOL-BREF and SRPB are described in the methods section, and the domains and facets are listed in Appendix C.

**Assessing pain using self-reports.** The recurring nature of chronic pain can cause considerable bio-psycho-social-spiritual suffering in those who are afflicted, especially when medical approaches show limited clinical effectiveness. Traditionally, patients with the same medical diagnosis or set of symptoms (e.g., chronic back pain, fibromyalgia, neuropathy) have been lumped together and treated in the same way, as though “one size fits all.” However, Turk and Gatchel described pain patients with the same diagnosis as having differential responses to the same treatment. Therefore, a major trend is a move away from the “homogeneity of pain patients myth” toward attempts to match treatment to specific assessment outcomes of patients (1999).

Although physical disease or sickness can often be identified, a persistent challenge in diagnosing and treating pain is the fact that there is no way to determine objectively the presence or absence of it in an person (Gatchel, 2005). Pain is a subjective phenomenon; the only way to know its existence is through expressed, observable behaviors, communication through pain-self-assessment reports, or assessment/evaluation by a professional (Gatchel, 2005; Monga & Grabois, 2002).

With a recognition of its subjective nature, the cornerstone of pain assessment is patient self-report of pain (Martelli et al., 2004). Although there are no objective biological markers of pain, a personal description is considered to provide accurate, reliable, and sufficient evidence for the presence and intensity of pain (AGS, 2002). Self-

reported pain assessments appropriate to the patient's age and abilities can identify onset, location, amount, frequency, character, duration, and any factors known to exacerbate or alleviate pain (Martelli et al., 2004). The existence and degree of nociception, pain sensations, and suffering can be inferred from these sources of information (Loeser & Melzack, 1999).

Patients have been asked to self-report pain with a variety of numerical scales, verbal descriptions, visual depictions, and standardized assessments. A simple and useful method for assessing pain intensity in adults is the Verbal Analogue Scale (VAS), a 0–10 scale in which 0 = “no pain” and 10 = “pain as bad as it can be.” The VAS is sensitive to variations in pain intensity, reactive distress, and treatment effects, and is widely used in clinical settings (Martelli et al., 2004). Unfortunately, because pain experience can vary dramatically from one hour to the next, differences found over time between any two self-reported VAS estimates of current pain may or may not be due to treatment effects or progress in self-care (Jensen et al., 1996). One way to address the problem of VAS pain-report variation is to increase the number of assessments made, and average them. However, the use of composite scores taken over time may not always be practical or even possible.

An alternative to an average of multiple pain ratings is a composite score of multiple pain ratings made at a single point in time (e.g., an average of current pain and memory of worst, least, and usual pain ratings). Jensen et al. (1996) attempted to identify a single pain rating or a composite of ratings obtained at one point in time that demonstrated high predictive validity. The authors found the single best predictor of actual average pain intensity is patient rating of least pain in the previous two weeks. Also, patient rating of usual pain was more strongly associated with actual average pain than was patient rating of current pain. The results suggest that when health researchers

want to assess average pain among chronic pain patients, but cannot obtain multiple measures of pain over time, the most valid measure would be the arithmetic mean of patient-recalled least and usual pain in the last two weeks (Jensen et al., 1996). An accurate pain report can be viewed in relation to a patient's reported discomfort and depression to determine potentially useful treatment options for improving QoL.

Although a "pain and discomfort" facet is included in the WHOQoL (with four relevant items in the full assessment and one item in the BREF form), it was determined by Skevington (1998) to be insufficient in assessing specific QOL conditions of those with chronic pain syndromes. Fortunately, the WHOQOL battery of measures was designed for additional modules pertaining to specific conditions to be developed and included with the generic QoL assessment; thus increasing the instrument's specificity, sensitivity to change, and relevance to the population to which it is being applied (Mason et al., 2004). For these reasons, a supplemental Pain and Discomfort Module (PDM) was developed to assess the impact on QOL relating to chronic pain. The PDM can identify patient needs, evaluate treatment outcomes, and survey pain populations.

**Assessing depression, scaled for somatic symptoms.** The Beck Depression Inventory (Beck et al., 1996) is one of the most widely used self-report assessments for documenting the prevalence of depression symptoms in chronic pain patients, and is a common outcome measure in pain-treatment studies. Because pain has been identified as both a cause and an effect of depression, the test has been subject to a great deal of scrutiny as well as psychometric evaluation in pain populations (Novy et al., 1995; Poole et al., 2006; Romano & Turner, 1985; Williams & Richardson, 1993). Although the nature of the relationship between chronic pain and depression is complex, there exists a significant potential overlap between problems associated with pain and symptoms of depression (e.g., sleep disturbance and work inhibition) that can confound BDI scores



(Love, 1987) and lead to increased misdiagnoses. Because the BDI is frequently used to test theories, notably those exploring the relationship between pain and depression, this overlap has significant theoretical and therapeutic importance.

The difficulty in determining depressed mood and diagnosing depression in chronic pain patients is reflected in the scoring of the BDI because several items that indicate depression (sleep disturbance, decreased libido, fatigue, etc.) also have a somatic content that can be attributed to pain. As a result, the significance of a total BDI score in this population can lead to an overestimation of the prevalence of depression in pain patients when somatic symptoms may in reality have some other origin (Poole et al., 2006; Williams & Richardson, 1993). This somatic-depression debate has led to questioning the usefulness of the total score BDI in assessing depression in chronic pain patients (Novy et al, 1998; Williams & Richardson, 1993).

Williams and Richardson (1993) performed an analysis of BDI scores in a pain patient population to yield three meaningful factors: “sadness about health,” “self-reproach,” and a “somatic disturbance” factor. None of the three factors was significantly correlated with age or with chronicity; nor did men and women differ significantly in their scores. Results from the study indicated that the three independent constructs differ from those obtained from analyses with non-pain samples. According to the authors, this three-factor solution appears to make reasonable psychological sense and further supports the view that somatic functioning in “depressed” pain patients needs to be considered separately from the cognitive and affective domains.

### ***Bio-Psycho-Social-Spiritual Treatments for Chronic Pain***

With the shift from a biomedical model to more integrative frameworks of health, there has been an explosion of interest in effective approaches to pain that consider all of life's interrelated components. Using evidence-based designs, many holistic health and wellness programs have emerged in the last three decades that incorporate a variety of bio-psycho-social-spiritual healing modalities into comprehensive treatments. As a result, a great deal of scientific knowledge has been produced concerning steps and stages of personal pathways to recovery from disease, along with adaptive techniques for improving health and quality of life in a variety of patient populations.

For over 30 years, treatment programs based on a bio-psycho-social-spiritual (BPSS) health model have been used with successful outcomes to treat a wide range of disease conditions involving chronic pain. Multidisciplinary therapeutic applications often include the following attributes: (a) integration of professional healthcare and self-care treatment of the individual as a whole being; (b) rehabilitation in physiological functioning; (c) development of psychological resources to adapt to present pain, while learning to prevent future pain and suffering; (d) combined psycho-educational and experiential formats in group settings (e) individual daily physical and spiritual practices; and (f) personal-orientation approach incorporating contemplation or meditative awareness in mind, body and surroundings.

A few of the earliest and most notable BPSS health treatment programs that involve meditation include Benson's research on the meditative relaxation response with associated cardiovascular benefits (1975 to present); Simonton's integrative oncology treatments linking cancer remissions with mental imagery (1978 to present); Ornish's treatments associating lifestyle changes, yoga practices, and plant-based nutrition with reduction in heart disease (1983 to present); and Kabat-Zinn's Mindfulness Based Stress

Reduction, used for a wide range of life conditions, including medical symptoms, physical and emotional pain, along with discomfort and depression (Kabat-Zinn, 1982, 1990; Kabat-Zinn et al., 1985, 1986).

With an estimated 10 million practitioners in the United States and hundreds of millions worldwide, meditation is now one of the most widely practiced, enduring and researched psychological disciplines (Deurr, 2004). Although used and researched extensively for improved health outcomes, the term “meditation” is often employed in a highly imprecise sense such that its descriptive power is greatly decreased. One underlying reason for the term’s inadequacy is that, in its typical usage, it refers generically to an extremely variable range of practices (Lutz, et al., 2007). Meditation is most often associated with roots in India, but is actually a worldwide practice found in every major religion and in most cultures. Examples include Taoist and Hindu yogas, Jewish Hassidic and Kabalistic *dillug* and *tzeruf*, Islamic Sufism’s *zikr*, Confucian quiet-sitting, Christian contemplations, and in Buddhist meditations. In their traditional settings, such practices are usually embedded in supportive lifestyles (such as ethics) and practices (such as the body postures of yoga) designed to optimize bio-psycho-social-spiritual development as well as reduce and prevent physical disease (Goleman, 1988; Walsh & Shapiro, 2006). One way to look at meditation, described by Kabat-Zinn (in Moyers, 1993) “is as a kind of intrapsychic technology that’s been developed over a couple of thousand years by traditions that know a lot about the mind/body connection.”

According to Lutz et al. (2007), Buddhist contemplative traditions are well suited to the development of a theoretical framework for understanding both meditation and the neuroscience of human consciousness. Unlike many other contemplative traditions, Buddhist traditions tend to offer extensive, highly detailed theories about their practices that can be easily considered within a scientific context. Buddhism developed in a culture

where some type of meditative technique must be employed if one is to advance significantly on the Buddhist spiritual path. Because there were a wide range of techniques to choose from, Buddhist theoreticians recognized the need to specify exactly what techniques were preferred and for what reasons. This emphasis on descriptive precision stems from the central role that various forms of meditation play in Buddhist practice. Their analyses eventually developed into a highly detailed scholastic tradition known in Sanskrit as the *Abhidharma*, a type of Buddhist “psychology” that also includes discussions of epistemology, philosophy of language, the composition of the material world, and cosmology (Lutz et al., 2007).

Mindfulness is based on a central feature of Buddhist meditation practice and philosophy (Hanh, 1996; Kornfield, 1993) that is described by Kabat-Zinn (1982) as a moment-to-moment awareness cultivated by purposefully paying attention to physical sensations as they are changing and other experiences that are often not noticed or sensed. This form of meditation is a systematic development of the basic human capacity to attend intentionally to events, percepts, and cognitions in the field of consciousness and has a generalized applicability within a wide range of perceptual, cognitive, and behavioral contexts that includes but is not limited to pain relief for a range of chronic pain patients (Kabat-Zinn et al., 1985).

The Mindfulness-Based Stress Reduction (MBSR) program began in 1980 for attendance by patients referred for a wide variety of disease conditions. The rationale for the program was to function as a “net” to catch patients who tend to “fall through the cracks” in the health care delivery system, neither improving in their primary medical condition over time nor feeling satisfied with the results of the traditional medical management of their problem(s) (Kabat-Zinn, 1982, p. 32-33). For more than 30 years, MBSR programs have produced results with observed reductions in measures of present

moment pain, negative body image, inhibition of activity by pain, symptoms, mood disturbance, and psychological symptoms, including anxiety and depression. Results have also shown reductions in pain-related drug utilization and increased activity levels. Improvements are independent of gender, source of referral, and type of pain. Improvements observed during meditation training can be maintained up to four years post-meditation training for all measures except present-moment pain (Kabat-Zinn, 1982, 1990; Kabat-Zinn et al., 1985).

The majority of subjects that undergo MSRP report continued high compliance with the meditation practice as part of their daily lives, with a overall 76% rate of completion observed over a four year period, representing a very high of degree of compliance for a population of chronic medical patients, especially considering the intensity of the intervention and its requirements for home practice. Among the most successful compliers, there appeared to be two equal classes of pain outcome: (a) those for whom the pain was greatly reduced or eliminated and (b) those who reported that the pain was unchanged but that they were coping with it differently and therefore it was not as problematic as before the meditation training (Kabat-Zinn et al., 1985, 1986).

Along with the development of Mindfulness Based Stress Reduction, there has been an explosion of interest in the mental health benefits of mindfulness; as a result, the construct has been incorporated into the treatment of a considerable number of disorders. This type of meditation practices, removed from the Buddhist traditions in which they were originally found, has been utilized by western clinicians in a range of mindfulness-based clinical programs that include Mindfulness Based Cognitive Therapy for depression relapse prevention (Teasdale et al., 1995, 2000); Dialectical Behavior Therapy for reducing self-mutilation and suicidal behavior with borderline personality disorder (Linehan, 1993); and Acceptance and Commitment Therapy (Hayes et al., 2004).

Because mindfulness is a relatively new construct in health and social science research fields, general descriptions of the construct were not entirely consistent across investigators and were still being established operationally in the literature (Bishop, 2002). As a result of the fundamental specificity remaining unaddressed, it was not possible to undertake important investigations into the mediating role and mechanisms of action of mindfulness or to develop instruments that allow such investigations to proceed. To resolve this issue, a group of 11 researchers and clinicians in the field held a series of meetings to establish a consensus definition of the term, proposing a two-component model of mindfulness and specified each component in terms of specific behavioral features, experiential manifestations and implicated psychological processes (Bishop et al., 2004). The first component involves the self-regulation of attention maintained on immediate experience, thus allowing for increased recognition of mental events in the present moment. The second component involves adopting an orientation toward one's experiences in the present moment that is characterized by curiosity, openness, and acceptance towards one's experience. In essence, mindfulness includes a process of contact between behavior and experienced events, in the present, and the absence of reactions to these events that are based in judgments or evaluations (Bishop et al. 2004).

#### **THE POTENTIAL PROMISE OF SELF-COMPASSION FOR PEOPLE LIVING WITH PAIN**

Despite a common emphasis of mindfulness, at least in name, among interventions, mindfulness still proves difficult to assess, warranting consideration of other related components (Van Dam et al., 2011). With interest in mindfulness leading to innovative ways of understanding and fostering the health of chronic pain patients, there is another related and central feature of Buddhist practice that has been the subject of relatively little research in chronic pain. This concept is self-compassion, a way of

relating to oneself that is similar to the way one would treat another person undergoing similar difficulties in life. Self-compassion, an important construct that relates to many of the theoretical and practical components of mindfulness interventions, may also play an important role as predictor of psychological health and potential moderator of detrimental effects on quality of life due to chronic pain (Van Dam et al., 2011).

According to Neff (2003b, 2004), self-compassion is not fundamentally different from compassion. We experience compassion when we are touched by the suffering in others rather than ignoring or avoiding it. Self-compassion is a similar, open-hearted way of relating to apparently negative aspects of oneself and painful experiences in life. A growing body of research suggests that self-compassion is associated with improved bio-psycho-social-spiritual health. The construct shows great potential in providing help for people suffering from pain, discomfort, and depression in each of its three primary components: (a) self-kindness, (b) shared humanity, and (c) mindfulness, maintaining a balance in awareness without over-identifying with unpleasant thoughts, feelings, and physical sensations.

### **Self-Kindness and Chronic Pain**

When compassion is experienced for someone else, an open, non-judgmental approach is taken towards the person. As we let others into our lives, feelings of kindness and caring for their welfare arise spontaneously. Self-compassion encompasses a similar form of self-kindness. Individuals who are self-compassionate offer themselves care, especially when confronting their perceived inadequacies and failures. With self-kindness, mistakes are viewed with an understanding attitude in regard to limitations and imperfections, instead of harsh self-criticism (Gilbert & Procter, 2006; Neff, 2003b, 2004; Neff et al., 2007a, 2007b). Self-criticism is considered to be a form of internal

harassment that is stressful and undermining to the self, and is associated with a variety of psychological problems. Recent inquiries suggest that self-critical people have less access to self-to-self thoughts and feelings of being affectionately cared for (soothed), and as a result their self-care capacities have not been sufficiently stimulated, developed, and elaborated (Gilbert, 2004; Gilbert & Irons, 2004). Evidence based on studies of individuals experiencing chronic acne shows that intervention training in reassuring imagery and self-talk designed to foster compassionate self-relating and reduce critical attacks are effective at lowering reported depression, physical symptoms and the shame of having a visible skin disease condition.

Because self-kindness provides warmth and understanding to a person in pain, people with self-compassion have the potential to limit the severity of suffering and maladaptive behaviors associated with the pain as well, rather than berating themselves while experiencing discomfort and depression. The presence of self-kindness shows potential promise in moderating the discomfort associated with chronic pain because it limits the severity of anger and frustration experienced when one is suffering and relief is not readily available (Gilbert & Proctor, 2006; Neely et al., 2009; Pauley & McPherson, 2010). Self-compassion can provide the emotional safety needed to see oneself clearly, so that one is actually better able to identify needed areas of change and growth. In this case, one's motivation would not stem from the need to escape harsh self-criticism, but from the compassionate desire to create health and well-being (Neff, 2004).

Self-kindness also appears to be a likely antidote to critical self-reproach, one of the three factors found in the principal components analysis of depression in chronic pain patients' BDI responses (Williams & Richardson, 1993). Self-reproach includes endorsement of items to indicate feeling a sense of failure, being punished, having poor body image, self-accusation, and self-hate (Beck et al., 1996). In contrast, self-kindness



encompasses self-love, caring, tenderness, tolerance, and patience towards oneself in times of suffering. The kindness in self-compassion allows us to be touched by our own suffering, without ignoring our own pain, we stop to realize “*This is really difficult, I’m going through a lot right now.*” It also means that we desire well-being for ourselves and feel compelled to help heal our own pain (Neff, 2003a, 2003b, 2004).

### **Shared Humanity and Chronic Pain**

When experiencing compassion toward others, feelings of warmth and caring for their welfare arise spontaneously, along with a desire to alleviate their suffering. Self-compassion orients one towards a similar inward approach, a type of open-heartedness, with a softening of boundaries to self and others. With self-compassion, we see our personal experiences in light of a larger, shared human experience. Instead of feeling isolated and separated from others when we fail, we know that everyone experiences similar feelings at times. Realizing this common humanity, we recognize that pains and setbacks— as well as joys and successes— are inevitable experiences of being imperfectly human (Neff, 2003a, 2003b, 2004; Neff et al., 2007a, 2008).

With self-compassion, a person can recognize the experiences of pain, discomfort, and depressed mood as commonly shared by nearly all people sometimes. Compassion is extended to oneself because the individual recognizes his or her interconnectedness and equality with others, not because he or she feels superior or more deserving. Similarly, compassion is not held back from oneself due to feelings of inferiority and lack of worth (Gilbert & Irons, 2004; Neff, 2003b). With self-compassion, we realize that all beings are deserving of compassion and have the ability to become free from suffering, including ourselves (Neff, 2008). Having this perspective can provide a sense of control and relief

from pain. As a result, self-compassion has the potential to moderate the impairment effects of discomfort on QoL in chronic pain patients.

Recognizing a shared humanity, one might feel less isolated or withdrawn. These are common symptoms due to physical limitations of pain, especially in people with symptoms of depression. Knowing that others are also suffering, a pain patient can be less dissatisfied with or pessimistic about overall life conditions. For these reasons, self-compassion has the potential to buffer the “sadness about health” factor of depression found in pain patients (Williams & Richardson, 1999). Self-compassionate beings do not ignore their own setbacks and suffering; instead, they recognize their difficulties, along with desires to find ways to overcome the obstacles. Rather than feeling separated with pain and sadness, they see their lives in light of others– and wish all beings health, happiness, and freedom from suffering (Neff, 2003b, 2004; Neff et al., 2008).

Pauley and McPherson (2010) explored the meaning and experiences of self-compassion for individuals with depression and anxiety to find a number of participants found that having a sense of common humanity felt useful based on their actual experience of knowing other people who had had either depression or anxiety. For some participants, the realization that other people had recovered from an experience of psychological disorder meant that they felt it was possible for them to do so and helped them feel less isolated and inadequate (Pauley & McPherson, 2010).

### **Mindfulness and Chronic Pain**

A benefit of framing personal experiences in light of shared human ones is that it reduces the tendency for “over-identification,” when one’s sense of self becomes so immersed in subjective emotional reactions that he or she is carried away by exaggerated feelings. Losing one’s balance of awareness through over-identification makes more

adaptive emotional responses or mental interpretations inaccessible (Bennett-Goleman, 2001; Neff, 2003a, 2003b). With self-compassion, a person takes the position of an observer toward oneself, helping to break the cycle of over-identification. Ultimately, this more objective stance allows people in pain to put personal experiences into a larger perspective—especially when comparing their situations to those who are far worse off—so their suffering is seen with greater clarity (Neff, 2004).

For these reasons, self-compassion is said to incorporate the construct of mindfulness (but to be operationally different than just mindfulness), with an open state of awareness in which one does not avoid pain, nor run away with it (Neff, 2004; Kabat-Zinn, 1982). Self-compassion requires taking a balanced approach to negative experiences so that painful feelings are neither suppressed or exaggerated (Neff et al., 2007a). Having a mindful balance provides the mental space needed to observe unpleasant sensations, thoughts, and feelings objectively as they arise, while still being aware of and connected to them. According to Neff (2004), an individual with self-compassion will not ignore pain; instead the person must pay attention to it in order to give self-kindness, without getting carried away by the pain.

A common confusion exists between self-compassion and self-pity (Goldstein & Kornfield, 1987). With self-pity, individuals take on a “poor me” attitude that emphasizes separation from others; they become so immersed in their own problems they forget that nearly everyone has similar problems. As a result, people with self-pity can get carried away with their feelings and over-dramatize them. In contrast, self-compassion frames one’s experience in light of common human experience, while simultaneously providing greater objectivity and perspective (Neff, 2004).

Research has shown this objectivity found in mindfulness to have a direct influence on perception of pain signals, which can relieve and reduce discomfort in

chronic pain patients. There is anatomical and physiological evidence for three interacting components of the pain experience: these are termed sensory-discriminative, motivational-affective, and cognitive-interpretative (Kabat-Zinn, 1982). *Nociceptive* pain (acute physical signals) stimulation appears less responsible for production of chronic pain than previously thought. Instead, responsibility is more likely to be the *neuropathic* pain that lies in one's widely distributed neural network underlying cognitive, emotional, and sensory as well as motor mnemonic systems embedded in a person experiencing pain (Martelli et al., 2004).

According to Kabat-Zinn (1982), dramatic accounts exist in research literature of a complete uncoupling of the sensory pain from the affective and interpretive components of pain, with a resulting loss of an alarm reactivity to the pain. The experiences of practitioners in mindfulness meditation suggest that a similar uncoupling is learnable via voluntary attentional control initiated from internal and intentional cues within the nervous system. "The cultivation of detached observation of the pain experience may be achieved by paying careful attention to and distinguishing the actual primary sensations as they occur from moment to moment as separate events from any accompanying thoughts, worries, and fears about the pain" (Kabat-Zinn et al., 1985). This type of meditation facilitates an attentional stance towards proprioception known as detached observation that appears to cause an "uncoupling" of the sensory dimension of the pain experience from the affective/evaluative alarm reaction and reduce the experience of suffering via cognitive reappraisal (1985). For these reasons, the mindfulness component in self-compassion is likely to provide a buffering effect to the cognitive vulnerability and uncertainty as well as the emotional distress for individuals living with chronic pain.

Because mindfulness requires one to take a balanced approach to emotional experiences, neither running away with, nor running away from one's moments of

unpleasant awareness, the construct of self-compassion is an emotionally positive self-attitude that can protect against the negative consequences of self-judgment, isolation, and over-identification, such as that found in depression (Gilbert & Procter, 2006; Neff, 2004; Neff et. al, 2007a, 2007b). Having compassion for oneself involves taking a balanced perspective on negative self-relevant feelings, thoughts, and sensations so that personal pain is neither suppressed and denied, nor exaggerated and dramatized. An ability to maintain perspective on negative emotions instead of running away with them tends to lessen the intensity of anxious feelings when they arise (Neff et al., 2007a). Thus it appears that self-compassion may operate as a useful emotional regulation strategy that allows for greater perspective on one's situation to facilitate the adoption of actions that change oneself or the environment in effective ways (Neff, 2004).

Monitoring one's stream of consciousness mindfully over time can lead to increased cognitive complexity as reflected by an ability to generate differentiated and integrated representations of cognitive and affective experience. Thus, the development of mindfulness can result in a greater capacity to distinguish feelings from bodily sensations unrelated to emotional arousal and to understand and describe the complex nature of emotional states. Similarly, the development of mindfulness is likely to be associated with a greater capacity to see relationships between thoughts, feelings and actions and to discern the meanings and causes of experience and behavior (Bishop, 2002; Bishop et al., 2004).

Mindfulness approaches help an individual become more aware of thoughts and feelings and to relate to them in a wider, decentered perspective as impermanent mental events rather than as reflections of the self or as necessarily accurate reflections on reality (Teasdale et al., 1995). Thus, if undesirable thoughts are recognized simply as thoughts, one will be better able to disengage from them since no action will be required (i.e., since

the thoughts are not “real,” there is no goal to obtain and thus no need to ruminate to find a solution). Depressive rumination is described as a repetitive form of thinking, in which one repeatedly and in an abstract-evaluative way ponders about oneself, and about the possible meaning, causes, and implications of one’s sadness and depressed feelings (Raes, 2010). This reduction in ruminative thinking that can occur with the adoption of a decentered perspective explains why mindfulness training reduces the risk of relapse in recurrent major depression (Segal et al., 2002; Teasdale et al., 1995, 2000).

When mindfulness is practiced on a daily basis by formerly depressed individuals, evidence indicates they can continue to maintain skills relevant to depression relapse prevention. Because the practice of mindfulness is often an intrinsically positive experience, they will continue to be reinforced for this activity, and are likely to persist in practicing the relevant skills. Such persistence is particularly important in relapse prevention in depression where patients have to prepare for coping with an event of unknown and uncertain onset that may not occur for months or even years after recovery from the acute episode. Depressive relapse often occurs when patients fail to take appropriate remedial or coping activity at an early stage of relapse, when control over depression is likely to be relatively easy to obtain. Mindfulness training helps individuals become more aware of their thoughts and feelings from moment to moment, whether those experiences are pleasant, unpleasant, or neutral. This reduces the tendency of those prone to depressive relapse to become locked into the ruminative cognitive cycles. The 'turning towards' potential difficulties, rather than 'looking away' from them, is likely to facilitate early detection of signs of potential relapse in depression, and so to increase the chances that remedial actions will be implemented at a time when they are likely to prove most effective (Teasdale et al., 1995, 2000).

## **Assessing Self-Compassion**

Self-compassion means being kind and understanding towards oneself in instances of pain or failure rather than being harshly self-critical; perceiving difficult experiences as part of a larger human experience rather than isolating oneself; and holding painful thoughts and feelings in mindful awareness rather than over-identifying with them. A measure has been developed by Neff (2003a) made up of six subscales. Mean scores on the six subscales (Self-Kindness and Self-Judgment; Common Humanity and Isolation; Mindfulness and Over-Identification) are averaged to create an overall self-compassion score. Initial scale validation research for the Self-Compassion Scale (SCS) (Neff, 2003a) indicated that all six subscales were highly inter-correlated, and a confirmatory factor analysis determined that a single higher-order factor of self-compassion explained these inter-correlations.

Initially, the structure of the self-compassion construct was interpreted to indicate that self-compassion is best considered a second-order trait that arises from a combination of sub-traits, rather than a preexisting trait that leads to greater mindfulness, along with more kindness toward self and shared humanity (2003a). Since that time, the construct of self-compassion has been more usefully seen as a set of skills that people can develop to facilitate mental health, rather than as a static personality trait or set of sub-traits (Gilbert & Procter, 2006; Neff et al., 2007a, 2007b; Pauley & McPherson, 2010).

Van Dam et al. (2011) explored the relative predictive ability of both mindfulness and self-compassion in relation to symptom severity and QoL in those with mixed anxiety and depression and found that self-compassion is a robust predictor accounting for as much as ten times more unique variance in the dependent variables than mindfulness. The authors concluded that nature of the facets to self-compassion (common humanity, mindfulness, and self-kindness) capture a broad construct representing the

interdependent nature of suffering, the benefits of equanimity, and the utility of being gentle with oneself and others (Van Dam et al., 2011). Although the growing amount of research conducted with the SCS is encouraging, more work needs to be done to explore the relationships of self-compassion to biological, psychological, social and spiritual functioning, particularly in people experiencing chronic pain and related suffering. This study I describe in the next chapter is designed to further that aim.



### **Chapter III: The Proposed Study**

A review of the research shows significant progress has been made in developing integrative models to assess and treat chronic pain and disease, yet many patients are still provided with a medical approach that does not assess or address the negative effects of pain on overall quality of life (QoL) conditions. This finding is particularly disconcerting when considering the prevalence of discomfort and resulting depression that can both result from and contribute to pain. Because chronic pain is subjective, it affects some people more than others in their suffering and maladaptive behaviors. Therefore, it is the intention of this study to assess a wide population of chronic pain patients and find relevant bio-psycho-social-spiritual variables that might contribute to or limit the impairment effects of pain on QoL.

Until recently, pain patients in medical settings were rarely provided with guidance to develop inner resources— such as self-compassion— that can be used to adapt to pain, improve health, and prevent future pain and disease. Recent inquiries into self-compassion reveal it to be potentially valuable in buffering the harmful effects of chronic pain, based on its three primary components of self-kindness, shared humanity and mindfulness. The rationale is that while discomfort, depression and impairments in QoL (the dependent variables in this study) are positively linked with higher reported pain symptoms (the independent variable), the strength of the relationship weakens with reported increases in self-compassion (the moderating variable).

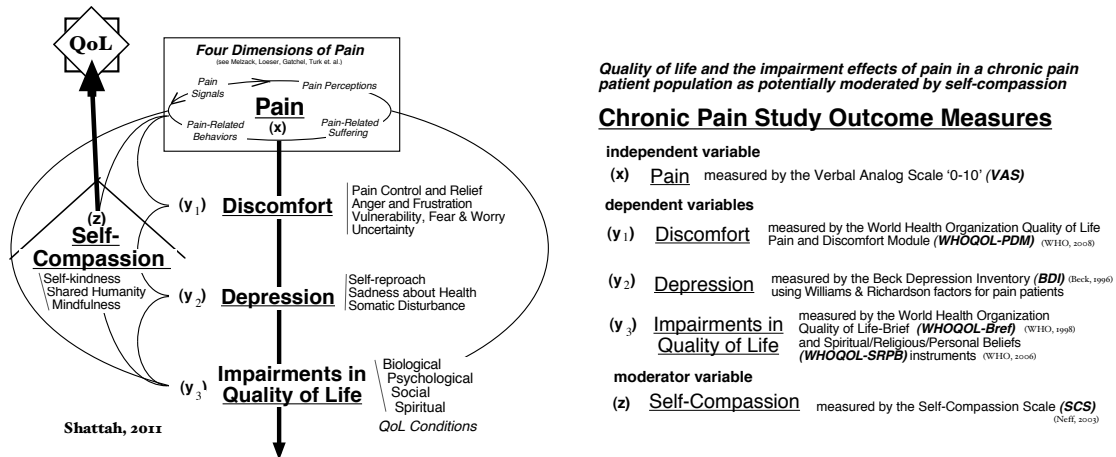
My review of research reveals that self-compassion has not yet been examined in a pain-patient population. Also, the specific relationships examined in this study, self-compassion with pain, discomfort, depression, and QoL have not been investigated. Therefore, it is my intention to provide evidence showing that self-compassion can play a role in moderating life impairments due to pain; this is because the negative impact of

pain is not amplified or perpetuated through self-criticism, isolation, and preoccupation with painful sensations, thoughts, and emotions.

To test the proposed relationships, the constructs of interest have been described and operationally defined in the literature review. In addition, relevant instruments are presented in the methods section that can reliably measure important outcome variables explored in this study, as summarized in Figure 1.

Figure 1

*Chronic pain study outcome measures*



## **HYPOTHESES**

**Hypothesis 1:** Self-compassion (z) will moderate the impairment effects of pain on discomfort (y1), resulting in lower overall WHOQOL-PDM scores in the respondents with higher self-compassion as compared to those with lower self-compassion, given similar levels of pain reported (x).

**Hypothesis 2:** Self-compassion (z) will moderate the impairment effects of pain on depression (y2), resulting in lower BDI scores overall in the respondents with higher self-compassion as compared to those with lower self-compassion, given similar levels of pain reported (x).

**Hypothesis 3:** Self-compassion (z) will moderate the impairment effects of pain on quality of life (y3), resulting in higher WHOQOL-BREF and SRPB scores overall in the respondents with higher self-compassion as compared to those with lower self-compassion, given similar levels of pain reported (x).

## **PARTICIPANTS**

Individuals from a variety of backgrounds and medical histories with chronic pain will be invited to participate in an online survey inquiring about how pain has impacted their quality of life. In order to ensure sufficient power at the .8 level, it was determined by using the Sample Power SPSS module that at least 80 participants will be needed.

*Recruitment.* Potential participants will be recruited from medical centers and clinics across the country that treat chronic pain patients. Announcements of the study will be distributed to select health organizations and professionals that specialize in treating chronic pain patients and directly to medical patients being treated by a physician for a chronic pain condition (See Appendix D). Targeted specialists will include physicians, psychologists, social workers, mental-health counselors, physical therapists,

occupational therapists, and licensed oriental medical practitioners (acupuncturists) involved in treating chronic pain. Each treatment center that signs up to take part in the study will designate one person as contact for me. This person will see that the program is promoted and that patients participate to ensure reliable data collection.

*Inclusion criteria.* Selection requirements for the participants in this study include (a) age 18 or older, (b) experienced pain for at least six-months, (c) consulted a physician for the pain condition at least once, (d) ongoing treatment under a physician’s care, (e) functional literacy in English, (f) ability to use a computer and the internet, and (g) agreement to the informed-consent process. Exclusion criteria include conditions that could prevent full participation and completion of the study.

*Informed consent:* Participants who meet the inclusion criteria will be informed that that (a) they are volunteers in the study and will not be paid for their participation, (b) their choice to participate in the study or not will have no effect on the care received in medical services and treatments, and (c) they are to be treated in accordance with the “Ethical principles of psychologists and code of conduct” (APA, 1992). See Appendix E for a copy of the informed consent.

## **PROCEDURES**

Potential participants will be given invitations (see Appendix F) to go to a website and complete the surveys inquiring about their pain and how it affects their Quality of Life. They will be informed that (a) the battery of assessments can be completed at home or another private location that offers secure internet access (b) the assessments will take between one and two hours to complete, and (c) breaks can be taken as needed.

## **OUTCOME MEASURES**

Standard demographic measures will be obtained from the participants, including ethnicity/race, age, gender, socioeconomic status, marital status, education, diagnoses, durations and general locations/types of pain. Participants will then be instructed to complete the following self-report assessments:

**WHOQOL- Brief Assessment (BREF) and Spiritual, Religious and Personal Beliefs (SRPB)**. The core WHOQOL-100 instrument can assess Quality of Life in a variety of situations and population groups. The measure has 100 items relating to 24 facets (four items each) that relate to four larger QoL domains of physical, psychological, social relationships and environment, along with four items relating to overall QoL and general health. Because of its length, the WHOQOL-100 may be too long for practical use with some patients that have limited functioning. Therefore, the 26-item WHOQOL-BREF was developed as a short-form assessment of the four domain-level profiles. To provide a broad measure that was analogous to the longer version, one item from each of the 24 facets contained in the WHOQOL-100 along with two items from the “Overall Quality of Life” and “General Health” sections were included (WHO, 1996, 1998).

Analysis of the WHOQOL-BREF shows domain scores to be very similar to those found for the WHOQOL-100, which displays high discriminant validity, content validity, and test-retest reliability. Domain scores produced by the WHOQOL-BREF correlate at about 0.9 with WHOQOL-100 domain scores (Skevington et al., 2004; WHO, 1997). The WHOQOL-BREF domain scores show psychometrically sound properties of discriminant validity, content validity, internal consistency (Cronbach’s alpha: physical health, 0.80; psychological health, 0.76; social relationships, 0.66; and environment, 0.80), and test re-test reliability (Skevington, 2004a; WHO, 1998). Test criteria were found to be good or excellent, justifying the use of this instrument with a range of

patients with chronic and acute pain (Skevington, 1998). Analyses show the measure performs according to international standards and can be used with a wide variety of patient populations (Skevington, 2004b).

The WHOQOL-SRPB is a widely used measure to assess how facets of spirituality, religion and personal beliefs (SRPB) relate to quality of life (QoL). It is comprised of eight facets, with four items each, for a total of 32 questions. These facets operationally define spiritual, religious, and personal beliefs to include (a) spiritual connection, (b) life meaning and purpose, (c) experience of awe, (d) wholeness and integration, (e) spiritual strength, (f) inner peace, (g) hope and optimism, and (h) faith. The SRPB items are provided in Appendix B.

Analysis of the SRPB showed it to be highly correlated with all of the other bio-psycho-social domains measured by the WHOQOL ( $p < .01$ ), with the strongest correlations found between Spirituality and the Psychological and Social domains as well as with overall QoL. When all of the domain scores were entered into a stepwise hierarchical regression analysis, all of the domains were shown to contribute to overall QoL, explaining 65% of the variance. Evidence also showed that the SRPB facets stand as an independent construct, and are relatively distinct from the other BPSS quality of life domains involving (Bio)Physical, Psychological and Social health (Skevington et al., 2004a; WHO, 1997).

**WHOQOL- Pain and Discomfort Module (PDM).** The PDM is a self-administered multidimensional subjective assessment of pain-related discomfort and related effects on QoL. To develop the 16-item measure, Mason et al. (2008) used cognitive interviewing procedures for determining new survey instrument items related to chronic pain that were relevant, comprehensive, comprehensible, and easy to use. Potentially important items were pilot-tested using a cross-sectional survey of 216

persons with chronic pain to investigate the construct validity and internal consistency of the “best” four items to represent each of the four most important facets concerning the unpleasant effects of pain on QoL. The pain and discomfort facets identified include: (a) control and relief; (b) anger and frustration; (c) vulnerability, fear, and worry; and (d) increased uncertainty due to limitations, interferences, and difficulties making plans (Mason et. al., 2008). Important psychometric properties are presented in Table 1.

Table 1

*Facets of the Pain and Discomfort Module for the WHOQOL-PDM (2008)*

<b>Facet</b>	<b>PDM Items</b>	<b>Corr. range</b>	<b>Chron alpha</b>
Pain relief	616, 613, 617, 615	.33–.56	.77
Anger and frustration	622, 627, 623, 625	.47–.76	.84
Vulnerability, fear, worry	632, 633, 635, 638	.43–.75	.81
Uncertainty	642, 644, 647, 645	.44–.70	.85

***Verbal Analog Scale for Pain (VAS).*** Patients will be asked to rate the least and usual levels of pain they have experienced in the last two weeks by using the Verbal Analog Scale (VAS) from 0–10, where 0 = “no pain” and 10 = “pain as bad as it can be.” Jensen et al. (1996) suggested that when clinicians or researchers want to assess average pain among chronic pain patients but cannot obtain multiple measures of pain over time, the most valid measure is the arithmetic mean of patient-recalled least and usual pain in the last two weeks.

***Beck Depression Inventory (BDI).*** The Beck Depression Inventory (BDI) (Beck, et al., 1996) will be administered to all patients to assess general depression severity. The inventory consists of 21 items written to reflect a variety of cognitive, somatic, and affective symptoms of depression. The reliability and validity of this inventory as a

measure of general depression severity has been supported by many studies over the years. Because of its sound psychometric properties, the BDI is one of the most widely used inventories for assessing depression in pain patients (Morley et al., 2002; Novy et. al., 1995; Williams & Richardson, 1993).

As pain has somatic symptoms that can be erroneously interpreted as signs of depression, the significance of a total BDI score in a pain-patient population is not always clear. The relationships among individual factor scores and measures of pain, mood, cognition, and physical functioning indicate that the use of the total BDI score might be misleading as to the nature and degree of depression in this group of patients. Williams and Richardson (1993) supported the view that somatic functioning in depressed pain patients needs to be considered separately from cognitive and affective domains in order to yield more-relevant information about symptoms of depression in pain patients. The authors performed a principal components analysis of the BDI to yield three meaningful factors when assessing chronic pain patients for depression, as shown in Table 2.

Table 2

*Factor loadings of Williams and Richardson measurement model (1993)*

<b>Sadness about Health</b>		<b>Self-reproach</b>	<b>Somatic disturbance</b>
Somatic thought	Dissatisfaction	Sense of failure	Loss of appetite
Sadness	Indecisiveness	Guilty feeling	Weight loss
Social withdraw	Loss of libido	Self-Hate	Sleep disturbance
Pessimism	Self-punishment	Self-accusation	Fatigability
<u>Not used in factor loads:</u>	Crying spells Irritability	Punishment Body Image	Work inhibition



**Self Compassion Scale (SCS).** The Self-Compassion Scale (Neff, 2003a) was developed to measure the three main components of self-compassion based on six subscales with responses given on a 5-point Likert rating scale from “*Almost Never*” to “*Almost Always*.” The 26-item measure includes the 5-item Self-Kindness subscale (e.g., “*I try to be understanding and patient toward aspects of my personality I don’t like.*”); the 5-item Self-Judgment subscale (e.g., “*I’m disapproving and judgmental about my own flaws and inadequacies.*”); the 4-item Common Humanity subscale (e.g., “*I try to see my failings as part of the human condition.*”); the 4-item isolation subscale (e.g., “*When I think about my inadequacies it tends to make me feel more separate and cut off from the rest of the world.*”); the 4-item Mindfulness subscale (e.g., “*When something painful happens, I try to take a balanced view of the situation.*”); and the 4-item Over-identification subscale (e.g., “*When I’m feeling down I tend to obsess and fixate on everything that is wrong.*”)

Studies designed to evaluate the SCS indicate that it exhibits an appropriate factor structure, has good internal consistency (.92) and test-retest reliability (.93 overall; .88 on the Kindness subscale; .88 on the Self-Judgment subscale; .80 on the Common Humanity subscale; .85 on the Isolation subscale; .85 on the Mindfulness subscale; .88 on the Over-identification subscale). It displays both convergent and divergent construct validity. The measure has no significant correlation with social-desirability bias, with a Pearson’s correlation coefficient calculated between the SCS and the Marlowe-Crown Social Desirability Scale ( $r = .05$ ;  $p = .34$ ). In past research the SCS has demonstrated good internal consistency reliability (.92) as well as good test-retest reliability ( $r = .93$ ) over a three-week interval (Neff, 2003a).

## STATISTICAL ANALYSES

Characteristics of data and distribution of scores, properties of the measures (reliabilities and validities), and the assumptions of the statistics used for testing the hypotheses will be assessed prior to analyzing the data. The hypotheses will be tested with a sequential multiple regression analysis to determine if self-compassion has a moderating effect on pain, buffering or weakening its harmful effects in the pain patients who embody higher reports of self-compassion. If self-compassion is a significant moderating variable, the level of pain reported (the independent or predictor variable) will be said to decrease quality of life and increase symptoms of depression and disability (the dependent or outcome variables) less for people with more self-compassion beyond what would be predicted by important demographic variables (age, sex, and length of pain). These hypotheses imply there may be a moderating interaction of pain and self-compassion in predicting depression, disability, and impairments in Quality of life.

Analyzing the data starts with transforming the continuous predictor and moderator variables by centering them—putting the variables into deviation units by subtracting their sample means to produce revised sample means of zero. Centering will reduce problems associated with high correlations among the predictor and moderator variables in the regression equation. After code variables have been created to represent categorical variables, and variables measured on a continuous scale have been centered or standardized, product terms will be created that represent the interaction between the predictor and moderator. This is performed by multiplying the predictor and moderator variables using the newly coded centered/standardized continuous variables. A product term will be created for each coded variable.

Once product terms have been created, a sequential multiple regression equation will be structured using SPSS statistical software to test for moderator effects. To do this,

the variables will be entered into the regression equation through a series of specified blocks or steps. The first step includes the code variables and centered variables representing the predictor and moderator variables. The product terms will be entered into the regression equation after the predictor and moderator variables from which they were created. Inspecting product terms by themselves (without controlling for the variables on which they are based) would confound the moderator effect with the effects of the predictor and moderator variables.

Interpreting the results of the multiple regression analyses to examine a moderator effect involves (a) interpreting the effects of the regression coefficients representing the relations between the predictor and moderator variables; (b) testing the significance of the moderator effect using a single degree of freedom F test (representing stepwise changes in variance explained as a result of the addition of the product term); and (c) interpreting and plotting significant moderator effects.

Appendix A: Models of health and disease comparison chart

<b>Models of Health and Disease Comparison Chart</b>		
<u>BIOMEDICAL</u>		<u>BIO-PSYCHO- SOCIAL-SPIRITUAL</u>
<p style="text-align: center;"><b>Disease</b></p> <p>identifies and reduces biomedical risk factors for physical disease</p> <p><u>“Unhealthy” Behaviors:</u> Poor individual lifestyle choices are considered primary determinants of sickness and disease</p> <p style="text-align: center;"><i>“People are Bad”</i> People tend to gravitate naturally towards unhealthy behaviors</p> <p style="text-align: center;">FEAR: Primary reason for change is to prevent disease and premature death</p> <p style="text-align: center;"><u>Expert</u> Recommend behaviors and prescribe changes to improve health</p> <p style="text-align: center;">Controlling Behaviors Behavior-change techniques used to suppress or eliminate targeted behaviors</p>	<p><u>Focus</u></p> <p><b><u>Determinants of health and disease</u></b></p> <p><b><u>Primary assumption</u></b></p> <p><b><u>Motivation for changing health behaviors</u></b></p> <p><b><u>Role of health professional</u></b></p> <p><b><u>Change process</u></b></p>	<p style="text-align: center;"><b>Health</b></p> <p>addresses an interconnected web of factors that contribute to health and prevent disease</p> <p style="text-align: center;"><u>Meaning and Support:</u> Meaning in life, relationships and work within supportive social and natural systems are considered primary determinants of health</p> <p style="text-align: center;"><i>“People are Good”</i> People have a natural desire and ability to seek out healthy behaviors</p> <p style="text-align: center;">HAPPINESS: Primary reason for change is to enhance sense of purpose and life enjoyment</p> <p style="text-align: center;"><u>Ally</u> Assist people to understand healing life issues that underlie illness and behavioral struggles</p> <p style="text-align: center;">Creating Consciousness Facilitate people’s reconnection with their own internal wisdom about their bodies and lives</p>

Adapted from Johnson & Kushner and (2001) and supplemented with Brady et al. (1999) and Wachholtz et al.(2007)

## Appendix B: WHOQOL-SRPB facets and items

### SRPB facets and corresponding items

---

#### *Connectedness to a spiritual being or force*

To what extent does any connection to a spiritual being help you to get through hard times?

To what extent does any connection to a spiritual being help you to tolerate stress?

To what extent does any connection to a spiritual being help you to understand others?

To what extent does any connection to a spiritual being provide you with comfort / reassurance?

#### *Meaning of life*

To what extent do you find meaning in life?

To what extent does taking care of other people provide meaning of life for you?

To what extent do you feel your life has a purpose?

To what extent do you feel you are here for a reason?

#### *Awe*

To what extent are you able to experience awe from your surroundings? (e.g. nature, art, music)

To what extent do you feel spiritually touched by beauty?

To what extent do you have feelings of inspiration / excitement in your life?

To what extent are you grateful for the things in nature that you can enjoy?

#### *Wholeness & integration*

To what extent do you feel any connection between your mind, body and soul?

How satisfied are you that you have a balance between mind, body and soul?

To what extent do you feel the way you live is consistent with what you feel and think?

How much do your beliefs help you to create coherence between what you do, think and feel?

#### *Spiritual strength*

To what extent do you feel inner spiritual strength?

To what extent can you find spiritual strength in difficult times?

How much does spiritual strength help you to live better?

To what extent does your spiritual strength help you to feel happy in life?

#### *Inner peace/ serenity/harmony*

To what extent do you feel peaceful within yourself?

To what extent do you have inner peace?

How much are you able to feel peaceful when you need to?

To what extent do you feel a sense of harmony in your life?

#### *Hope & optimism*

How hopeful do you feel?

To what extent are you hopeful about your life?

To what extent does being optimistic improve your quality of life?

How able are you to remain optimistic in times of uncertainty?

#### *Faith*

To what extent does faith contribute to your well-being?

To what extent does faith give you comfort in daily life?

To what extent does faith give you strength in daily life?

To what extent does faith help you to enjoy life?

Appendix C: Domains and Facets in WHOQOL-BREF and -SRPB

<b>Bio-Psycho-Social-Spiritual Model of Health</b>	<b>WHOQoL-BREF</b> Four-Domain Model <b>+ SRPB</b>	<b>Facets Incorporated within WHOQoL Domains</b>
<p style="text-align: center;"><b>BIO-</b></p> <hr style="border-top: 1px dashed black;"/> <p style="text-align: center;"><b>PSYCHO-</b></p> <hr style="border-top: 1px dashed black;"/> <p style="text-align: center;"><b>SOCIAL-</b></p> <hr style="border-top: 1px dashed black;"/> <p style="text-align: center;"><b>SPIRITUAL-</b></p>	<p><b><u>I. Physical Health</u></b></p> <p>Q1–24 plus Q25–26: Overall QoL and General Health Perceptions</p> <p style="text-align: center;">comprise the 26-Q <b>WHOQoL-BREF</b></p>	<p>Q1 Energy and fatigue 2 Pain and discomfort 3 Sleep and rest 9 Mobility 10 Activities of daily living 11 Dependence on medicinal substances &amp; medical aids 12 Work capacity</p>
	<p><b><u>II. Psychological Health</u></b></p>	<p>4 Bodily image/appearance 5 Negative feelings 6 Positive feelings 7 Self-esteem 8 Thinking, learning, memory, concentration</p>
	<p><b><u>III. Social Relationships</u></b></p>	<p>13 Personal relationships 14 Social support 15 Sexual activity</p>
	<p><b><u>IV. Environment</u></b></p>	<p>16 Physical safety &amp; security 17 Home environment 18 Financial resources 19 Health and social care: accessibility &amp; quality 20 Opportunities for acquiring new information &amp; skills 21 Participation/opportunities for recreation &amp; leisure 22 Physical environment: pollution/noise/traffic/climate 23 Transport 24 Spirituality S1 Spiritual connection S2 Meaning and purpose in life S3 Experience awe / wonder S4 Wholeness and integration S5 Spiritual strength S6 Inner peace S7 Hope and optimism S8 Faith</p>
	<p><b><u>*Spirituality/Religion/ Personal Beliefs</u></b></p> <p>S1–S8 each have four items to comprise the 32-question <b>WHOQoL-SRPB</b></p>	

## Appendix D: Announcement of study distributed to pain specialists

Dear Dr. \_\_\_\_\_

(title and facility)

This healthcare facility is invited to participate in a research study approved by the University of Texas at Austin that investigates potential relationships between pain and quality of life (QoL) in a chronic pain patient population.

If you choose for your organization to participate, patients that meet the inclusion criteria will complete an online survey by responding to questions about their physical pain as well as any associated discomfort and depression. In order to understand patient concerns and pain effects on quality of life for this study, the comprehensive assessment will also look at relevant biological, psychological, social, and spiritual life conditions of interest, using the following measures:

---

The World Health Organization Quality of Life Battery of Assessments (1997)	74 items
WHOQOL-BREF	Quality of Life Measure- <i>Brief Form</i>
WHOQOL-SRPB	<i>Spiritual, Religious and Personal Beliefs</i>
WHOQOL-PDM	<i>Pain and Discomfort module</i>
The Beck Depression Inventory (Beck, et. al., 1996)	21 items
The Self-Compassion Scale (Neff, 2003)	26 items

---

Potential participants will be informed that they can answer the questions in private at home (or at any secure on-line access) and that the survey takes approximately one to two hours to complete, with breaks available as needed. There are minimal risks involved in the study. Please see the enclosed flyer informing patients about the study.

This information will be used anonymously for research purposes by the investigator and possibly other health-research organizations. The responses will be analyzed without being directly associated with individual patients or participating pain-treatment facilities. The study will run from the beginning of March through the end of July 2012.

If you would like this treatment facility to participate, or for more information, please contact the principal investigator of this study, Michael Shattah, M.A. at (512) 694-4001, or by e-mail at [mjshattah@gmail.com](mailto:mjshattah@gmail.com)

You can also contact the supervising advisor of the study, Dr. \_\_\_\_\_ at

Appendix E: Informed consent

**APPROVED BY IRB ON: (FOR ORSC USE ONLY)**

**EXPIRES ON:**

**IRB# \_\_\_\_\_**

***Informed Consent to Participate in Research***  
**The University of Texas at Austin**

You are being asked to participate in a research study approved by the University of Texas at Austin. This form provides you with information about the study. Your participation is entirely voluntary and you can refuse to participate without penalty or loss of treatment benefits in any way. If you have any questions about the study before choosing to participate, you can contact the Principal Investigator (person in charge of the study) below:

**Title of Research Study:**

Relationships Between Pain and Quality of Life in a Chronic Pain Patient Population

**Principal Investigator(s), U.T. Affiliation, and Telephone Number(s):**

Principal Investigator: Michael J. Shattah, M.A.

Department of Educational Psychology

Phone: (512) 694-4001 Email: mjshattah@mail.utexas.edu

Faculty Sponsors:

Department of Educational Psychology, Phone: (512) 471-0368

**Funding Source:**

**What is the purpose of this study?**

From this project we would like to understand more clearly the Quality of Life conditions that are affected by chronic pain so that better treatment procedures can be developed to prevent and alleviate pain.

You were selected as a participant in this particular study because you indicated a willingness to participate and that you meet **all** of the following criteria:

- (a) you have a history of at least 6-months chronic pain or diseases involving pain
- (b) you are under the treatment of a physician for the chronic pain condition
- (b) you are 18 years of age or older
- (c) you do not have any conditions to prevent you from completing this on-line survey

It is the understanding of the researchers that you satisfy all of these inclusion criteria. If this is not the case please discontinue participating in this study. Your medical care treatment will not be affected in any way.

*shattahm*



**APPROVED BY IRB ON: (FOR ORSC USE ONLY)**

**EXPIRES ON:**

**What will be done if I take part in this research study?**

Participation in the study will require completing an on-line survey that inquires about your physical pain and how it affects other important conditions in your life. The questionnaire can be completed at home or another private place with internet access and will take approximately 1 to 2 hours to complete. You can take breaks as needed.

**What are the possible discomforts and risks?**

The risks associated with your participation in this study are minimal, but do involve the rare possibility of experiencing emotional distress as a result. Some of the questions asked in this study will have you think about unpleasant topics and you might possibly experience strong emotions related to that event.

Treatment is not provided by this study. If you experience any distress during or after any portion of the study you can contact the researchers (see above) who will provide you with information about possible resources you may find useful. You may also call your treating physician or health care provider or the (local helpline) Austin–Travis County Mental Health Services Counseling Helpline at 512-472-4357.

If you wish to discuss the information above or other concerns, you may call the Principal Investigator or Supervisors listed at the top of this form. You can choose to withdraw from the study at any time.

**What if I am injured because of the study?**

There is no known physical risk involved in participating in this study.

**What are the possible benefits to me or to others?**

Your participation in this study will contribute to research examining the relationships between pain and quality of life (QoL) in chronic pain patients. Information from studies such as these can be used to develop treatments for relieving and preventing pain.

By completing the surveys, you may learn more about yourself and your current life conditions; you can choose to share this information with your physician(s) to improve assessment and treatment options. Also, you will be given the opportunity to receive a summary of the research findings that will be available after the study is completed.

**If I take part in this study, will it cost me anything? Will I be compensated?**

There is no cost required and no compensation available for participating in this study.

**If I do not want to take part in this study, what other options are available to me?**

Participation in this study is completely voluntary. You are free to refuse to be in the study, and your refusal will not influence current or future relationships with your treating physician or The University of Texas at Austin.

*shattahm*

**APPROVED BY IRB ON: (FOR ORSC USE ONLY)**

**EXPIRES ON:**

**How can I withdraw from this research study? Who should I call with questions?**

If you wish to stop your participation in this research study for any reason, you are free to withdraw your consent and discontinue this research study at any time without penalty or loss of benefits for which you may be entitled. In addition, if you have questions about your rights as a research participant, please contact Jody Jensen, Ph.D., Chair, The University of Texas at Austin Institutional Review Board for the Protection of Human Subjects, (512) 232-2685 or the Office of Research Support and Compliance at (512) 471-8871 or email: [orsc@uts.cc.edu](mailto:orsc@uts.cc.edu)

**How will my privacy and the confidentiality of your research records be protected?**

Authorized persons from The University of Texas at Austin and the Institutional Review Board have the legal right to review your research records; they will protect the confidentiality of those records to the extent permitted by law. Otherwise, your research records will not be released without your consent unless required by law or a court order.

If the results of this research are published or presented at scientific meetings, your identity will not be disclosed. Your identity will be kept confidential, and no personal information will be associated with any of the written materials and data you provide.

**Will the researchers benefit from your participation in this study?**

The researchers will not benefit from your participation in this study beyond satisfying dissertation requirements and publishing the results of the study.

**Statement of Consent:**

You have been informed about this study's purpose, procedures, possible benefits and risks. You have been given the opportunity to ask questions before you sign, and you have been told that you can ask other questions at any time. You voluntarily agree to participate in this study.

I have read the above information and have sufficient information to make a decision about participating in this study. I consent to participate in this study.

Signature \_\_\_\_\_

Date \_\_\_\_ / \_\_\_\_ / \_\_\_\_

**By signing this form, you are not waiving any of your legal rights.**

---

*shattahm*

## **Have you experienced pain for at least six months?**

Hopefully not, but if so, you are invited to participate in an on-line study about the effects of chronic pain on your health and Quality of Life (QoL)

Approved by the University of Texas at Austin

### **Tell us about it!**



Ongoing pain affects health and QoL in up to 75 million Americans. Your contribution to this research can help improve the assessment and treatment of many pain conditions.



The survey can be completed privately at home and is expected to take 1 to 2 hours, with additional breaks as needed. Your identity will not be associated with your responses.



By completing the health surveys, you can benefit with a better understanding of your QoL in relation to your pain. You will be given the opportunity to receive a summary outcome of the study after completion, with useful descriptions of the results. There is no financial compensation for participating.

According to the  
World Health  
Organization:  
(2006)

*“Quality of Life” is the perception of where you are in life based on your culture and values and in relation to your goals, expectations, standards and concerns*

The brief survey will ask you about the following QoL conditions:

#### **Biological & Physical QoL**

energy levels, discomfort, and functioning

#### **Psychological QoL**

thoughts, feelings, self-concept and body image

#### **Social QoL**

relationships, support and social environment

#### **Spiritual QoL**

faith, optimism, life meaning and purpose

### **U.T. Survey Research Study: *The Effects of Chronic Pain on Quality of Life (QoL)***

To participate, please go to  
[www.surveymonkey.com/QOL](http://www.surveymonkey.com/QOL)  
before July 31, 2012  
and follow the instructions provided

All participants in this study will be treated in accordance with the American Psychological Association’s “Ethical Principles of Psychologists and Code of Conduct” (1992) and with the requirements of the Institutional Review Board at the University of Texas at Austin. For more information about this study, contact:

## References

- Ethical principles of psychologists and code of conduct. (1992). Washington, DC: American Psychological Association.
- WHOQOL-BREF introduction, administration, scoring and generic version of the assessment. (1996). Geneva: World Health Organization.
- WHOQOL measuring quality of life. (1997). Geneva: World Health Organization.
- Psychological approaches to pain management: A practitioner's handbook. (Second ed.)(1999). New York: Guilford Press.
- The management of persistent pain in older persons. (2002). New York: American Geriatrics Society.
- Health, United States. (2006). Hyattsville, MD: CDC National Center for Health Statistics.
- Ashburn, M. A., & Staats, P. S. (1999). Management of chronic pain. *Lancet*, 353(May 29), 1865-1869.
- Bair, M. J., Robinson, R. L., Katon, W., & Kroenke, K. (2003). Depression and pain comorbidity. *Arch Internal Med*, 163(10), 2433-2445.
- Banks, S. M., & Kerns, R.D. (1996). Explaining high rates of depression in chronic pain: A diathesis-stress framework. *Psychological Bulletin*, 119(1), 95-100.
- Beck, A. T., Steer, R. A., & Brown, G. K. (1996). *Beck depression inventory* (2nd ed.). San Antonio, TX: The Psychological Corporation.
- Benson, H. (1975). *The relaxation response*. New York, NY: Morrow and Company.
- Bishop, S. R. (2002). What do we really know about mindfulness-based stress reduction? *Psychosomatic Medicine*, 64(71-84).
- Bishop, S. R., Lau, M., Shapiro, S., Carlson, L., Anderson, N. D., Carmody, J., et al. (2004). Mindfulness: A proposed operational definition. *Clin Psychol Sci Prac*, 11, 230-241.
- Brady, M. J., Peterman, A.H., Fitchett, G., Mo, M., & Cella D. (1999). A case for including spirituality in quality of life measurement in oncology. *Psycho-oncology*, 8, 417-428.
- Chiesa, A., & Serretti, A. (2011). Mindfulness-Based Interventions for chronic pain: A systematic review of the evidence. *Journal of Alternative and Complementary Medicine*, 17(Number 1), 83-93.
- Crossley, M. L. (2001). Do we need to rethink health psychology? *Psychology, Health and Medicine*, 6(3), 243-265.

- Deurr, M. (2004). *A powerful silence: The role of meditation and other contemplative practices in American life and work*. Northampton, MA: Center for Contemplative Mind in Society.
- Dohrenwend, B. P., Raphael, K. G., Marbach, J. J., & Gallagher, R. M. (1999). Why is depression comorbid with chronic myofascial face pain? A family study test of alternative hypotheses. *Pain*, 83(2), 183-192.
- Engel, G. E. (1977). The need for a new medical model: a challenge for biomedicine. *Science*, 196(April 8), 129-136.
- Feinberg, S. (2004). Medications for chronic pain. *Business Briefing: Long-term Healthcare*, 1-4.
- Fishbain, D., Cutler, R., & Rosomoff, H. L. (1997). Chronic pain-associated depression: Antecedent or consequence of chronic pain? A review. *Clinical Journal of Pain*, 13(2), 116-137.
- Gallup, G., & Lindsay, M. (1999). *Surveying the religious landscape*. Harrisburg, PA: Morehouse Publishing.
- Gatchel, R. J. (2004). Psychosocial factors that can influence the self-assessment of function. *Occupational Rehabilitation*, 14(3), 197-206.
- Gatchel, R. J. (2005). *Clinical essentials of pain management*. Washington: American Psychological Association.
- Gatchel, R. J., & Turk, D. C. (1996). *Psychological approaches to pain management: A practitioner's handbook*. New York: Guilford Press.
- Gatchel, R. J., & Weisberg, J. N. (Eds.). (2000). *Personality characteristics of patients with pain*. Washington: American Psychological Association.
- Gilbert, P., & Irons, C. (2004). A pilot exploration of the use of compassionate images in a group of self-critical people. *Memory*, 12, 507-516.
- Gilbert, P., & Procter, S. (2006). Compassionate mind training for people with high shame and self-criticism: Overview and pilot study of a group therapy approach. *Clinical Psychology and Psychotherapy*(13), 353-379.
- Goldstein, J., & Kornfield, J. (1987). *Seeking the Heart of Wisdom: The Path of Insight Meditation*. Boston: Shambhala.
- Goleman, D. (1988). *The Meditative Mind*. New York: J.P. Tarcher.
- Gonzales, V., Martelli, M., & J., B. (2000). Psychological assessment of persons with chronic pain. *NeuroRehabilitation*, 14, 69-83.
- Grahn, B., Ekdahl, C., and Borgquist, L. (1998). Effects of a multidisciplinary rehabilitation programme on health-related quality of life in patients with

- prolonged musculoskeletal disorders: a 6-month follow-up of a prospective controlled study. *Disability and Rehabilitation*, 20(8), 285-297.
- Gureje, O., Von Korff, M., Simon, G. E., & Gater, R. (1998). Persistent pain and well-being: A World Health Organisation study in primary care. *JAMA*, 280, 147–151.
- Hanh, T. N. (1996). *The miracle of mindfulness: A manual for meditation*. Boston: Beacon Press.
- Hayes, S. C., Follette, V. M., & Linehan, M. M. (2004). *Mindfulness and acceptance: Expanding the cognitive-behavioral tradition*. New York: Guilford.
- JCAHO. (2000). *Pain assessment and management: An organizational approach*. Oakbrook Terrace, IL: Joint Commission on Accreditation of Healthcare Organizations.
- Jensen. (1991). Assessing the affective component of chronic pain: Development of the Pain Discomfort Scale. *Psychosomatic Research*, 35(2/3), 149-154.
- Jensen, M. P., Turner, L. R., Turner, J. A., & Romano, J. M. (1996). Use of multiple-item scales for pain intensity measurement in chronic pain patients. *Pain*(67), 35-40.
- Johnson, S. S., & Kushner, R. F. (2001). Mind/body medicine: An introduction for the generalist physician and nutritionist. *Nutr Clin Care*, 4(5), 256-264.
- Kabat-Zinn, J. (1982). An outpatient program in behavioral medicine for chronic pain patients based on the practice of mindfulness meditation: Theoretical considerations and preliminary results. *General Hospital Psychiatry*, 4, 33-47.
- Kabat-Zinn, J., Lipworth, L., & Burney, R. (1985). The clinical use of mindfulness meditation for the self-regulation of chronic pain. *Journal of Behavioral Medicine*, 8(2), 163-189.
- Kabat-Zinn, J. (1990). *Full Catastrophe Living*. New York: Bantam.
- Kabat-Zinn, J., & Chapman-Waldrop, A. (1988). Compliance with an outpatient stress reduction program: Rates and predictors of program completion. *Journal of Behavioral Medicine*, 11(4).
- Keefe, F. J. (1996). Cognitive behavioral therapy for managing pain. *The Clinical Psychologist*, 49(3), 4-5.
- Keefe, F. J., Beaupre, P. M., & Gil, K. M. (2002). Group therapy for patients with chronic pain. In D. C. Turk & R. J. Gatchel (Eds.), *Psychological approaches to pain management: A practitioner's handbook* (2nd ed., pp. 234-255). New York, NY: Guilford Press.
- Keefe, F. J., Rumble, M. E., Scipio, C. D., Giordano, L. A., & Perri, L. C. (2004). Psychological aspects of persistent pain: Current state of the science. *Journal of Pain*, 5(4), 195-211.

- Kelly, A. C., Zuroff, D. C., & Shapira, L. B. (2009). Soothing oneself and resisting self-attacks: The treatment of two intrapersonal deficits in depression vulnerability. *Cognitive Therapy and Research*, 33, 301–313.
- Kornfield, J. (1993). *A path with a heart*. New York: Bantam.
- Larson. (1999). The conceptualization of health. *Medical Care Research and Review*, 56(2), 123-136.
- Leary, M. R., Tate, E. B., Allen, A. B., Adams, C. E., & Hancock, J. (2007). Self-compassion and reactions to unpleasant self-relevant events: The implications of treating oneself kindly. *Personality and Social Psychology*, 92(5), 887-904.
- Lindsay, P. G., & Wyckoff, M. (1981). The depression-pain syndrome and its response to antidepressants. *Psychosomatics*, 22(7), 571-577.
- Loeser, J. D., & Melzack, R. (1999). Pain: An overview. *Lancet*, 353(May 8), 1607–1609.
- Love, A. W. (1987). Depression in chronic low back pain patients: diagnostic efficiency of three self-report questionnaires. *Journal of Clinical Psychology*, 43, 84-89.
- Lutz, A., Dunne, J. D., & Davidson, R. J. (2007). Meditation and the neuroscience of consciousness. In P. Zelazo, M. Moscovitch & E. Thompson (Eds.), *Cambridge Handbook of Consciousness* (pp. 499-551). New York: Cambridge University Press.
- M.P., J., Turner, L. R., Turner, J. A., & Romano, J. M. (1996). The use of multiple-item scales for pain intensity measurement in chronic pain patients. *Pain*(67), 35-40.
- Martelli, M. F. Z., N.D.; Bender, M.C. & Nicholson, K. (2004). Psychological, neuropsychological, and medical considerations in assessment and management of pain. *Head Trauma Rehabilitation*, 19(1), 10-28.
- Mason, V. L., Skevington, S. M., & Osborn, M. (2004). Development of a pain and discomfort module for use with the WHOQOL-100. *Quality of Life Research*(13), 1139-1152.
- Mason, V. L., Skevington, S. M., & Osborn, M. (2008). The quality of life of people in chronic pain: Developing a pain and discomfort module for use with the WHOQOL. *Psychology and Health*, 23(2), 135-154.
- McCracken, L. M., & Thompson, M. (2009). Components of mindfulness in patients with chronic pain. *J Psychopathol Behav Assess*(31), 75-82.
- Melzack, R. (1993). Pain: past, present and future. *Canadian Journal of Experimental Psychology*, 47(4), 615-629.
- Monga, T., & Grabois, M. (2002). Conceptual model of pain and its management. In *Pain Management in Rehabilitation* (pp. 352): Demos.

- Morley, S., Eccleston, C., & Williams, A. (1999). Systematic review and meta-analysis of randomized controlled trials of cognitive behaviour therapy and behaviour therapy for chronic pain in adults, excluding headache. *Pain*, 80, 1-13.
- Moyers, B. (1993). *Healing and the mind*. New York: Doubleday.
- Neely, M. E., Schallert, D. L., Mohammed, S. S., Roberts, R. M., & Chen, Y. J. (2009). Self-kindness when facing stress: The role of self-compassion, goal regulation, and support in college students' well-being. *Motiv Emot*(33), 88-97.
- Neff. (2003b). Self-compassion: An alternative conceptualization of a healthy attitude towards oneself. *Self and Identity*(2), 85-102.
- Neff, K. D. (2003a). The development and validation of a scale to measure self-compassion. *Self and Identity*(2), 223-250.
- Neff, K. D. (2004). Self-compassion and psychological well-being. *Constructivism in the Human Sciences*, 9(2), 27-37.
- Neff, K. D., Kirkpatrick, K. L., & Rude, S. S. (2007a). Self-compassion and adaptive psychological functioning. *Research in Personality*(41), 139-154.
- Neff, K. D., & Lamb, L. M. (2008). Self-compassion. In S. Lopez (Ed.), *The Encyclopedia of Positive Psychology*: Blackwell.
- Neff, K. D., Rude, S. S., & Kirkpatrick, K. (2007b). An examination of self-compassion in relation to positive psychological functioning and personality traits. *Journal of Research in Personality*(41), 908-916.
- NIH. (2003). *Biobehavioral Pain Research PA-03-152*
- Novy, D. M., Nelson, D.V., Roderick, D. H., Squitieri, P., & Kennington, M. (1998). Coping with chronic pain: Sources of intrinsic and contextual variability. *Journal of Behavioral Medicine*, 21(1).
- Olason, M. (2003). Outcome of an interdisciplinary pain management program in a rehabilitation clinic. *Work*(22), 9-15.
- Ornish, D., Scherwitz, L. W., Doody, R. S., Kesten, D., McLanahan, S. M., & Brown, S. E. (1983). Effects of stress management training and dietary changes in treating ischemic heart disease. *JAMA*(249), 54.
- Pauley, G., & McPherson, S. (2010). The experience and meaning of compassion and self-compassion for individuals with depression or anxiety. *Psychology and Psychotherapy: Theory, Research and Practice*(83), 129-143.
- Poole, H., Bramwell, R., & Murphy, P. (2006). Factor structure of the Beck Depression Inventory-II in patients with chronic pain. *Clin J Pain*, 22(9).
- Powell, L. H., Shahabi, L., & Thoresen, C. E. (2003). Religion and spirituality: Linkages to physical health. *American Psychologist*, 58, 36-52.



- Proctor, T. J., Mayer, T.G., Gatchel, R.J., & McGeary, D.D. (2004). Unremitting health-care-utilization outcomes of tertiary rehabilitation of patients with chronic musculoskeletal disorders. *Bone and Joint Surgery*, 86A(1), 62-69.
- Raes, F. (2010). Rumination and worry as mediators of the relationship between self-compassion and depression and anxiety. *Personality and Individual Differences*, 48, 757–761.
- Rippentrop, A. E., Almaier, E. M., Chen, J. J., Found, E. M., & Keffala, V. J. (2005). The relationship between religion/spirituality and physical health, mental health and pain in a chronic pain population. *Pain*(116), 311-321.
- Romano, J. M., & Turner, J. A. (1985). Chronic pain and depression: Does the evidence support a relationship. *Psychological Bulletin*, 97(1), 18-34.
- Rosch, P. J., & Kearney, H. K. (1985). Holistic medicine and technology: A modern dialectic. *Social Science & Medicine*, 21(12), 1405-1409.
- Russo, C. M., & Brose, W.G. (1998). Chronic pain. *Annual Review of Medicine*, 49(123-133).
- Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2002). *Mindfulness-based cognitive therapy for depression: A new approach to preventing relapse*. New York: Guilford.
- Simonton, C., Matthews-Simonton, S., & Creighton, J. (1978). *Getting well again*. New York, NY: Bantam.
- Skevington, S. M. (1998). Investigating the relationship between pain and discomfort and quality of life, using the WHOQOL. *Pain*(76), 395-406.
- Skevington, S. M., Lofty, M., & O'Connell, K. A. (2004a). The World Health Organization's WHOQOL-BREF quality of life assessment: Psychometric properties and results of the international field trial. *Quality Of Life Research*(13), 299-310.
- Skevington, S. M., Sartorius, N., & Amir, M. (2004b). Developing methods for assessing quality of life in different cultural settings. *Social Psychiatry and Psychiatric Epidemiology*, 39(1), 1-8.
- Sloan, R. P., Bagiella, E., & Powell, T. (1999). Religion, spirituality, and medicine. *Lancet*, Vol. 353(9153), 664-667.
- Teasdale, J. D., Segal, Z. V., & Williams, J. M. (1995). How does cognitive therapy prevent depressive relapse and why should attentional control (mindfulness) training help? *Behav Res Ther*, 33(I), 25-39.
- Teasdale, J. D., Segal, Z. V., Williams, J. M. G., Ridgeway, V. A., Soulsby, J. M., & Lau, M. A. (2000). Prevention of relapse/recurrence in major depression

- by Mindfulness-Based Cognitive Therapy. *Journal of Consulting and Clinical Psychology*, 68(4), 615-623.
- Turk, D. C. (2002). A cognitive-behavioral perspective on treatment of chronic pain patients. In D. C. Turk & R. J. Gatchel (Eds.), *Psychological Approaches to Pain Management* (2 ed., pp. 138-158). New York: Guilford.
- Turk, D. C., & Gatchel, R. J. (2002). *Psychological approaches to pain management* (Second ed.). New York: Guilford Press.
- Turk, D. C., & Monarch, E. S. (2002). Biopsychosocial perspective on chronic pain. In R. J. Gatchel, & Turk, D.C. (Ed.), *Psychosocial factors in pain: Critical perspectives*. New York: Guilford.
- Turner, J. A., & Romano, J. M. (1984). Self-report screening measures for depression in chronic pain patients. *Journal of Clinical Psychology*, 40(4), 909-913.
- Van Dam, N. T., Sheppard, S. C., Forsyth, J. P., & Earleywine, M. (2011). Self-compassion is a better predictor than mindfulness of symptom severity and quality of life in mixed anxiety and depression. *Journal of Anxiety Disorders*, 25, 123-130.
- Verma, S., & Gallagher, R. M. (2000). Evaluating and treating co-morbid pain and depression. *International Review of Psychiatry*(12), 103-114.
- Wachholtz, A. B., & Keefe, F. J. (2006). What physicians should know about spirituality and chronic pain. *Southern Medical Association*, 99(10), 1174-1175.
- Wachholtz, A. B., Pearce, M. J., & Koenig, H. (2007). Exploring the relationship between spirituality, coping and pain. *Journal of Behavioral Med*(30), 311-318.
- Walsh, R., & Shapiro, S. (2006). The meeting of meditative disciplines and western psychology. *American Psychologist*, 61(3), 22-239.
- Wells, K. B., Golding, J. M., & Burnham, M. A. (1998). Psychiatric disorder in a sample of the general medical population with and without chronic medical conditions. *American Journal of Psychiatry*(145), 976-981.
- WHO. (1998). Development of the World Health Organization WHOQOL-BREF quality of life assessment. *Psychological Medicine*(28), 551-558.
- WHO. (2006). A cross-cultural study of spirituality, religion, and personal beliefs as components of quality of life. *Social Science & Medicine*(62), 1486-1497.
- Williams, A. C., & Richardson, P. H. (1993). What does the BDI measure in chronic pain? *Pain*(55), 259-266.
- Witmer, J. M., & Sweeney, T. J. (1992). A holistic model for wellness and prevention over the life span. *Counseling and Development*, 71, 140-148.