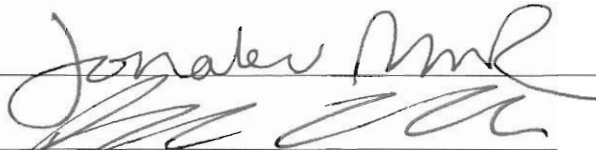


PILOT TEST OF A PAIN MANAGEMENT INTERVENTION FOR INDIVIDUALS
WITH AXIS I DISORDERS

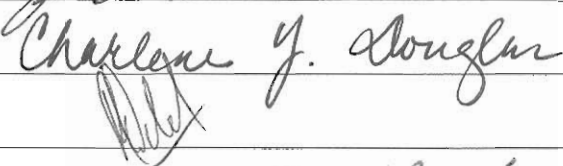
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A Dissertation
Submitted to the
Graduate Faculty
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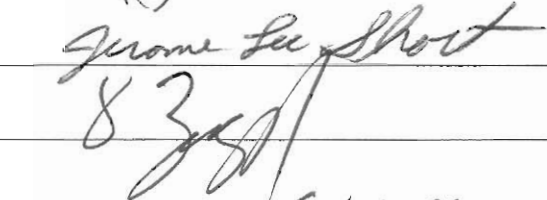
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Doctor of Philosophy at George Mason University

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Dedication

This dissertation is dedicated to my parents, Karen and Michael Wagner, whose love and support provided the foundation for my success.

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I extend my utmost appreciation to several people without whom this dissertation would not have been possible. First, I want to thank my adviser and committee chair, Dr. Jonathan Mohr. The impact of his mentorship extends beyond this dissertation; his wisdom and dedication to my education has facilitated my professional growth immeasurably. I also want to thank Dr. Patrick McKnight, for contributing his ideas, advice, and time, and Dr. Charlene Douglas, for her generosity and commitment to this project. In addition, I am grateful to Dr. Alison Johnson for her clinical supervision and enthusiasm about seeing this research through to the end. Finally, I want to thank my classmates, for their friendship and support.

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Abstract

PILOT TEST OF A PAIN MANAGEMENT INTERVENTION FOR INDIVIDUALS WITH AXIS I DISORDERS

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George Mason University, 2011

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The majority of chronic pain sufferers also experience concurrent mental health problems; however, there is little research examining treatments developed specifically for this population. The purpose of this study was to pilot test a new, six-session group intervention designed specifically for adults with both chronic pain and Axis I psychiatric diagnoses. The effectiveness of the intervention was investigated using a quantitative multiple case study design, with a treatment group ($n = 9$) and a wait-list control group ($n = 6$) of patients at a nonprofit community health facility for underinsured and uninsured individuals. Time series data from 12 time points were gathered from individual cases and were analyzed using Simulated Modeling Analysis procedures (SMA; Borckardt et al., 2008). It was hypothesized that compared with the pre-intervention phase, the intervention phase would be associated with lower perceived levels of pain severity, negative pain-related beliefs, and negative mood, as well as higher levels of self-efficacy for pain management. It also was hypothesized that the above effects would not be

observed among control group participants. As with other psychosocial treatments for pain, the hypothesized effects did not emerge consistently across participants. The strongest support for hypotheses was with respect to levels of perceived pain and disability: One-third of treatment group participants had statistically significant reductions on these variables, whereas virtually no such effects were observed among control group participants. Results also indicated that one-third of treatment group participants had statistically significant increases in perceived pain. Informal analysis of data indicated that treatment benefits were more likely to be observed among those who were (a) engaged in sessions, (b) parents, and (c) caregivers for friends or family members. Limitations of the study included problems with participant compliance, including lateness to sessions, missed sessions, and incomplete or missing surveys. Future studies of treatment for co-morbid pain and mental disorders should (a) investigate the role of readiness to change in treatment outcomes, (b) develop ways to increase compliance, (c) conduct follow-up assessments to look for delayed improvement, (d) measure temporal relationships among outcome variables, (e) measure pain severity and suffering separately, and (f) assess pain-related acceptance.

Keywords: chronic pain, Axis I, pain management, co-morbid disorders, group treatment

Introduction

Undoubtedly, pain is a burdensome issue for those who experience it on a regular basis. Pain is considered “chronic” when it persists beyond three months (International Association for the Study of Pain, 1990). Acute pain is the body’s reaction to physical harm or potential physical harm, and is thought to be adaptive in that it alerts the body to initiate the healing process. In contrast, chronic pain is not viewed as serving an adaptive function. Rather, pain becomes a regular part of an individual’s life (Turk & Winter, 2006). Often, this creates a multitude of other problems, including but not limited to serious disability, deterioration of one’s mental health and relationships, and major lifestyle changes as one adapts to chronic pain-related limitations.

Approximately one-third of the US population experiences chronic pain at some point in their lifetime (Rosenblatt & Mekhail, 2005). One study suggested that 57% of adults in the US experienced recurrent or chronic pain in the last year (American Academy of Pain Management, 2003). In that study, approximately 62% of those reporting pain endorsed having had the pain for more than one year, and 40% stated that they had been in constant pain. Billions of dollars are lost annually due to missed workdays and health care costs related to chronic pain (Rosenblatt & Mekhail, 2005). Although almost 80% of all medical complaints are about pain (Gatchel & Krantz, 2002), the success rate of treating chronic pain using traditional methods is not very promising.

The estimated short-term success rate for chronic pain treatment is 60% and long-term success rates are 30% or less (Baum & Posluszny, 1999).

The process of coping with chronic pain is often complicated by comorbid mental illness. One major study of the comorbidity between chronic pain and mental illness found that 77% of a sample of patients with chronic pain met DSM-IV criteria for a mental disorder at some point in their lifetime, and that 59% demonstrated current symptoms for at least one diagnosis (Gatchel, 2004). The most common of these diagnoses were major depression, substance abuse, and anxiety disorders, and all rates for mental disorders were considerably higher than those for the general population (Gatchel, 2004). Mental illness and chronic pain often contribute to one another, such that significant psychological problems can worsen the experience of and prognosis for chronic pain, and vice versa. Frequently, patients do not have a “home” for integrated treatment within the healthcare system, often trying multiple physical treatments, such as medications and surgeries to no avail. Although the challenges of coping with the combination of an Axis I disorder and chronic pain are evident to patients and their practitioners, there is little documented research examining chronic pain treatments developed specifically for individuals with Axis I disorders. The purpose of this paper is twofold. First, the literature on the implications and treatment of comorbid chronic pain and Axis I disorders will be described in further detail. Second, a new study will be described. The purpose of the study was to pilot test a new group treatment program designed for individuals with comorbid chronic pain and Axis I disorders. As explained

below, the effectiveness of the intervention was tested using a quantitative case study approach with data from a small sample of patients who participated in the treatment.

Defining Chronic Pain

Brief History of Pain Conceptualizations.

A number of theories related to the causes and maintenance of pain have been proposed, although several of them have been discredited. The main models include psychogenic perspectives, unidimensional sensory models, the gate control theory, and the biopsychosocial model. Moreover, research has investigated a number of psychological variables believed to contribute to pain. The psychogenic model, which assumes that pain that cannot be explained in terms of physical antecedents must be due to psychological processes (Turk, 2001; Gatchel, Baum, & Krantz 1997), is among one of the discredited models. The model has been criticized for lacking a clear explanation of said psychological processes (Turk & Salovey, 1984). According to the unidimensional sensory model, the amount of pain experienced is directly equal to the amount of tissue damage and its resultant peripheral nociceptive (physical damage) input (Melzack & Wall, 1982; Turk, 2001). This perspective is problematic largely because objective descriptions of illnesses or injuries are not always identical to subjective appraisals of pain intensity and amount (Turk 2001).

The gate control theory of pain (Melzack & Wall, 1962) involves a structure in the dorsal horn of the spinal cord that acts as a “gate” that directs the transfer of nerve impulses from the peripheral nerves to the central nervous system (resulting in the

sensation of pain). Depression, anxiety, attention, and past experiences may influence pain perception by affecting the degree of impulse transfer the gate allows (Melzack, 1993; Baum & Posluszny, 1999). Melzack (1999) later elaborated on the gate control theory by defining a “neuromatrix” model of pain in which suggests that the neuromatrix operates via somatosensory (sensory), limbic (affective), and thalamocortical (evaluative) dimensions in order to create the experience of pain. The proposed neuromatrix is thought to be genetically preprogrammed, but can be changed through learning and experience. This approach has been modeled in rat studies (Vaccarino & Melzack, 1989) but not yet in humans. Currently, the most widely accepted theory used to explain pain is the biopsychosocial model, explained further below.

Biopsychosocial Model

The biopsychosocial model (Engel, 1977) is a comprehensive model that takes into account the combination of physical, social, behavioral, emotional, and environmental influences of a given disorder or set of disorders. Unlike other models, it features specific processes through which biological and psychological variables influence pain (a number of these processes will be explained further below as well as in the next section). It was developed within the fields of health psychology and behavioral medicine in reaction to the widespread dissatisfaction with the previous, dualistic model that had dominated the medical field. It has been influential in explaining chronic pain ever since (Gatchel, et al., 2007).

This conceptualization of pain indicates that it is a complex, multidimensional process. The biopsychosocial model assumes that any illness or disorder must be treated

in an integrative fashion, as the way in which one manages the illness disorder, as well as the way in which one responds to social influences, can impact the course of the problem (Engel, 1977). Therefore, according to the biopsychosocial model, it is reductionistic to isolate one aspect of a problem (e.g., only treating pain or only treating depression). This theory is perhaps most integrative of the pain theories, and research has shown that the most effective chronic pain management techniques take into account these numerous factors. For these reasons, the biopsychosocial theory is considered to be one of the most widely accepted contemporary models of pain (Tearnan, 2007; Gatchel, Peng, Peters, Fuchs, & Turk, 2007).

The terms “suffering” and “disability” appear frequently throughout in the biopsychosocial literature on chronic pain. In this context, suffering is defined as the emotional component of pain, or one’s subjective assessment of how unpleasant their pain is. The biopsychosocial model indicates that one’s sense of suffering is first activated by nociception, or the physical cause of pain. Once this is activated, individuals react with negative emotions, which can serve the adaptive purpose of motivating the individual to eliminate whatever is causing or provoking the pain (Tearnan, 2007). The biopsychosocial model also asserts that suffering is further affected by how the individual interprets their pain. For example, when people worry excessively about their pain or become anxious that their pain will get increasingly worse, then both pain and suffering will increase, which, in turn, will impact the interpretation of pain. Clearly, this can become a cyclic pattern. Other psychological factors that may influence the degree of suffering may include fears that the pain will lead to the loss of relationships,

productivity, physical abilities, and pleasurable activities. Social factors may include loss of income due to reduced work attendance or productivity (Tearnan, 2007).

In the biopsychosocial literature on chronic pain, the term “disability” refers to the degree of physical limitation experienced because of chronic pain (Tearnan, 2007). A person with chronic pain may be unable to perform certain daily activities, depending on the nature and location of the pain. For example, a patient with chronic knee pain may be unable to sit for long periods of time without the joint locking or aching, and may experience pain exacerbation from walking up or down stairs. Like suffering, disability is influenced by physical, psychological, and social factors, according to the biopsychosocial model of pain. Common psychological factors that impact disability may include the fear of exacerbation or “flare-ups,” and avoidance of activities that require any accommodation for physical limitations. Social factors may include the influence of family members, as well as the degree to which a workplace accommodates physical limitations (Tearnan, 2007). For example, family members may reinforce unhealthy behaviors that maintain a higher level of disability in an individual (e.g., offering to do chores for the individual that the individual could do themselves).

The biopsychosocial model also addresses the conflict that the degree of physical damage associated with chronic pain is not always equal to the degree of discomfort. As mentioned previously, chronic pain often lingers well after much of the physical healing has occurred. At this point, it can be difficult to identify the exact location and cause of the pain. It is for these reasons that many chronic pain conditions are considered elusive or nonspecific (Waddell & Turk, 1992). Tearnan (2007) stated that although it is

commonly believed that disability and suffering are strongly and positively correlated with actual physical damage, this association is weak in those with chronic pain.

Nonphysical factors, such as psychological and social influences, play a large role in the degree of suffering and disability experienced in chronic pain patients. These factors will be discussed in further detail below.

Psychological and Social Factors

According to the biopsychosocial model, psychosocial factors play a major role in the etiology, severity, exacerbation, maintenance, and treatment of pain (Turk 2001); however, it was not until recently that research has focused on examining these factors. Much of the research that has focused on psychosocial factors has emphasized the behavioral aspects of pain, as well as the relationship of pain with both affect and cognitions.

Psychological Factors: Learning and Behavior.

Fordyce (1976) introduced the idea of operant learning mechanisms in chronic pain to explain the avoidance of actions that one believes to be associated with the experience of painful sensations. In a similar vein, some studies have found an association between spouse reinforcement and patients' pain behaviors or disability (Romano et al., 1992, 1995). For instance, spouses may engage in overly solicitous behaviors or negative behaviors (e.g., expressing agitation) with partners who experience chronic pain. In either case, the spouse is providing the individual with attention that may reinforce pain behaviors. Although this theory accounts for observable manifestations of pain, it has been criticized for failing to provide a systematic explanation of the causal

processes involved in the pain experience (Turk, 2001). However, it can be argued that this perspective fits well into the broader psychosocial framework and has implications for treatment.

The operant learning theory can be applied to pain management techniques. It has been suggested that such techniques may include tactics such as self-monitoring of activity level, as well as social reinforcement on behalf of family members or housemates (International Association for the Study of Pain, 1997). There is evidence that positively reinforcing adaptive pain management behaviors and self-monitoring of activity level can lead to better outcomes. In a study of a CBT group for individuals with chronic pain, reductions in the levels of pain severity, pain-related disability, and depression were found (Wells-Federman, Arnstein, & Caudill, 2002). In addition to traditional cognitive-behavioral strategies, the workshop focused on discussing wellness behaviors such as healthy ways of eating, exercising, relaxing, etc. Individuals were instructed to keep daily journals to record behaviors within each of those categories. Despite the success of this intervention, it should be noted that the study did not directly measure the impact of reinforcement and self-monitoring on the outcomes.

Psychological Factors: Affect and Cognition.

As mentioned previously, much research attention has been directed toward the relationship between affect and pain. Research has supported the intuitive hypothesis that repeated experiences with pain are likely to increase levels of negative mood, such as states of tension, nervousness, and irritability (Affleck, Tenen, Urrows, & Higgins, 1991; Zautra, et al., 1995). There is also evidence that individuals with a more negative mood

report higher pain levels, even when controlling for level of disease activity and perceived disability (Affleck et al., 1991). Thus, pain and negative mood appear to influence one another. Also, in chronic pain patients (rheumatoid arthritis and fibromyalgia), positive affect has been found to decrease the likelihood of experiencing negative affect (Zautra, Smith, Affleck, & Tennen, 2001). Such findings suggest that positive affect may protect chronic pain patients against developing undesirable psychological consequences of pain.

Individuals with chronic pain have also been found to be at an increased risk for experiencing anger (Geisser, Roth, Theisen, Robinson, Riley, & 2000). Using data from a large sample of veterans with chronic pain, Lombardo, Tan, Jensen, and Anderson (2005) found that maladaptive anger management was negatively associated with self-efficacy for control over one's pain and positively associated with pain intensity. It was also found that both pain intensity and the interaction between self-efficacy and pain intensity significantly predicted maladaptive anger management. Anger management was defined as either dysfunctional or functional. Dysfunctional anger management was defined as endorsing high levels of anger suppression (e.g., "keeping it all inside") or aggressive expression of anger (e.g., slamming doors), whereas functional anger management entails being able to effectively control one's anger.

Several findings have been reported with regard to the impact of cognitions on chronic pain, particularly in the context of comorbid depression. Some research has found that maladaptive ways of responding to and coping with pain may lead to higher reported levels of both pain and depression (Campbell, Clauw, & Keefe, 2005). For instance,

when describing or thinking about their pain, depressed chronic pain patients tend to use cognitive biases such as dichotomous thinking and overgeneralization (Smith et al., 1994). Studies of depressed chronic pain patients have found that once these maladaptive styles are treated, both pain and depression tend to decline (Burns, Kubilus, Breuhl, Hardon, & Lofland, 1998; Leibing, Pflingsten, Bartmann, Rueger, & Schuessler, 1999). In addition, chronic pain patients with high levels of pain catastrophizing, perceived helplessness, and low self-efficacy report higher levels of pain (Covic, Adamson, Howe, & Spencer, 2002), suggesting that certain cognitive styles put individuals at risk for experiencing higher levels of subjective pain than those who do not possess these styles.

There has also been research with regard to self-discrepancy theory in chronic pain. Pain patients whose perceptions of themselves differed significantly from the type of person they wished they were (ideal self) or believed they should be (ought-other self) have been found to be worse off than patients whose perceptions matched their preferences more closely. Specifically, patients with higher levels of self-discrepancy were more prone to severe pain and psychological distress, as well as symptoms of depression (Waters, Keefe, & Strauman, 2004). It should be noted that these results could also be interpreted in the opposite direction, such that individuals with more severe pain and psychological distress are more likely to perceive self-discrepancies.

As alluded to previously, Cassell (1982) suggested that a perceived sense of threat partially explains the suffering that individuals with chronic pain experience. Common threat-related beliefs may include the notion that pain will worsen as the individual ages, or the belief that it is impossible to ever experience a change in pain level. One other

important cognitive factor is uncertainty over the source of pain (Tearnan, 2007). This is believed to contribute to individuals feeling a lack of control over their condition, which can increase suffering and disability. By learning to ask health care providers these important questions, chronic pain sufferers may be able to reclaim a sense of control over their pain.

This review of research on affective and cognitive antecedents, consequences, and correlates of pain provides clues as to possible targets for intervention in treatment of people with chronic pain. Research has indicated that treatment for chronic pain should aim to decrease negative affect and enhance positive affect in order to relieve pain levels (Affleck et al., 1991; Zautra, Smith, Affleck, & Tennen, 2001). Treatment should also address tension, nervousness, and irritability, all of which are thought to be increased by pain (Affleck, Tenen, Urrows, & Higgins, 1991; Zautra, et al., 1995). Because it has been found that individuals with chronic pain are at an increased risk for experiencing anger (Geisser, Roth, Theisen, Robinson, Riley, & 2000), therapists should also help individuals with chronic pain manage their anger in more adaptive ways. This may be accomplished by increasing self-efficacy for pain management, and may decrease perceived pain severity.

Clinicians should also continue to incorporate the elimination of cognitive biases into treatment for chronic pain (Smith et al., 1994; Covic, Adamson, Howe, & Spencer, 2002) as well as treatment for comorbid chronic pain and psychological problems (Burns, Kubilus, Breuhl, Hardon, & Lofland, 1998; Leibing, Pfingsten, Bartmann, Rueger, & Schuessler, 1999). Finally, treatment of chronic pain should include patient education in

order to address uncertainty over the source of pain, as well as perceived suffering and disability (Cassell, 1982; Tearnan, 2007).

Social Factors: Interpersonal Relationships and Attachment Style.

Social and interpersonal factors have also been found to impact the experience of comorbid chronic pain and mental health. For example, it has been suggested that negative social interactions may enhance the risk of depressive symptoms in chronic pain patients (Thacher et al., 2001). Indeed, some studies have found that for pain patients, low family cohesion and high family conflict tend to be related to higher reported depression (Romano, Turner, & Jensen, 1997; Campbell, Clauw, & Keefe, 2005). Additionally, negative spousal responses (e.g., criticism) have been shown to be associated with higher reported depression in rheumatoid arthritis patients (Brekke, Hjortdahl, Thelle, 1999). In related research (Cano, Weisberg, Gallagher, 2000), marital satisfaction and pain severity were found to mediate the relationship between negative spousal responses and depressive symptoms in patients with other forms of chronic pain, such as chronic low back pain. Similarly, Keefe et al. (1996) found that interventions involving spouses or caregivers proved more successful in reducing pain and psychological distress in pain patients than techniques that did not involve these important figures in the patient's life.

Additionally, attachment style has been studied in the context of chronic pain. Patients who exhibit a fearful attachment style (characterized by a negative view of both the self and others) have also been shown to be more prone to depression and

catastrophizing, and that preoccupied attachment style leads to a higher number of pain-related doctors' visits (Ciechanowski, Sullivan, Jensen, Romano, & Summers, 2002).

Research suggests that therapists who are treating patients with chronic pain should consider addressing the issues of low family cohesion, high family conflict, and marital conflict as they relate to the patients' pain. Therapeutic interventions that incorporate other family members or spouses may provide additional benefit. Specifically, therapy may address negative spousal responses to pain. Therapy may also aim to identify attachment style in order to help individuals determine ways that they can communicate better.

Social Factors: Demographics.

Socioeconomic status, sex, and ethnicity have also been studied in relation to chronic pain. For example, it has been found that less formal education and low socioeconomic status are associated with a higher likelihood of depression in rheumatoid arthritis patients, as compared with patients with higher levels of education and higher socioeconomic status (Brekke, Hjortdahl, Thelle, 1999). Females are more likely than males to report depression in the context of chronic pain, although it is possible that this is an artifact of women reporting both more depression and more pain in general (Campbell, Clauw, & Keefe, 2003). In terms of ethnicity, some research (e.g., Edwards, Moric, & Husfeldt, 2005) has found there to be no significant differences in measures of pain, depression, psychopathology, coping style and pain-related disability between African Americans, Hispanics, and Caucasian chronic pain patients. Despite that finding, the study also found that praying and hoping as a means to cope with pain was related to

higher levels of distress among African American participants, but not among Hispanic or Caucasian participants. Therefore, it appears that praying and hoping may only be problematic for individuals of certain backgrounds—specifically those of African American descent. Other studies, such as McCracken et al. (2001), found African Americans with persistent pain tend to suffer from higher levels of psychological distress. Tan, Jensen, Thornby, and Anderson (2005) found African American veterans with chronic pain showed lower perceived control over their pain, more external pain-coping strategies (i.e., praying and hoping as coping strategies and believing that a medical cure for their pain exists), and higher levels of depression and disability in comparison to Caucasian veterans—even after controlling for pain severity. However, when controlling for other demographic variables (age, gender, marital status, and education) in regression analyses, no significant ethnic differences remained among pain, depression, or disability, and that ethnicity did not interact with coping style to predict any of the aforementioned outcomes. Therefore, the differences that were found may have been due to demographic factors other than race/ethnicity. Indeed, the literature on ethnic differences in chronic pain is inconclusive, and further research is needed to uncover the differences (if any) in the experience of pain across ethnicity.

While the literature is still inconclusive with regard to whether there any major demographic differences, there is evidence that less formal education and low socioeconomic status are associated with a higher likelihood of depression (Brekke, Hjortdahl, Thelle, 1999). Additionally, while there is no current evidence that praying and hoping are ineffective or maladaptive coping strategies in African American

populations, it remains a possibility that one's ethnicity influences the way in which one experiences chronic pain, and thus, clinicians should be aware of this potential.

Therapists treating chronic pain should be sensitive to the possibility that individuals with less formal education and who are of lower socioeconomic status may have more risk for depression. Therapists should also be aware that individuals who are African American may have more difficulties with certain coping styles.

Comorbid Mental Health Disorders and Chronic Pain

While not much is known with regard to comorbid chronic pain and mental health disorders, it is well-established that individuals with comorbid chronic medical problems and mental illness have complicated needs that are different than the needs of those who suffer from only one of these problems and that are often not addressed in treatment (Gallagher, Brooks, & Penn, 2006; Comfort & Kaltenbach, 2000). Such individuals may be less likely than others to complete mental health treatments (Brooks & Penn, 2003), more likely to rely on emergency services and be hospitalized (Dickerson et al., 2003), and more likely to receive poor general medical care (Druss et al., 2000). There is also some evidence suggesting that they are less likely to benefit from combined medical treatments: In a study of 40 veterans with chronic pain, 86% of those with no Axis I disorders experienced improvements in pain severity whereas only 32% of those with an Axis I disorder improved (Workman, Hubbard, & Felker, 2002). Moreover, individuals with mental health diagnoses (e.g., current or recent substance dependence, post-traumatic stress disorder, major depression) have more severe medical disorders in comparison to those without mental health diagnoses (Much-Jorgensen et al., 2000).

Studies have also shown that an individual's rating of perceived ill health is a major predictor of maladaptive health behavior, specifically poor health-care utilization (Dixon, Goldberg, Lehman, & McNary, 2001), as well as an increased risk of mortality—even when controlling for other relevant factors (Idler & Benyamini, 1997).

Substance Use Problems and Chronic Pain.

The prevalence of addictive disorders has been reported to fall anywhere from 3% to 26% of the general population and 19% to 25% of the hospitalized population. Of those who experience a major trauma, it has been reported that 40% to 60% will develop a substance abuse problem (Rosenblatt & Mekhail, 2005). Additionally, a considerable number (approximately 3% to 16%) of those who experience chronic pain also experience substance abuse or dependence problems (Rosenblatt & Mekhail, 2005). Many individuals use substances as a way to self-mediate, or alleviate, the symptoms of their chronic pain. This presents a dilemma for health care providers treating individuals with comorbid chronic pain and substance abuse or dependence issues, as one of the common medical treatments for chronic pain is to prescribe opiate therapy. Much of the literature on this comorbidity focuses on this dilemma, although that topic is beyond the scope of this review.

Patients with active substance use disorders often have a more difficult time managing and coping with chronic pain, and substance use often is the way in which patients attempt to cope with their pain. However, despite evidence that psychological treatments for both chronic pain and substance abuse or dependence are effective, current treatment for individuals presenting with both chronic pain and substance abuse or

dependence usually focuses on only one of these problems—and often that treatment is medication (Rosenblatt & Mekhail, 2005). Very few studies have evaluated the use of integrative treatment for both chronic pain and substance disorders. This could be due, in part, to the finding that those with substance problems are more likely to reject alternate ways of managing pain (Currie, Hodgins, Crabtree, Jacobi, & Armstrong, 2003).

One study of a 10-week pain-management program specifically designed for recovering substance abusers found that at post-treatment, and 3-month and 12-month follow-up, half of the participants showed statistically significant improvement on at least one outcome measure, including pain, emotional distress, medication reduction, and coping style (Currie, Hodgins, Crabtree, Jacobi, & Armstrong, 2003). Group size ranged from five to nine patients and the therapeutic style was cognitive behavioral.

More investigation is needed on effective treatment methods for comorbid chronic pain and substance disorders. However, Currie, Hodgins, Crabtree, Jacobi, and Armstrong (2003) offered promising preliminary evidence that pain, emotional distress, medication reduction, and/or coping style may be improved using a cognitive-behavioral pain management group program that focuses on CBT psychoeducation, improving self-efficacy for pain management, and substance abuse education and relapse prevention. This may work because it provides individuals with an alternate way to cope with their chronic pain.

Depression and Chronic Pain.

The prevalence of depression in individuals with persistent pain is considerably higher than in the general population. Even when conservative diagnosis criteria are used,

it is found that depression occurs alongside pain in about 30-54% of chronic pain cases (Banks & Kerns, 1996). Additionally, depression puts individuals at risk for initially suffering from pain, pain chronicity, experiencing more highly intense pain, feeling pain in more parts of the body, and worse disability as the result of pain (Dickens, McGowan, & Dale, 2003).

Smith, O'Keeffe, and Christenson (1994) compared the role of cognitive distortions (specifically, catastrophizing, overgeneralization, personalization, and selective abstraction) among those with (a) comorbid chronic pain and depression, (b) chronic pain only, and (c) depression only, and (d) no physical or psychological diagnosis. Patients were given vignettes to read that were either pain-related or non-pain related, and were asked to identify the degree to which they agreed or disagreed with the cognition following each vignette. It was found that patients diagnosed with chronic pain and major depression endorsed significantly more cognitive distortions than normal controls and patients diagnosed with chronic pain only. Additionally, patients with comorbid chronic pain and depression were more likely to have high levels of cognitive distortions in pain-related situations than in non-pain situations, thus complicating their condition further. In contrast, nonpain, depressed patients showed equally high levels of cognitive distortions across both categories.

Arnow et al. (2006) found that in a sample of hospital patients, those with major depression were more likely to report disabling chronic pain than those without major depression. Also, depressed patients with chronic pain reported poorer health-related

quality of life, greater symptom severity, and a higher prevalence of panic disorder than any other patients.

Healthcare professionals working with patients who have comorbid pain and depression should pay close attention both conditions, as research suggests that this may be necessary in order to see improvement in either one (Arnow et al., 2006). More specifically, patients with chronic pain and depression endorse more cognitive distortions when dealing with their pain than patients with chronic pain or depression only (Smith, O’Keeffe, & Christenson, 1994). These tend to be catastrophizing, overgeneralization, personalization, and selective abstraction. Thus, treatment for comorbid pain and depression should focus on cognitively restructuring these pain-related distortions.

Post-Traumatic Stress Disorder and Chronic Pain.

Patients with post-traumatic stress disorder (PTSD) often present with more than one comorbid physical and/or mental health problem. Common mental health problems associated with PTSD include an increased rate of alcohol consumption and depression, and the most commonly reported physical problem is pain (Asmundson, Coons, Taylor, & Katz, 2002). In fact, in one of the first studies of comorbid PTSD and chronic pain, it was found that roughly 1 in 5 veterans with PTSD also has chronic pain (White & Faustman, 1989). Moreover, PTSD symptoms are strongly and positively correlated with pain ratings and pain-related disability (Bryant, Marosszeky, Crooks, Baguley, & Gurka, 1999), as well as functional impairment (Wagner, Wolfe, Rotnitsky, Proctor, & Erickson, 2000). Of the military veteran population, these associations exist independent of the war with which the veteran was involved (Asmundson, Coons, Taylor, & Katz, 2002). These

relationships seem to hold over time, as well. In at least one large scale study of outpatients with PTSD, it was found that PTSD symptoms were related to reporting more pain complaints over time even after controlling for other disorders (Andreski, Chilcoat, & Breslau, 1988).

Recent research has identified anxiety sensitivity as one factor that may predispose individuals to both PTSD and chronic pain, which may partially account for the high comorbidity rate among the two. Anxiety sensitivity can be defined as a tendency to believe that anxiety symptoms are indicative of harmful or dangerous consequences. An individual who is high on anxiety sensitivity may interpret benign somatic sensations, such as mild stomach upset, as indicative of something more serious, such as an ulcer (Asmundson, Coons, Taylor, & Katz, 2002). Research has found anxiety sensitivity to exist in high levels within PTSD samples (Taylor, Fedoroff, Koch, Thordarson, Fecteau, & Nicki, 2001). Therefore, an individual with PTSD may experience chronic pain somewhat differently than someone without PTSD.

Other research on the comorbidity of PTSD with chronic pain proposes a “mutual maintenance” model, wherein the cognitive, behavioral, and affective components of chronic pain maintain and worsen the symptoms of PTSD, and these same components of PTSD maintain and exacerbate chronic pain (Sharp & Harvey, 2001). For example, chronic pain may remind an individual of his or her traumatic experience that precipitated the development of PTSD, thereby exacerbating the trauma symptoms. In turn, the exacerbation of the trauma symptoms may lead to the avoidance of pain-related situations, which can increase pain-related distress and perceived disability.

Because PTSD and chronic pain are mutually maintaining, optimal treatment should include attention to both issues, although there is no research on whether treating them simultaneously or in succession is better (Asmundson, et al., 2002). Research has suggested adapting existing cognitive-behavioral treatment programs in order to include components addressing PTSD. Reducing anxiety sensitivity may help lessen symptoms of both problems. Sharp and Harvey's research (2001) suggests that the clinical implications of these findings are that reducing both cognitive avoidance (e.g., encouraging patients to confront their pain mentally) and behavioral avoidance (e.g., helping patients increase their activity levels) will enable patients to see the "maintenance" connection between their PTSD and pain symptoms.

Cognitive-Behavioral Treatment for Chronic Pain

The most common approach to the evaluation and treatment of chronic pain is multidisciplinary. This often includes a psychological component, which is usually cognitive-behavioral therapy (CBT) (Lebovits, 2002; Wells-Federman, Arnstein, & Caudill, 2002). Research on CBT programs has found that chronic pain patients can improve their confidence in their ability to cope with pain (Wells-Federman, Arnstein, & Caudill, 2002). Although research is sparse, studies have consistently shown that there is no significant difference in outcome between group and individual CBT therapy for chronic pain (Frettlloh & Kroner-Herwig, 1999; Johnson & Thorn, 1989; Turner-Strokes et al., 2003). Group therapy is sometimes preferred because is it more cost-effective. Also, individuals with chronic pain may benefit from the social validation inherent in group formats, as individuals with chronic pain may often feel isolated and

misunderstood (Thorn & Kuhajda, 2006). In terms of group size, five to seven participants may be ideal for this type of therapy and population (Thorn & Kuhajda, 2006).

Typically, there are several components of cognitive-behavioral treatment for chronic pain. Treatment often begins with psychoeducation about the mind-body relationship. Another focus of treatment includes cognitive restructuring individuals' beliefs about their pain. The goal is for individuals to view their pain as manageable. Cognitive restructuring also aims to change maladaptive thoughts about the self or one's illness. Often this involves addressing and reshaping negative automatic thoughts, as well as tendencies to engage in overgeneralizing and catastrophizing about pain. Additionally, relaxation training is often included to redirect the focus away from pain and establish a sense of self-control (Lebovits, 2002).

Fishbain (2000) reviewed 24 meta-analysis outcome studies of nonsurgical chronic pain treatment (including, but not limited to medication, cognitive behavioral psychotherapy and physical therapy) and found several commonalities. First, it was determined that researchers typically measure morbidity, functional status, health status, and quality of life as outcomes. It was also found that among the most important outcomes to patients are longevity, the absence of pain, the absence of psychological symptoms, and normal functioning. Although Fishbain concluded that nonsurgical pain treatment is effective for chronic pain, conclusions from studies comparing the relative efficacy of specific pain treatments are not consistent. Fishbain also found that the literature seems to suggest that combining treatment from different treatment modalities

may be superior to one treatment alone. It was concluded, based on the reviewed literature, that the most effective pain treatment would be a multidisciplinary program including physical therapy, cognitive-behavioral therapy, psychoeducation, pain medication, and psychopharmacological treatment.

Although the body of literature as a whole is inconclusive, there are several recent studies that offer evidence for the efficacy of certain aspects of cognitive behavioral treatments for chronic pain. In one example of a nurse-led treatment for chronic pain (Wells-Federman, Arnstein, & Caudill, 2002), a weekly CBT program was designed to decrease pain severity, pain-related disability, depression, and healthcare visits, as well as increase self-efficacy for managing pain. The program included psychoeducation regarding how lifestyle factors (e.g., diet, physical activity, and both physical and emotional tension) can impact chronic pain, relaxation training, cognitive restructuring of negative automatic thoughts and cognitive distortions. Significant reductions were found for pain severity, pain-related disability, and depression. Improvements in self-efficacy were related to less pain, disability, and depression. However, as the researchers pointed out, the study had several major limitations: the sample was not representative of a general population (it excluded ethnic minorities), there was no control group, and the study included only a pre- and post-intervention measurement of outcome variables.

In one of the other few recent studies examining the cognitive-behavioral treatments of chronic pain, a randomized clinical trial of targeted cognitive-behavioral treatment was found to reduce catastrophizing in chronic pain sufferers (Thorn et al., 2007). The treatment consisted of a weekly group CBT intervention that focused on

reducing pain catastrophizing for 10 weeks. Compared with wait-list controls, patients receiving the CBT intervention reported significant decreases in both catastrophizing and anxiety, as well as increased self-efficacy for pain management. Additionally, approximately half of the patients receiving the intervention experienced clinically significant reductions in their chronic pain.

In the only other known small-n study of the cognitive-behavioral treatment specifically designed for comorbid chronic pain and Axis I disorders, Otis et al. (2009) examined a 12-week group treatment for co-morbid chronic pain and PTSD with six military veterans. The results were mixed; for the three participants that remained in the treatment, there were improvements for some participants, a worsening of symptoms for others, and no changes for some. Improvements were measured in terms of PTSD symptoms, pain severity, psychological distress, and disability. Worse outcomes were thought to be accounted for by one or more of the following: stressful events during the course of treatment; specific diagnosis combinations; and a lack of engagement in treatment. Although the participants with the worst outcomes did experience stressful events during the study, this was also the case for other participants.

Present Study

In a recent review of the biopsychosocial model of pain, Gatchel, Peng, Peters, Fuchs, and Turk (2007) presented several recent studies that support the effectiveness of cognitive-behavioral techniques in the management of chronic pain (e.g., Linton & Norton, 2006). Most of the studies presented were embedded in a broader pain treatment programs, including general medical management. Other research, such as Wells-

Federman, Arnstein, and Caudill (2002) and Thorn et al., (2007) also support the effectiveness of such interventions. The present intervention is a new group therapy that was specifically designed for patients with comorbid Axis I disorders and chronic pain. The participants were patients at the Community Health Alliance of Pasadena (CHAP), and were therefore already receiving general medical care at CHAP. For most participants, the care also included medication management for both their chronic pain and mental health issues.

The three week, six session group intervention tested in this study represents a synthesis of established cognitive and behavioral treatments for chronic pain and psychological disorders. Some of these treatments were based on established chronic pain treatments used by the Veterans Administration, although it should be noted that the VA treatments were not designed for individuals with both co-morbid chronic pain and significant mental health difficulties.

Broadly, this intervention featured psychoeducation on the course and nature of chronic pain as well as how psychological factors may influence pain and vice versa, cognitive-behavioral techniques, behavioral relaxation techniques, and discussions of how cognitions and emotions interact, in keeping with the cognitive-behavioral therapeutic orientation. Although the combination of techniques within the intervention tested here was predicted to impact all outcomes, specific techniques were aimed at particular outcome variables. Also, because the goals of the intervention were aimed at improving both chronic pain management *and* mental health above and beyond any

effects on pain, some aspects of the treatment were targeted at chronic pain, some aimed at improving mental health, and some focused on both.

More specifically, therapeutic goals included (a) improving patients' sense of self-efficacy for managing their pain, (b) decreasing patients' pain severity levels, (c) decreasing patients' endorsement of negative pain-related beliefs (including perceived disability), (d) decreasing patients' endorsement of negative beliefs viewed as contributing to a variety of Axis I disorders, and (e) improving patients' individual mental health. Techniques used to increase self-efficacy included psychoeducation, discussions about lifestyle changes (e.g., developing an exercise routine with one's doctor, identifying new ways of completing daily tasks), and relaxation exercises (e.g., "counting the breath"). These same behavioral techniques were also used to target pain severity. Psychoeducation and lifestyle changes would help people identify what makes pain better or worse, and lead them to make changes accordingly. Relaxation exercises would directly accomplish this by providing a way for participants to initiate a relaxation response and focus on their breathing instead of their pain. To address negative pain-related beliefs, I employed cognitive-behavioral exercises aimed at identifying and restructuring negative automatic thoughts, negative beliefs, and cognitive distortions related to pain and disability. Similarly, identification of maladaptive behaviors (e.g., coping strategies such as avoidance of all activities due to pain) and how those behaviors can cause and maintain negative thinking was also aimed at reducing negative pain-related beliefs.

To reduce negative beliefs unrelated to pain and to improve mental health, these same cognitive-behavioral techniques were used but instead were applied to Axis I Disorder-specific thoughts (e.g., negative thoughts about one's value, the dangerousness of the world, etc.) and behaviors (e.g., socially isolating oneself). Other techniques targeting the goal of improved mental health were discussion of lifestyle changes, discussions about psychological symptoms and distress, and use of relaxation exercises. Discussions of lifestyle changes were intended to lead participants to make changes that would improve their mental health, whereas discussions about psychological symptoms and distress were meant to enable participants to make more informed choices regarding their mental health care by increasing their understanding of mental health disorders. Moreover, discussions about psychological problems might increase participants' levels of self-acceptance and social support related to their mental health issues, which could alleviate distress.

Additionally, the relationship between psychological symptoms and pain symptoms was highlighted repeatedly throughout the treatment to encourage participants to think about how their psychological disorders may affect their pain disorders and vice versa. This was done in an effort to continually provide participants with opportunities to apply the biopsychosocial model to their own conditions. Finally, inherent in any group treatment is the aspect of general social support, and it was thought that this aspect would have a positive impact on all therapeutic goals, although the effect of social support on co-morbid chronic pain and Axis I Disorders was not a focus of the study and therefore was not measured specifically.

This intervention was tested on a group of patients with a mix of Axis I disorders. There were several reasons this was considered preferable. First, a goal of the study was to develop and test an intervention that could be broadly applied. This is desirable not only because it is efficient but also because it is especially helpful for underfunded medical and mental health agencies to have an “all access” intervention that is readily available to a range of patients and requires less staff training. Second, individuals with comorbid chronic pain and Axis I diagnoses often have more than one Axis I diagnosis, and so a group requiring one and only one Axis I diagnosis would serve relatively few pain patients. Finally, having a mixture of diagnoses within the group may facilitate learning. Watching others with different problems apply the same techniques may (a) deepen members’ understanding of the techniques, (b) help members remember these techniques in the long term, and (c) improve members’ ability to think flexibly about these techniques and generalize their application to future problems.

Consistent with previous studies of interventions for chronic pain (Wells-Federman, Arnstein, & Caudill, 2002; Thorn et al., 2007), it was hypothesized that patients who attended the treatment would improve on several variables. Specifically, compared with the pre-intervention phase, it was predicted that the intervention phase would be associated with lower perceived levels of each of the following: pain severity, disability, and negative mood (Wells-Federman, Arnstein, & Caudill, 2002). Similarly, it was predicted that the intervention phase would be associated with fewer and less severely negative pain-related beliefs, as well as higher levels of self-efficacy for pain management (Thorn et al., 2007). In addition, it was thought that participants receiving

the intervention would demonstrate a linear improvement in functioning on all outcome variables over the course of treatment.

Method

Participants

Participants consisted of 15 individuals who met criteria for both chronic pain and at least one Axis I psychiatric disorder, and who were already receiving healthcare services from CHAP. These services typically included some combination of wellness visits, diabetes management, hypercholesterolemia management, hypertension management, psychiatric medication management, chronic pain medication management, and individual solution-focused psychotherapy. Exclusionary criteria included being less than 18 years of age, psychosis, current substance dependence, and current suicidal ideation (defined as endorsing anything beyond fleeting suicidal ideations without intention to harm the self).

Participants were randomly assigned to a treatment group or a wait-list control group, with one exception: Two additional participants were added to the treatment group after the official recruitment phase to increase the chances of having data from participants who completed treatment. The treatment group ended up consisting of nine individuals, and the control group consisted of six. The two groups are described separately below, beginning with the treatment group.

Treatment Group.

The mean age of the nine participants in the treatment group was 51.67 years (ranging from 48 to 62), and approximately 78% ($n = 7$) were female. Most participants were African American (67%, $n = 6$), and the rest were either Caucasian (22%, $n = 2$) or Asian American (11%, $n = 1$). All nine participants had two or more Axis I diagnoses, with the most common primary diagnoses being Major Depressive Disorder ($n = 7$) and Substance or Polysubstance Dependence Disorder, In Remission ($n = 6$). Other diagnoses included Generalized Anxiety Disorder ($n = 2$); Panic Disorder ($n = 2$); Bulimia Nervosa, NOS ($n = 2$); Bulimia Nervosa, In Remission ($n = 1$); Bipolar Disorder NOS ($n = 1$); Kleptomania ($n = 1$); and Sexual Disorder NOS ($n = 1$). Primary pain sites were varied considerably. Six of the nine participants had pain in two or more different parts of the body, including two participants with diagnoses of fibromyalgia. The mean length of time participants had been experiencing chronic pain was 12.89 years (with a range of 1 to 40 years). Plural pronouns and possessives are used throughout this document to mask the gender of each participant.

In addition to pain and mental health diagnoses, information was gathered regarding participants' individual life circumstances and psychosocial stressors, concurrent treatments, any treatment changes, and daily medications. This was done to better understand each participant's chronic pain and mental health disorder – as well as each individual's outcomes – in context. Notable aspects from these above categories are summarized in Tables 4 through 6. Financial difficulties are not included in the tables, as this was a psychosocial stressor for every participant. In addition, it should be noted that although many participants were receiving concurrent individual psychotherapy, in each

case, the psychotherapy was on an irregular schedule (e.g., approximately once or twice per month) and in total, had begun no more than 4.5 months prior to the start of the study. “History of psych tx,” as listed in Table 5 included any combination of individual psychotherapy, group psychotherapy, in-patient psychiatric care, twelve-step programs, and any substance-related rehabilitation program. “# Pain meds” include both prescription and over-the-counter medications. “Pain tx, not meds,” listed in Table 5 meant any treatment that was not medication. This tended to include any combination of the following: regular use of heat or ice packs, exercise meant to alleviate pain, stretches meant to alleviate pain, and regularly resting in order to reduce pain. In Table 6, “Temporary living situation” meant either living in a homeless shelter, living temporarily with friends or family, or a group sober living community. “Religious” meant that the participant regularly prayed, attended church, participated in a religious community, and/or frequently spoke about their religion being of high importance to their well-being.

Control Group.

The mean age of participants in the control group was 48.67, with a range of 39 to 52 years, and 67% ($n = 4$) were female. The group was 17% African American ($n = 1$), 17% Caucasian ($n = 1$), and 67% Hispanic/Latino participants ($n = 4$). Percentages do not add up to 100 due to rounding. Two participants had only one Axis I diagnoses, whereas the other four all had two diagnoses. The breakdown of Axis I diagnoses was as follows: Major Depressive Disorder ($n = 6$); Substance or Polysubstance Dependence Disorder, In Remission ($n = 2$); Panic Disorder ($n = 1$); and Generalized Anxiety Disorder ($n = 1$). Similar to the treatment group, primary pain sites varied considerably.

Five of the six participants had pain in two or more parts of the body, again, including two participants with diagnoses of fibromyalgia. The mean length of time participants had been experiencing chronic pain was 10.50 years (with a range of 3 to 24 years). As with the treatment group, Tables 5 and 6 summarize health and psychosocial variables for each control group participant.

Materials

Pain severity was assessed using the three-item Pain Severity Scale from the West Haven-Yale Multidimensional Pain Inventory (WHYMPI; Kerns, Turk, & Rudy, 1985; see Appendix A). The items assess pain intensity and suffering. Each question is rated on a 7-point Likert-type scale, and anchors for the rating scale vary across items. Questions include, “Rate the level of your pain at the present moment,” (0 = *no pain*, 6 = *very intense pain*), “On the average, how severe has your pain been during the last week?” (0 = *not at all severe*, 6 = *extremely severe*), and “How much suffering do you experience because of your pain?” (0 = *no suffering*, 6 = *extreme suffering*). Total scores can range from zero to six, with higher numbers indicating more severe pain. The WHYMPI has been used in studies of veterans with comorbid mental illness and chronic pain (e.g., Lombardo, Tan, Jensen, & Anderson, 2005), and scores have yielded internal consistency coefficients from .70 to .90 (for all scales) and a two-week retest reliability of .62 to .91 (Kerns, Turk, & Rudy, 1985). The validity of scale scores has also demonstrated in samples of minority patients with chronic pain through strong positive correlations with established measures of pain severity and suffering due to pain (Edwards, Doleys, Fillingim, & Lowery, 2001).

The Harm, Medical Cure, and Medication subscales from the Survey of Pain Attitudes, Short Version (SOPA-32; Jensen & Karoly, 1991; See Appendix B) was used to measure negative pain-related cognitions. The SOPA-32 assesses the degree to which participants hold certain beliefs about pain. Each item is rated on a 5-point Likert-type scale, where response options range from 0 (*this is very untrue for me*) to 4 (*this is very true for me*), and subscales are scored by averaging item responses (reverse scoring as necessary). The Harm subscale consists of four items (e.g., “If I exercise, I could make my pain problem much worse”), and subscale scores can range from zero to four. High scores indicate agreement with the belief that one should avoid physical activity due to his or her pain. The Medication subscale consists of three items (e.g., “I have had the most relief from pain with the use of medications”), and total scores can range from zero to three. High scores indicate agreement with the belief that medications are an appropriate treatment for chronic pain. Although this belief may not seem “negative,” it is associated with negative outcomes and possible overreliance on medication for pain management regardless of effectiveness (e.g., “I will probably always have to take pain medications”). Indeed, previous research has shown that higher SOPA Medication Subscale scores are related to both higher levels of pain interference in individuals with spinal cord injury (Raichle, Hanley, Jensen, & Cardenas, 2007) and a greater likelihood of having visited the emergency room in the past three months among a mixed group of chronic pain patients (Jensen, Turner, Romano, & Lawler, 1994). The Medical Cure subscale consists of five items (e.g., “I expect a medical cure for my pain”), and subscale scores can range from zero to five. High scores indicate agreement with the belief that

there is a medical cure for his or her pain. As with the last scale described, previous research has found the SOPA Medical Cure subscale to be related to higher levels of pain interference in a chronic pain population (Raichle, et al., 2007). Finally, the Disability subscale consists of four items (e.g., “My pain does not stop me from leading a physically active life”), and subscale scores can range from zero to four. Higher numbers indicate greater agreement with the overall belief that one is disabled by his or her pain. The SOPA is widely used in pain research, and many studies have reported good construct validity through correlations in the expected direction with measures of pain coping strategies, pain-related disability, and pain intensity (Jensen, Turner, Romano, & Lawler, 1994; Strong, Ashton, & Chant, 1992). Evidence that SOPA scores have good two-week test-retest reliability has been documented with correlation coefficients ranging from .80-.91, and internal consistency coefficients have been found to range from .56-.73 in studies using samples of patients with chronic pain (Jensen, Turner, Romano, & Lawler, 1994).

Subscales from the Positive and Negative Affect Schedule – Expanded form were used to assess fear, hostility, and sadness (PANAS-X; Watson & Clark, 1994; See Appendix C). Each subscale requires patients to rate the extent to which they have experienced each of several related emotions over the past few days on a scale ranging from 1 (*very slightly or not at all*) to 5 (*extremely*). Subscales are scored so that higher numbers indicate higher levels of that emotion, and total scores for each subscale are found by summing the individual item ratings. Sample items for the subscales are as follows: Fear (e.g., afraid, scared), Hostility (e.g., angry, disgusted), and Sadness (e.g.,

sad, blue). Possible total scores on the Fear and Hostility subscales range from 6 to 30, and total scores on the Sadness subscale ranges from 5 to 25. One of the populations on whom the PANAS-X was developed was a sample of adults with chronic fatigue syndrome, as well as a sample of adults with psychiatric problems. All scales used for this study have been found to demonstrate good internal consistency reliability on a population of mixed inpatients and outpatients, with alpha coefficients ranging from .79 to .92 and two-month test-retest coefficients ranging from .35 to .41 (Watson & Clark, 1994). Convergent and discriminant validity for the PANAS-X has been demonstrated via correlations with peer-judgments in studies using undergraduate samples, as well as with established measures of similar affect constructs (Watson & Clark, 1994). There are no previous studies in which the fear, hostility, and sadness subscales were used with samples of chronic pain patients, so validity data for that population are unavailable.

Self-efficacy was measured using the five-item Self-efficacy for Pain Management subscale from the Chronic Pain Self-Efficacy Scale (Anderson, Dowds, Pellez, & Edwards, 1995; see Appendix D). Sample items include, “How certain are you that you can make small-to-moderate reductions in your pain by using methods other than taking extra medications?” and “How certain are you that you can continue most of your daily activities?” Answers to each item can range from 10 (*very uncertain*) to 100 (*very certain*). Total scores are calculated by averaging item responses and range from 10 to 100, with high scores indicating the high levels of self-efficacy for pain management. The validity and reliability of scores on the Chronic Pain Self-efficacy Scale has been supported in a variety of research studies on various populations (Anderson, Dowds,

Pellez, Edwards, & Peeters-Asdourian, 1995). Construct validity has been demonstrated through significant correlations between the subscales and measures of depression and hopelessness in the expected directions ($r = -.62$ to $-.29$; Anderson, Dowds, Pellez, Edwards, & Peeters-Asdourian, 1995). Internal consistency reliability estimates as high as .95 have been reported in studies of chronic pain patients with depressive symptoms (Wells-Federman, Arnstein, & Caudill, 2002).

To better understand any observed effects of treatment (or a lack of effects) on individual participants, survey packets for participants in the treatment condition included two questions about their treatment regimes: "Have there been any major changes to your treatment regime since last week? If so, please explain what these changes were." and "What, if any, medications have you taken today?" Treatment group participants were also asked these same two questions at the beginning of each treatment session. See Appendix E for this set of questions.

The Mini International Neuropsychiatric Interview (MINI; Sheehan et al., 1998; See Appendix F) was used during intake interviews to provide a standardized procedure for determining Axis I diagnoses during intake interviews. There are several versions of the MINI, including a short version, the MINI-Screen (Sheehan, et al., 1998). The MINI-Screen is a semi-structured interview that consists of 22 questions and screens for DSM-IV-TR diagnoses, including mood disorders, anxiety disorders, eating disorders, trauma, psychosis, and substance abuse and dependence. It can be administered in 15 minutes. Participants are read aloud each question and asked to indicate "yes" or "no" as to whether they have experienced each symptom. The present study also included a

“maybe” option, which, if endorsed by a patient, was followed up for more information so as to reach a definitive “yes” or “no.” For each question, participants may be asked follow-up questions for clarity and informational purposes. The MINI has been used in at least one other study using a sample of patients with chronic pain (Castro et al., 2009). Construct validity has been demonstrated through significant correlations with other diagnostic tools. In studies comparing MINI diagnoses with the Structured Clinical Interview for DSM-III Disorders, Patient Rated diagnoses (SCID-P; Spitzer et al., 1990), correlation coefficients ranged from .45-.85. The MINI has been demonstrated to have good test-test reliability with correlation coefficients ranging from .75 to above .90 (Sheehan et al., 1997).

Intervention

The intervention consisted of six 90-minute meetings that occurred twice weekly for three weeks. Each meeting was led by the author of this dissertation, who is an advanced doctoral student in clinical psychology. The content of each workshop included diverse strategies for managing chronic pain, as well as educational components to provide information regarding chronic pain. The intervention was based on a biopsychosocial framework, and integrated mostly cognitive-behavioral therapy techniques with some components of ACT Acceptance and Commitment Therapy (ACT). The treatment manual can be found in Appendix H.

One overarching theme that was discussed at the beginning and emphasized throughout the six sessions was the distinction between pain and suffering. Pain was defined as unpleasant physical sensations, such as burning, aching, soreness, stabbing,

throbbing, etc (Tearnan, 2007). “Suffering” was defined as the negativity that can arise from chronic pain, such as negative emotions, stress, relationship conflicts, etc. In short, in the world of chronic pain, pain is a concrete, physical precursor to general misery (Tearnan, 2007). In keeping with a biopsychosocial framework, another major theme of the intervention was the interrelationships among one’s thoughts, feelings, behaviors, knowledge, pain, and suffering. This idea was first presented using a poster-sized model of Figure 1, and was referred to throughout the six sessions. In discussing this theme, I emphasized that it is often more fruitful to work toward easing suffering than pain, and that it is possible to make pain better or worse through one of these five means.

In accordance with an ACT framework, the relationship between pain and suffering was described as follows: People often adapt their lives in undesirable ways in order to avoid or control their experience of pain; however, because the nature of chronic pain is such that it is inherently difficult to completely eliminate, this tactic often backfires and causes people to experience negative emotions and severely limited lifestyles (Dahl & Lundgren, 2006). Thus, focusing one’s energy on eliminating, avoiding, or controlling one’s chronic pain leads to more suffering, which can lead to more pain, then more suffering, and so a vicious cycle is created (Hayes, Strosahl, and Wilson 1999). While specific pain-reducing techniques were discussed throughout the sessions, it was emphasized that it is often easier to change suffering than pain and that individuals can lead a satisfying life while still having pain. Below, I discuss each of the ways in which we worked on altering the suffering that accompanies pain, as well as the ways in which pain was addressed directly.

All material, including that which was borrowed from the VA protocol, as well as that which was added by this author, was organized into four different factors that can influence the experience of pain and suffering, each of which were included in each session: (a) psychoeducational (e.g., “What is chronic pain?” “What are emotions?”), (b) cognitive (e.g., “How do you think about chronic pain? How can you change the way you think about it?”), (c) affective (e.g., “How can depression affect your chronic pain and vice versa?”), and (d) behavioral (e.g., relaxation technique training). Respectively, these components were referred to in sessions as what one can “Know,” “Think,” “Feel,” and “Do” about chronic pain and mental health. The intervention was structured this way for two reasons. First, this structure made the material easier for participants to categorize, understand, and remember. Also, this structure offered a degree of standardization across sessions, which was consistent with the dose-response hypothesis tested in the study. The content relating to each of the four components varied from session to session, but there was some repetition between sessions to reinforce certain concepts.

Procedure

Interviews were conducted with each potential participant to screen for eligibility and exclusionary criteria. Each interview lasted approximately 50 minutes. The first part of the interview included questions about basic demographics including as date of birth, race/ethnicity with which the interviewee identified himself or herself, phone number, and mailing address. In the second part of the interview, participants were asked how

they were referred to the study, what interested them in participating, how and when their chronic pain began, how chronic pain affects their life, and how they relate to their pain (“How do you feel about your chronic pain?”). Other topics relevant to this section of the interview included what treatments participants have tried in the past and what treatments participants were currently receiving. This topic also included questions about recreational drug and alcohol use. In order to avoid interviewer bias, questions were asked in an open-ended fashion, followed up by more specific questions. Next, participants were screened for symptoms of depression, as this is the most common mental health disorder that is comorbid with chronic pain. As part of this depression assessment, participants were asked about past and current suicidal ideations and attempts. The MINI was then administered in order to further screen for additional Axis I disorders. When the interviewee endorsed a symptom, follow-up questions were asked for the purposes of gaining both clarity of the interviewee’s own terms and specificity of the symptoms. At the end of the interview, participants were told whether or not they were eligible, and to which group they had been assigned. Group assignments were determined prior to interviews so as to inform clients as early as possible of what they could expect by participating in this study, as well as to ensure that assignment was done in the same way for each participant.

Treatment group participants were mailed surveys twice weekly throughout the duration of the six-week study, and began the twice weekly group intervention during the latter half (weeks 4 through 6) of the study. Control group participants were also mailed surveys twice weekly for the entire six weeks. They were then given the opportunity to

receive the twice weekly, three-week group intervention after all data were collected. Participants were compensated \$3 for each survey that they completed, and any participant that completed all 12 surveys was given a \$15 “bonus.” Therefore, participants could earn up to \$51 by participating in the study. Payment was provided in the form of a money order, mailed to the participant at the end of the study. On treatment days, the treatment group members were also asked to fill out a two-question survey asking whether they had experienced any changes to their treatment regime and what medications they had taken that day. No additional compensation was provided for answering these two questions.

Data Analytic Strategy

Simulation modeling analysis (SMA; Borckardt et al., 2008) was used to analyze the time series data for each participant. This approach allows researchers to test each participant’s pre- to post-treatment progress separately rather than as part of aggregated change in a sample of participants. SMA controls for autocorrelation and has been shown to have high statistical power for short time series. The software package SMA Version 8.4.11, which was designed specifically for single-subject clinical-case analysis applications, was used to execute this approach (Borckardt, 2006).

Two different models were used to investigate the effects of the intervention on the outcome variables for each participant. The first model addresses the question, “Was this client functioning better during the intervention phase of the study than the baseline phase of the study?” This model essentially compares the average levels of each outcome variable during the baseline phase to the average levels during the intervention phase,

correcting for autocorrelation between subsequent observations in the repeated observations of the variable. This analysis begins by dummy-coding the independent variable representing phase of the study (0 = Baseline, 1 = Treatment) and calculating the point-biserial correlation coefficient between this stage variable and the outcome variable. I chose to use Pearson's r as the coefficient rather than Spearman's Rho because most of the empirical testing of SMA used this approach (Borckhardt, et al., 2008).

The autocorrelation, $r(\text{Lag } 1)$, between each of the data points is determined next. The third step involves examining the significance of the correlation coefficient. To accomplish this, the SMA program randomly generates thousands of additional data sets, drawn from a null distribution of 5,000 data sets. Each data set has the same autocorrelation value and number of observations as in the original, and the point-biserial correlation coefficient for each data set will be calculated in the same way as it was for the original. If the probability that the point-biserial coefficient found in the original data set will be found in the null distribution of data sets is lower than the test alpha level ($p < .05$), then the null hypothesis can be rejected. This significance is determined by examining the number of times that the absolute value of each point-biserial coefficient found for each of the simulated data sets is larger than the absolute value of the original point-biserial coefficient ("hits"), and then dividing that number by the number of simulated data sets.

The second model involves a dose-response approach that examines whether outcomes improve in a linear fashion during the treatment phase. The analysis testing this model proceeds in a very similar fashion to that described for the first model. The main

difference is in the coding of the variable representing the stage of the study. For this analysis, the phase variable was be coded as a “0” in the pretreatment stage. In the intervention phase, this variable was be coded according to number of the session (e.g., “1” = session 1, “2” = session 2, etc.). A Pearson correlation coefficient was then calculated between the phase variable and the outcome variable. Coding the phase variable in the aforementioned fashion creates a slope vector that is flat during baseline and increases linearly during treatment; therefore, a negative correlation with this vector indicates that an outcome variable was relatively flat during the baseline phase and then decreased in severity during the treatment phase. A positive correlation with this slope vector means that an outcome variable was also flat during baseline but then increased during the treatment phase. The method of establishing statistical significance of the correlation coefficient was determined in the same way as for the first model.

Missing data was handled differently depending on whether they were missing at the item or scale level. When participants responded to most but not all items in a scale, the scale was scored by taking the average of all available items. For example, if a survey had three items and one was not completed, then the survey was scored as though it was a two-item survey. Some evidence suggests that this strategy can be reasonably well behaved (Shafer & Graham, 2002). Missing data at the scale level (i.e., an entire survey was missing at a certain time point) were omitted from that participant’s data stream for that variable.

Results

Compliance and Quality of Data

Every participant in both the treatment and control group remained in the study. However, there are several participants for whom results should be interpreted with caution due to problems with returning surveys and understanding survey instructions. Participants with these issues are briefly discussed here since this information has implications for interpretation of results.

Participant 010 initially misunderstood the directions for both the PANAS-X and the CPSES. These two surveys were filled out incorrectly at Times 1 and 2. I followed up with this participant, who was somewhat able to explain what their responses meant. Therefore, these data were included in analyses, even though the nonstandard manner of gathering them may have introduced noise in this participant's results.

Participant 014 also misunderstood instructions and completed the first two surveys at Time 1, which resulted in their Time 2 data being completely unusable. In addition, this participant's Time 11 and Time 12 surveys were lost in the mail. Thus, this participant was missing three entire points in their data streams, leaving only 9 data points—less than the minimum of 10 required for SMA (Borckardt et al., 2008). Thus, results for Participant 014 must be interpreted with caution.

Participant 015 forgot to complete the first survey, so all Time 1 data were missing completely. This participant also accidentally skipped page of the Time 2 survey packet, resulting in missing data for the entire PANAS-X survey. For this reason, this time point was omitted in analyses involving PANAS-X subscales for this participant.

Of the control group members, there was one participant, Participant 005, for whom no data could be used. Only half of this participant's surveys were received, due to this participant forgetting or losing surveys, or surveys getting lost in the mail. Therefore, results for the control group reflect findings for only five participants rather than six.

Main Analyses

Total scores for each outcome measure at each of the 12 measurement times were entered into the data stream as the dependent variable. Separate phase effect and dose response analyses were conducted for each of the 15 participants and for all nine dependent variables. In general, the hypothesized effects did not emerge across participants. Below, I briefly discuss statistically significant effects for each variable. Table 1 provides a summary of these findings. Tables containing means and standard deviations for all outcome variables for both the treatment group and the control group can be found in Appendix G (Tables G1 and G2, respectively).

Pain severity. There were significant phase effects for pain severity in two participants, only one of which supported the hypotheses. There was a statistically significant dose-response effect for Participant 008 ($r = -.83, p = .03$). This supports the hypothesis that there would be a linear decrease in pain severity over the course of the treatment phase. There was also a significant phase effect for Participant 010 ($r = .68, p =$

.02). This result was in the direction opposite of what was predicted, however, and suggests that Participant 010 experienced an increase in pain severity from baseline to treatment.

For Participants 002, 011, 014, and 015 there were trends toward statistically significant dose-response effects, albeit in varying directions. For Participants 002 and 015, this trend toward significance was in the negative direction, consistent with the predicted linear decrease in pain severity ($r = -0.62, p = .08$; $r = -.50, p = .10$, respectively). For Participants 011 and 014, however, the trend indicates the opposite of what was expected: a linear increase in pain severity during treatment ($r = .54, p = .09$; $r = .51, p = .06$, respectively).

As expected, none of the control group participants demonstrated significant effects for pain severity in the expected direction. However, Participant 006 indicated an increase in pain severity from baseline to what would have been the treatment phase ($r = .82, p = .04$).

Negative pain-related beliefs. The overall results for negative pain-related cognitions were that there were significant effects in the directions expected for four of the participants (Participants 002, 019, 011, and 012). These, as well as significant findings that were not in the expected directions, are explained in more detail below.

Harm subscale. Within the treatment group, there were significant effects for harm beliefs in the expected direction for only one participant, Participant 012, and a significant effect in the opposite direction for Participant 014. For Participant 012, effects included both a significant phase effect and a significant dose-response effect ($r = -.65, p$

= .03; $r = -.73$, $p = .01$, respectively). Thus, over the course of treatment, Participant 012 was less likely to endorse the belief that physical movement and exercise would worsen their chronic pain. There was a statistically significant phase effect for Participant 014 but in the direction opposite of that expected ($r = .67$, $p = .01$). For Participant 014, beliefs about the harmfulness of exercise increased from baseline to treatment.

Within the control group, one participant (Participant 013) displayed a significant phase effect for harm beliefs ($r = .89$, $p = .01$), although in a direction indicating an increase in the severity of this negative cognition. As expected, no significant, negative phase effects or negative dose-response effects were found within the control group.

Medication subscale. None of the participants exhibited significant effects for the Medication subscale of the SOPA. However, Participant 003 demonstrated a trend toward significance for a phase effect ($r = .60$, $p = .06$), although it was in the direction opposite of that predicted. In other words, this result suggests that Participant 003's reliance on medication grew stronger from baseline to treatment.

In the control group, one participant, Participant 009 displayed a similar trend toward significance for a phase effect ($r = .45$, $p = .10$). No other notable control group effects were found.

Medical cure subscale. None of the participants, across both groups, exhibited significant effects for the Medical Cure subscale of the SOPA, in either of the two participant groups. This indicates that participants did not change their views regarding hope for a medical cure to their pain.

Disability subscale. There were statistically significant findings for three of the treatment group participants for the Disability subscale of the SOPA, but only two of these participants demonstrated significant changes in the expected direction. There was a significant phase effect for Participant 002's perceived disability ($r = -.57, .04$), suggesting that, as expected, this participant thought of themselves as less disabled during the treatment phase than during baseline. There was also a significant dose-response effect for Participant 012's perceived disability ($r = -.82, p = .02$), which supports the prediction that there would be a gradual reduction in negative cognitions about one's physical ability level over the course of treatment.

The significant effects found for Participant 003 did not support the hypotheses. These effects included both phase effect and a dose-response effect ($r = .75, p = .02; r = .68, p = .05$, respectively). For Participant 003, cognitions related to perceived disability were greater during treatment than baseline, and increased over the course of treatment.

One participant, Participant 011, showed two trends toward significance for perceived disability, both in the direction predicted. Both the phase and dose-response effects for this participant approached significance ($r = -.65, p = .06; r = -.62, p = .08$, respectively).

Among the control group participants, there was one participant (Participant 001) for whom there was a significant dose-response effect ($r = -.74, p = .04$). No other significant effects were found among the control participants.

Negative emotions. Overall, there were statistically significant effects supporting hypotheses for negative emotions for only three participants. Findings for each of the three PANAS-X negative mood subscales are reported in more detail, below.

Fear. Only one participant, Participant 010, demonstrated statistically significant effects for the Fear subscale of the PANAS-X in the expected direction: a phase effect ($r = -.88, p = .03$) as well as a dose-response effect ($r = -.92, p = .01$). Respectively, these results indicate a decrease in Participant 010's fear level from baseline to treatment, as well as a linear decline in their fear level over the course of treatment.

No statistically significant effects for fear were found within the control group.

Hostility. Two participants demonstrated statistically significant effects for the Hostility subscale, one that aligned with the predictions and one that did not. Participant 008 showed a significant phase effect ($r = -.66, p = .02$), meaning that, in support of the hypotheses, they experienced hostility to a less severe degree during treatment as compared to baseline. For Participant 011, however, there was a significant dose-response effect in the positive direction ($r = .61, p = .04$), indicating that their feelings of hostility increased linearly over the course of treatment. This is the opposite of what was predicted.

There was also one participant, Participant 010, for whom there was a dose-response effect that approached significance and was consistent with hypotheses ($r = -.74, p = .07$). This finding suggests that Participant 010's level of hostility decreased steadily over treatment.

No statistically significant effects for hostility were found within the control group.

Sadness. There were two treatment group participants for whom there were significant effects in support of the hypotheses. There was a significant phase effect for Participant 008 ($r = -.62, p = .04$), and a significant dose-response effect for Participant 010 ($r = -.74, p = .05$). These findings suggest that Participant 008 was less sad during treatment than during baseline, and Participant 010 experienced a steady decline in her level of sadness over the course of treatment.

No effects for sadness were found among the control group participants.

Self-efficacy for pain management. There was only one participant for whom there was a significant self-efficacy finding in support of the hypotheses. Participant 011 showed a significant, positive, dose-response effect for self-efficacy related to pain management ($r = .89, p = .02$), meaning that they felt increasingly efficacious as treatment progressed. However, one participant, Participant 014 showed a significant effect in the direction opposite of that expected. For this participant, there was a negative dose-response effect ($r = -.57, p = .04$), meaning that Participant 014 felt less efficacious as treatment went on.

In the control group, there were two participants that demonstrated significant effects for self-efficacy for pain management. Participant 006 showed a significant, negative phase effect ($r = -.77, p = .05$), and Participant 009 showed a significant, negative dose-response effect ($r = -.68, r = .05$). Both of these participants' results represent a decrease in self-efficacy. There was one control member, Participant 001, that

demonstrated a trend toward significance for improvement on self-efficacy. For this participant, there was a dose-response effect that approached significance ($r = .55, p = .10$), indicating that this participant was experiencing a linear increase in self-efficacy over the course of the study.

Exploratory Analyses: Explaining Who Benefited from Treatment

Results were explored to determine if any factors differentiated participants who tended to benefit from treatment from others. Three different types of variables were considered: compliance variables, mental/physical health-type variables, and psychosocial variables. The results of these exploratory analyses are summarized in Tables 4 – 6. The participants who demonstrated the greatest number of significant effects that were in support of hypotheses were Participants 008, 010, 011, and 012. As can be seen in Table 4, these participants all had a medium to high level of engagement in the treatment, meaning that these members tended to participate during sessions by volunteering information about themselves, answering questions, etc. This is compared to the rest of the treatment group, which, overall, was less engaged (generally ranging from low to medium engagement). In addition, the participants who most benefited from treatment were among those who arrived consistently late to sessions.

One major health-related commonality among Participants 008, 010, 011, and 012 was that they all had a history of mental health treatment (as defined by involvement with psychotherapy, in-patient psychiatric treatment, and/or a 12-step program), although this was also true for the rest of the participants (see Table 5).

As can be seen in Table 6, all four participants were married with children, and three of these four participants were currently caretakers for one or more family members living in the home with them. These factors were not true for any other participant.

Discussion

This study served as a pilot test of a recently developed intervention for individuals with both chronic pain and an Axis I disorder. It was hypothesized that this intervention would help individuals improve in several areas, including (a) pain severity level, (b) number and severity of negative pain-related beliefs, (c) number and severity of negative emotions (fear, hostility, and sadness), and (d) self-efficacy for pain management. A quantitative multiple case design was used to investigate improvement in these areas of client functioning, where improvement was investigated in two ways: as a mean difference between baseline and treatment phases, and as linear improvement based on number of sessions received.

Main Findings

Overall, results of the study offered mixed support for hypotheses. The largest number of statistically significant results was found for pain severity and disability: Thirty-three percent of treatment group participants exhibited at least marginally significant improvement on pain severity and disability, although only one participant improved on both of these outcomes. An additional 33% of treatment group participants exhibited at least marginally significant worsening on pain severity. In contrast, statistically significant changes in pain severity and disability were seen in only one (20%) of the control group members. These results suggest that the intervention is most

likely to influence perceptions of disability and pain severity; however, it is just as likely to lead to perceptions of greater pain severity as lower severity.

Given this striking variability in results for perceptions of pain severity, results were further examined to determine if there were factors that differentiated participants whose pain severity increased versus those whose pain decreased. Inspection of results for the other main variables did not suggest any systemic differences between these two groups of participants. There were, however, other factors that were shared among the participants who improved. Each of the three participants whose pain level decreased (a) had only one chronic pain problem, (b) had previously received some form of mental health therapy, and (c) were religious. In contrast, no other treatment group participant met all three conditions. One control group participant who exhibited an increase in pain severity did meet all of these conditions. Interpretation of this commonality remains unclear, as there is no research that specifically measures the impact of spirituality on treatment outcome within a population of individuals with co-morbid chronic pain and Axis I disorders. The research on the impact of on the impact of spirituality and religion in chronic pain populations is mixed; some studies (Rippentrop et al., 2004) have suggested that religion has both positive and negative effects, whereas others have found evidence that daily religious and spiritual practice positively affects physical and mental health (Keefe et al., 2001). In terms of previous therapy, research suggests that individuals with previous psychotherapy experience have more positive expectations about group therapy (MacNair-Semands, 2002), and that expectations about treatment in chronic pain populations affect treatment outcomes (Campbell & Guy, 2007;

Kalauokalani et al., 2001), but the specific question of whether previous experience with psychotherapy leads to better outcomes in the treatment of co-morbid chronic pain and Axis I disorders has not been tested. Future research is needed to determine the role of this triad of factors in chronic pain intervention outcomes, especially in regards to pain severity. More broadly, research is needed to determine if there is a specific portrait of a patient most likely to improve from pain interventions.

Another plausible explanation for the disparate pain severity findings is that the measure of pain severity did not differentiate changes in the physical aspects of pain (physical pain sensations) from the affective aspects of pain (suffering). Chronic pain has long been considered to consist of both physical and affective components (Turk & Kerns, 1983). Thus, it is possible that the effects observed for pain severity reflected changes in physical pain, pain-related suffering, or both. This point notwithstanding, the generally high estimates of internal consistency for the Pain Severity subscale of the WHYMPI (Kerns, Turk, & Rudy, 1985) used in this study suggest that individuals may not differentiate pain and suffering. With that said, research on measures of chronic illness-related suffering has provided evidence of validation for chronic pain patients (Pictorial Representation of Illness and Self Measure; Kassardjian, et al., 2008). In addition, the typical ACT chronic pain treatment protocol calls for differentiating between pain and suffering (Dahl & Lundren, 2006). Given the dearth of research examining suffering as a separate outcome measure in the chronic pain population, questions remain as to whether participants can improve on one factor and not the other.

Results for self-efficacy for pain management were virtually identical for control and treatment group participants: generally null, with a mixed pattern of increases and decreases among those participants with statistically significant effects. This suggests that participating in the intervention had no additional impact on self-efficacy than not participating in the intervention. Perceived helplessness or a lack of self-efficacy has been found to be a strong contributor to perceived disability and pain level (Samwel, Evers, Crul, & Kraaimaat, 2006). Given this key role of self-efficacy in coping with pain, the lack of a treatment effect on self-efficacy may explain the large number of null findings. However, this possibility is complicated by the fact that predictable patterns of change in self-efficacy did not emerge. For example, those who did experience pain relief or decreased disability did not exhibit any significant changes in self-efficacy. These findings were unexpected, given previous research (Samwel, Evers, Crul, & Kraaimaat, 2006). Taken together, the null findings for self-efficacy among those who experienced pain relief or decreased disability, and the disparate findings for self-efficacy among those who experienced pain increases imply that this intervention was not effective in impacting participants' self-efficacy levels in any systematic way. Moreover, these findings raise questions about the role of self-efficacy in perceptions of pain severity and disability, at least at the within-person level.

All of the significant results for the negative affect variables were for treatment group participants, and all but one of these effects were in the anticipated direction. These findings seem to indicate that participation in this intervention is more effective in reducing negative emotions than treatment as usual. However, as with self-efficacy, the

pattern of significant results for affect did not consistently coincide in expected ways with the patterns of results for perceived pain severity and disability. Of the two participants whose negative affect decreased over treatment, one exhibited increased pain severity and one exhibited decreased pain severity. Moreover, perceived disability did not change in either of these participants. Any interpretation of this configuration of results is speculative. However, these results suggest that the intervention may have helped participants with aspects of their mental health problems in a way unrelated to their pain. Another possible interpretation is that the treatment helped these participants with pain-related suffering but not somatic pain symptoms.

Findings Among the Most Improved Participants

As previously mentioned, there were several compliance and psychosocial variables that were common among the four participants who benefited most from treatment. Exploratory analyses revealed that the participants that improved the most can be differentiated from the rest of the group in several ways. First, in addition all four of the participants who most benefited from treatment were currently married and had children. Not only were there few other treatment group participants who had either type of relationship, but these four were the only participants who had both marital partners and children. These members described their relationships with their families as close. Further exploration also revealed that none of the control group members were currently married, whereas over half of the treatment group was currently married, including the four participants that benefited most from therapy. Having these strong, meaningful relationships may have led to better treatment outcomes among the treatment participants.

Research has found that social support, including marital relationships can influence responsiveness to pain treatment. For one, negative spouse responses to the patient's pain can increase pain severity (Kerns et al., 1990; Turk, Kerns, & Rosenberg, 1992; Flor, Kerns, & Turk, 1987), as well as depression (Kerns et al., 1990). There is also evidence that positive outcomes of psychotherapy for pain are enhanced when improving the patient's marriage relationship is part of the treatment (Ahern & Follick, 1985; Saarijarvi et al., 1992). In addition, family environment has been found to play a role in pain treatment outcomes (Tota-Faucette, et al., 1993). Finally, greater satisfaction with one's perceived social support has been found to be associated with better adjustment to pain, (Lopez-Martinez, Esteve-Zarazaga, & Ramirez-Maestre, 2008; Raichle, Hanley, Jensen, & Cardenas, 2007), which could set people up for better success in a pain treatment program. At this point it is unclear, yet very possible that in the present study, participant's social support enhanced the positive effects of this intervention. Future research should further explore the possibility that greater social support serves to increase responsiveness to treatment for co-morbid chronic pain and Axis I disorders, as well as how social support might be used to achieve better outcomes.

In addition, three of these four participants were caretakers for other family members living in the home with them. This factor was not shared by any of the other group members. There may be common traits among caregivers who are caring for someone very close to them that serve as facilitative factors in treatment, although there is no known research to support this assumption. Alternatively, the caretaking may have diminished their resources enough to qualify for being in the group, based on symptom

severity, but ultimately, these participants benefited most because they had daily access to strong social support in their homes as a facilitating factor to better treatment outcomes. Caregiving has been found to be associated with increased depression (Cuijpers, 2005), and caregivers with chronic pain report poorer mental health than caregivers without chronic pain and non-caregivers (Blyth et al., 2008), although much of the research on the impact of caregiving has been conducted in elderly populations.

Finally, the participants with the best outcomes, as a whole, were relatively more engaged in the treatment than the rest of the treatment group. When they attended sessions, these participants were more likely than others to volunteer to answer questions, offer information about themselves, and ask questions. These four participants were also among those who regularly arrived late to sessions. There may be several reasons for this. The most likely explanation is that lateness had more to do with a lower SES status, as most of the participants, including the group members for whom the best outcomes were found, relied on either public transportation or another person for a ride to group. However, it is also possible that participants who regularly arrived late may have felt guilty for their lateness and, to compensate, they may filled out survey responses in a way that would increase their social desirability. In other words, they may have endorsed changes indicative of improvement, such as less pain, less fear, etc. This would be a way for them to show the therapist that they valued therapy despite their consistent tardiness.

Separate from the measured results, several participants noted informally that treatment was helpful. At the completion of therapy some members wrote brief letters of thanks on their final survey responses, and two members even gave me gifts that they had

made themselves as a token of their appreciation. In addition, several weeks post-treatment, two participants determined that they were feeling better enough to terminate their individual therapy work. This provides preliminary evidence, from a clinical perspective, that the intervention was successful at achieving positive outcomes.

Clinical Observations

There were aspects of the intervention that seemed especially useful and others that were problematic. Additionally, there were aspects that seemed to be less useful or difficult to execute. Aspects that seemed to be especially well received by group members included (a) role-playing exercises, (b) psychoeducation about the differences between pain and suffering, even though this proved to be difficult for participants to understand at first, (c) opportunities to share experiences with chronic pain and emotions, and (d) breathing and relaxation exercises. Identifying and re-structuring negative cognitions was more difficult for participants to grasp. Homework assignments to practice this skill would be helpful and important to participant's progress, as this skill is involved in much of the work to be done.

There was one group member who disrupted the group process by interrupting and speaking over others. These disruptions were handled by directly asking the group member to wait until others were finished before commenting or asking questions. This group member also demonstrated some of these same behaviors during the initial intake, but to a lesser degree. Revisions of the treatment manual should include additional leader guidelines for handling these types of group members, such as having two screening sessions for group members who exhibit behaviors that may inhibit group therapy and

meeting individually with disruptive clients on an as-needed basis to discuss strategies for better participation in the group process. Two screening sessions would (a) provide a better sample of clients' behavior, (b) help clinicians make better judgments about inclusion, and (c) offer more opportunities to educate the person on behaviors required for successful group membership.

There are inherent difficulties in working with a population with such complicated clinical profiles, and this was evident in the present study. Given previous research that has found that individuals with co-morbid chronic medical problems and mental health diagnoses have worse healthcare outcomes in general, it is not entirely surprising that the participants in the present study did not experience improvements (Brooks & Penn, 2003; Dickerson et al., 2003; Druss et al., 2000). There were several elements of this study that were aimed at addressing this issue. First, in order to increase the likelihood that participants would attend every session, participants were provided with frequent reminder phone calls. Receiving a direct reminder call from the therapist has been demonstrated to increase therapy attendance (Schoffner, et al., 2007). Second, participants were paid for their participation in the study, which was meant not only to increase incentive generally but to help remove barriers to attendance (e.g., cost of transportation). However, participants were paid for the number of surveys they filled out rather than the number of sessions they attended, and weekly surveys were mailed to them.

Comparison with Previous Treatment Studies

A review of meta-analyses that examined the effectiveness of non-surgical pain treatments, which included both cognitive-behavioral and psychoeducational therapies, found that treatment results have varied greatly (Fishbain, 2000). This is, in part, due to the quality and variety of data within a meta-analysis – pain studies have been criticized for particular methodological problems, including poorly defined outcome variables, poorly described treatments, varied patient compliance trends, overly heterogeneous samples, and poor control for nontreatment factors that may influence outcomes. Added to this is the issue that there is variability in these factors among different pain studies, which make conclusiveness difficult (Fishbain, 2000). It is not surprising, then, that the results for the few previous studies that examined the effects of group treatment for comorbid chronic pain and mental health disorders have also been inconsistent, both within and across studies. The present results, therefore, are inconsistent with some previous research and consistent with others.

The present results conflict with previous pain intervention research that found consistent improvements across patients for self-efficacy and anxiety but not pain level (Thorn et al., 2007). On the other hand, it is somewhat consistent with other intervention research that found improvements for pain severity, disability, and negative mood (Wells-Federman, Arnstein, & Caudill, 2002).

Another study (Currie, Hodgins, Crabtree, Jacobi, & Armstrong, 2003) showed that 50% of participants showed statistically significant improvement at immediate follow-up, but on only one outcome variable each, and 30% improved on at least two variables (Currie, Hodgins, Crabtree, Jacobi, & Armstrong, 2003). This is similar to the

results of the present study, in that 55% (5 of the participants) improved on at least one variable, and 33% (3 participants) improve on more than two variables. However, Currie et al. (2003) found that even a greater percentage of participants had improved at the 3-month follow-up. As my study did not include follow-up assessments, it cannot be compared to this latter result.

Like the present study, Otis et al. (2009) reported problems with compliance, as well as improvements for some participants, a worsening of symptoms for others, and no changes for some. The authors offered the following possible reasons for worsened outcomes: stressful events during the course of treatment; specific diagnosis combinations; and a lack of engagement in treatment. Although the participants with the worst outcomes did experience stressful events during the study, this was also the case for other participants. Although the overall number of participants with more than one diagnosis on Axis I is unreported, it is possible that the combination of more than one Axis I diagnosis and having a major stressor come up during the course of therapy creates a barrier to positive treatment outcomes. This may have been the case with the present study, as there was a high number of treatment participants who had at least two Axis I diagnoses (100%) and 67% of them had at least one major stressor come up during the course of therapy. This may have prevented participants from reaching their outcome potential.

In addition, the current study results fit with previous research demonstrating that individuals with serious mental illness have more complicated treatment needs, more severe medical problems compared to those without mental illness, and are less likely

than others to complete mental health treatments (Much-Jorgensen et al., 2000; Gallagher, Brooks, & Penn, 2006; Comfort & Kaltenbach, 2000; Brooks & Penn, 2003). Naturally, these factors would also make it more difficult for this population of people to improve in any treatment program.

Limitations of the Study

Despite the fact that the present study was consistent with most research on the treatment of chronic pain in its mixed results, there were several major limitations of the present study that may account for some of the mixed findings and overall lack of support found for hypotheses. Specifically, there were several elements of the intervention, both as designed and implemented, that are considered to be limiting factors. Compliance was a major issue for many participants, as described above and illustrated in Table 4. Compliance was a problem not only for the treatment itself but also for survey completion. Findings may also have been influenced by varying degrees of readiness for change among participants. Finally, therapeutic change may also have been inhibited by group dynamics. These limitations are discussed in further detail below.

As stated previously, one major goal of the intervention was to reduce not only negative pain-related beliefs, but also negative beliefs that are thought to contribute to a range of Axis I disorders. However, the latter was not measured specifically, and therefore, no statements can be made about whether more general negative beliefs improved.

The present study also did not include any follow-up measurements. In Currie (2003), outcome at three-month follow-up was the most fruitful time of change. It is quite

possible that three weeks was not enough time for change to either occur or show up. It is possible that change occurred, but not until well after treatment ended. In other words, perhaps there was a delayed onset of actual symptom improvement. This may be especially possible for this study, given that it was conducted on a very short-term and concentrated schedule, given that sessions were held twice a week for three weeks. Future tests of the present intervention should include follow-up assessments of outcome, including assessments that are at least three months post-treatment.

Another limiting factor was that two thirds of the participants regularly arrived late. Sessions were regularly started approximately 10-15 minutes after the planned start time, usually with just one or two group members present and waiting. Others' tardiness may have had a negative impact on the remaining one third that arrived early or on time. For example, being a member in a group in which most members arrive late may send the message that other members do not take the treatment seriously or that the group is not viewed as important or helpful. Obviously, this could have detrimental effects on on-time participants' own beliefs and expectations about treatment as well as their prognoses. In addition, starting later nearly always meant postponing part of that day's material until next session. Therefore, the intervention was not delivered exactly on schedule in that the contents of each session shifted somewhat. Starting late allowed for less time for everything, including time to ask questions, which may have compromised some participants' understanding of the material. For example, it was apparent, at session 3, that some participants were still having some difficulty differentiating between the concepts of "pain" and "suffering," a component that was introduced in Session 1 and

then emphasized throughout the remaining five sessions. Compounding the frequent tardiness of participants was the fact that there were also frequent absences. Rarely was the entire group ever present. This may have also impacted individual members' expectations and beliefs about the importance and efficacy of group, which would have likely then affected their outcomes.

Related to this, group dynamics may also have limited the effectiveness of the intervention. Due to the frequent absences of members, each group session consisted of a different combination of people. This mattered greatly because some members were very talkative, whereas others were quiet. As mentioned previously, one member was talkative to the point of being disruptive during several of the sessions. This participant tended to interrupt during presentations and distract others by talking while others were talking. The combination of the frequently tardy and absent members and the varying combinations of quiet and loud people at each group session likely affected group cohesiveness, which has been long believed to be related to positive treatment outcomes (Budman et al., 1989; Yalom, 2005, Chapter 3). There is much empirical evidence to support this relationship (Budman et al., 1989; Casey-Campbell & Martens, 2009).

Survey compliance problems took several forms: misunderstanding directions, forgetting to complete that day's surveys, surveys getting lost in the mail, accidentally skipping items, and accidentally skipping entire pages. Strategies for dealing with the associated missing data avoided some limitations of mean imputation. However, dropping data from entire time points reduced the statistical power of tests and thus

increased the number of null findings. Also, scoring the measures differently across time points likely interfered with the comparability of scores across time.

There is also no way to guarantee that participants filled out the surveys when they said that they did, even though I took appropriate measures to ensure this, including emphasizing the importance of time consistency at the initial interview, conducting reminder phone calls on the days surveys were to be filled out, and providing a brief note at the top of the first page of each survey packet stating which day the survey was to be filled out. As well, a line was provided for them to fill in the date. Although these measures were taken to ensure accurate and timely survey responses, it is also recognized that for a population with so many problems, this was still asking a lot of participants. Individuals with so many health, psychological, and social problems would obviously have difficulty keeping up with surveys, mailing, etc. Given that Borckardt et al. (2008) emphasized the importance of consistently spaced intervals in SMA, a more preferable research design, from a statistical perspective, would provide objective opportunities to verify whether or not surveys were completed at the correct times. For example, internet-based surveys that are time-stamped would satisfy this condition, although as mentioned previously, this was not possible in the present study due to the SES of this sample.

The reason that the method of mailing surveys was chosen over Internet-submitted surveys is because this population was of low socioeconomic status. Most of the participants did not have regular access to the Internet. One way to solve this problem may have been to have participants fill out surveys after each group session. However, this method was avoided because (a) it was expected that not every participant would

make it to every session, (b) the control group was being measured simultaneously and therefore were not coming in to the clinic, and, relatedly, (c) I wanted the method of measurement to be uniform across participants.

Implications for Research and Treatment

Based on the present study and the literature, there are a number of recommended changes for future treatment implementations, as well as directions for future research.

One variable that may be important to consider for both future treatment and future research is stage of change, as defined in Prochaska and DiClemente's Transtheoretical Change Model (1982). There is evidence that the Transtheoretical Change Model is applicable to patients with chronic pain (Jensen, et al., 2000). Participants who were likely in earlier stages of change – Pre-contemplation or Contemplation – may not have been ready for the type of intervention that was presented. It is also likely that participants who were in earlier stages of change did improve, but that their improvement was that they progressed in their readiness to change and work on problems. This is a relatively new question in pain research, but current evidence suggests that chronic pain patients who score higher on Pre-contemplation and lower on other stages are less likely to complete pain management interventions, and patients who demonstrate measurable progress through the stages have better mood and functionality outcomes than those who stagnate or regress (Gersh, Arnold, & Gibson, 2011). Based on my clinical impressions, it did seem that some participants were much less ready for change than others. This was evident from the beginning when I conducted intakes. All patients were referred, so there were no self-selectors. Some clients were enthusiastic

about becoming part of the group, whereas others appeared guarded about joining. Those that seemed more guarded also tended to express a good deal of concern (frustration, disappointment, and in many cases, anger) about the ineffectiveness or harmfulness of their past pain treatments and relationships with healthcare professionals. For these participants, agreeing to participate in the study was often accompanied with phrases such as “Yeah, I guess [I’ll try it]. It can’t hurt.” Making any changes regarding their pain and mental health management had not occurred to these participants. Participants who seemed to be more ready for change tended to respond to questions about joining the study with phrases such as “Of course. This sounds great.” These participants had already been considering making such changes, and many of them had already begun that process (e.g., signing up for individual psychotherapy, recently joining a low-impact aerobics class, stating that they planned to sign up for an exercise program within the next week or so). In addition, participants who seemed less ready for change also engaged less during sessions; these individuals tended not to share information about themselves or ask about others. They also did not readily volunteer to answer questions and were more likely to miss sessions.

Clinicians and researchers would be wise to assess for motivational factors to initial screening interview, before recruiting eligible individuals. Then, one of two approaches could be taken: (a) only those who are “ready enough” could be recruited (i.e., those in the Preparation and Action stages), or (b) no exclusionary criteria could be based on stage of change but stage of change should be measured for differences in stage from pre- to post- treatment.

Future Research Directions.

The present study suggests a number of additional directions for treatment research with this population beyond the issues already raised. As discussed previously, a lack of group cohesiveness may have limited the effectiveness of the intervention and the strength of the study. Research is needed on the role of group cohesion in the effectiveness of the present and similar group interventions for chronic pain, as well as the factors that most influence group cohesion. Given the likely role of attendance problems in the lack of cohesion observed in the present study, it would be useful to investigate different strategies for increasing timely attendance of group sessions. Implementations of this type of research should consider a design that enables participants to make money by attending therapy, such as paying them to complete the surveys at the beginning of sessions rather than at home. However, the attendance problems experienced in this study beg questions about the viability of this type of intervention for this population.

In addition, future research should assess for patterns that may emerge in the unfolding of change. In other words, the process by which the individuals who did show improvement changed is important but was not measured. Perhaps the most important element of this is the order in which changes occur in relation to one another. Although this study did not find that any of the variables measured explained effects on pain severity across participants, future research should measure this as it would be useful in understanding how and when changes occur in this type of treatment. For example, if future research finds other effects that explain the effects of pain severity across

participants, it would be helpful to learn the order in which these changes occur. The process of change within psychotherapy is noted in the literature as a meaningful and fruitful yet underrepresented focus (Kazdin, 2008).

As noted earlier, a more nuanced picture of the effects of group pain treatment may be gained by measuring pain and suffering separately. One potentially useful way to conceptualize pain-related suffering is to view it as a lack of pain-related acceptance. Pain acceptance is broadly defined as noticing pain but not reacting to it (McCracken, Gauntlet-Gilbert, Vowles, 2007). Its distinctiveness from the somatic experience of pain has been supported by research indicating that pain acceptance is related to better functioning in chronic pain patients, even after accounting for perceived pain severity (McCracken, Gauntlet-Gilbert, Vowles, 2007; McCracken, 1998). The intervention in the present study focused on this topic but did not measure it. Future studies should measure pain-related acceptance both as a treatment outcome and a mediator of the effects of treatment on other outcomes.

Although this study was developed for heterogeneous Axis I Disorders, the mixed results raise questions about whether the same intervention should be used for clients that have different configurations of Axis I disorders. Given the pervasiveness of depression among individuals with chronic pain, it would be difficult to recruit individuals with chronic pain and an Axis I diagnosis that does not include depression. However, depression alone should be compared to depression that is comorbid with another disorder or disorders, including the most common disorders that accompany depression and/or chronic pain: substance disorders, anxiety disorders, and post-traumatic stress

disorder. For example, some work has already begun to establish unique processes that affect co-morbid chronic pain and post-traumatic stress disorder (e.g., The Mutual Maintenance Model; Asmundson, Coons, Taylor, & Katz, 2002). Other unique factors that are identified may be used to develop specific techniques for specific Axis I combinations.

Finally, while there is much to be learned from a single and multiple case study approach, large, randomized clinical trials would also offer important contributions to knowledge of the treatment of comorbid chronic pain and mental health diagnoses. Case studies offer clinicians and researchers a way to identify which therapeutic factors to study. They also offer researchers a way to study how processes developed from large-N-based study will play out in a clinical setting. In addition, case studies enable researchers and clinicians to study the process of change (Borckardt, et al., 2008). Still, large-scale studies that use aggregate data to define outcomes are also necessary, as they allow us results that are generalizable to a broader range of the population, as well as the opportunity to make stronger statements based on higher statistical power.

Clinical Implications.

There are several main suggestions for increasing success rates in future clinical implementations of this intervention. First, treatment programs should integrate this intervention into a broader multidisciplinary approach that includes cognitive and behavioral therapy, educational therapy, psychiatric medication, pain medication, and physical therapy (Fishbain, 2000). While many of the participants in the present study were also taking medications and receiving other treatments, this intervention was not

part of an overarching treatment program that kept track of all aspects of each person's treatment. Such a program may be especially valuable for the population studied in the present research, which faced the challenges presented by psychiatric disorders and low socioeconomic status. This type of program is recommended for future implementations of the treatment, as well as treatment studies.

In addition, the current form of this treatment is best suited for individuals who are actually ready to begin considering changes in their approach to thinking about and treating their physical and mental health conditions. Given that this is a short-term therapy, clients who are not ready miss out on information and are less likely to believe it. Clients in earlier stages of change also have worse outcomes than clients in later stages, based on research within multidisciplinary pain treatment centers (Clifford, CIPHER, & Schumacker, 2003). For these clients, a different approach should be taken. Clifford et al. (2003) recommend two separate treatment approaches for those in the pre-contemplative stage versus those in the contemplative stage. For the former, motivational interviewing, homework assignments that require utilization of cognitive-behavioral techniques, as well as demonstrating the ways in which psychological treatments for pain work (e.g., biofeedback) are appropriate. The goal is to get these participants to believe that change is possible and beneficial. For the latter, an exploration of the advantages and disadvantages to changing is recommended, as well as homework assignments involving automatic thought recording and behavioral experiments are recommended. The goal for this latter group would be to get participants to try new and different techniques of dealing with pain (Clifford et al., 2003).

The length of treatment should also be considered. Some research (Otis et al., 2009) indicates that 12 weeks is too long. Although some research has found that, in general, the most therapeutic change occurs within the first three sessions (Tang & DeRubeis, 1999), the present study's intervention may have been too short for this population. Based on some research with this population (Wells-Federman, Arnstein, & Caudill, 2002; Currie et al., 2003), the ideal length of treatment for individuals with chronic pain and mental health problems may be 10 sessions. It is important to note that readiness for change should be taken into consideration when determining the optimal number of sessions. Clients who are earlier on in their readiness to change process may be more likely to agree to interventions shorter in duration, as compared to clients who are more progressed in their readiness to change. In addition, the intervals between sessions should be considered. This study conducted sessions twice weekly. This enabled me to offer participants six sessions of therapy for just a three-week time commitment, which may have appealed to participants who were skeptical of treatment. However, this spacing does not allow much time in between sessions to practice applying the techniques taught. It also may increase practical challenges associated with attendance, including committing more time and making more travel arrangements within each week.

Given the severity of the combination of chronic pain and an Axis I disorder, there is also inherent difficulty in facets of compliance, making this population difficult to study on a longitudinal basis. Special care should be taken to increase rates of attendance and retention, as well as to facilitate participants' understanding of directions. There is literature that suggests that for patients dealing with both physical and mental

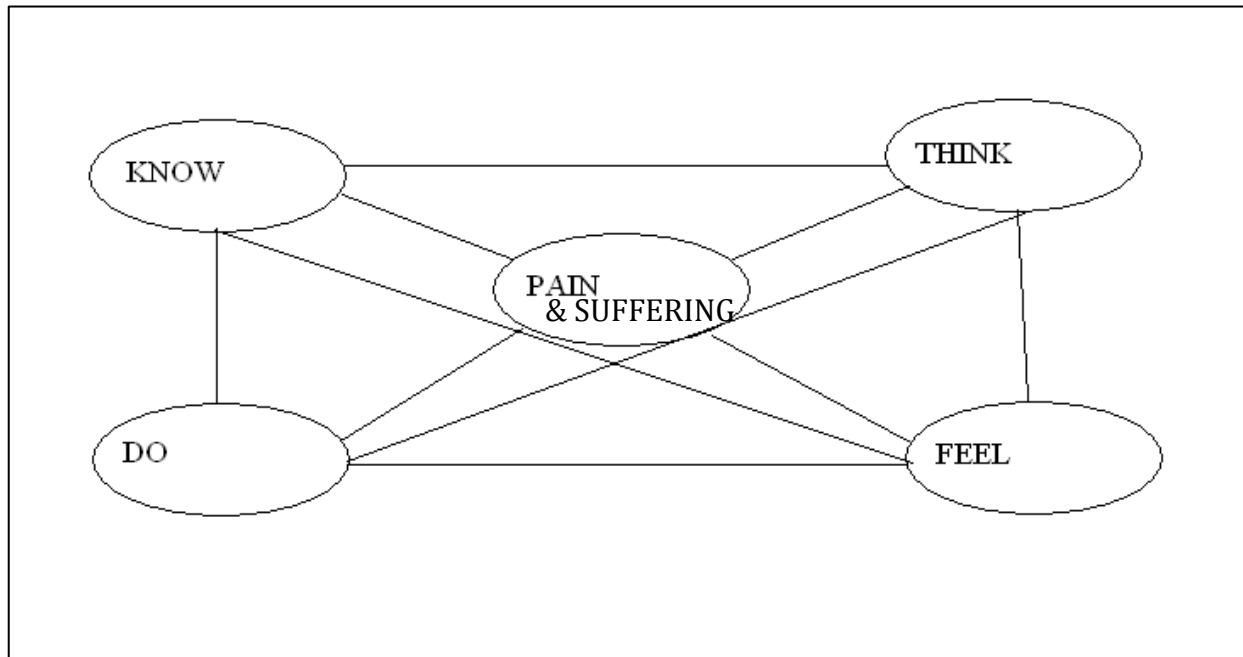
health issues, having social support is related to both greater compliance and better comprehension of treatment recommendations (Cameron, 1996). Indeed, the discussions of the power of social support seemed to resonate with this study's participants. Part of the psychoeducational component of this intervention included a brief discussion about the research findings that close relationships help with pain management. Participants were encouraged to consider their own social support network and identify close relationships. In addition to the other measures taken to increase compliance and successful outcomes, more time should be dedicated to discussing this topic. Because of the recurring evidence from both the literature and the present study that social support is integral to achieving positive outcomes in this population, a greater amount of time should be spent discussing ways of forming meaningful relationships.

Another approach that has been recommended to increase compliance in chronic pain populations is motivational interviewing (Kerns, Thorn, & Dixon, 2006). This would best be done on an individual basis, however, which would be time intensive. Still, given the potential for better compliance, it may be well worth it for clinicians to engage in motivational interviewing with members who demonstrate decreased compliance during the intervention. Brief, individual appointments could be arranged with clients who are struggling with lateness, attendance, homework completion, and any other compliance-related issues. In addition, motivational interviewing could be provided during initial screening intakes for clients who are not yet ready for group. Although this is unrelated to compliance, it is important to note that motivational interviewing would likely help

clients in early stages of change progress. This would be help to make the intervention more appealing to such clients in the future.

Despite the limitations, this study does offer some evidence that a biopsychosocial group intervention is effective for some individuals with co-morbid chronic pain and Axis I disorders in improving pain severity levels, negative emotions, and negative pain-related cognitions, including perceived disability and perceived harmfulness of physical movement and exercise. The treatment complications indicated in this study are just as informative as the successes; treating individuals with co-morbid chronic pain and Axis I disorders presents unique difficulties related to the sheer number of problems, the unclear interrelatedness of these problems, and the inherent hardships faced by individuals with such a complex clinical profile – and this is not to mention that in the present study, these problems were compounded by low SES. Indeed, the nature of co-morbid chronic pain and Axis I disorders, as well as the treatment of this co-morbidity, is extremely challenging. This combination represents the majority of chronic pain cases, and yet there is still much to be learned regarding the treatment of co-morbid chronic pain and significant mental health problems.

Figure 1. Interactional Model



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Figure 1. The model used to describe the relationship among various factors contributing to and resulting from pain and suffering.

Table 1

Significant Phase and Dose-Response Effects

ID#	Pain Severity	Harm	Medication	Medical Cure	Disability	Fear	Hostility	Sadness	S.E. PainMgmt.
Control Group									
001					DR**				DR*
004									
005									
006	(P**)								(P**)
009			(P*)						DR**
013		(P**)							
Treatment Group									
002	DR*				P**				
003			(P*)		(P** & DR**)				
007									
008	DR**						P**	P**	
010	(P**)						P** & DR**	DR*	DR**
011	(DR*)				P* & DR*			(DR**)	DR**
012			P* & DR*		DR**				
014	(DR*)	(P**)							(DR**)
015	DR*								

Note. Self Efficacy for Pain Management is abbreviated as S.E. PainMgmt. Values enclosed in parentheses indicate those which indicate a worsening of symptoms. Therefore, for the Treatment Group, values in parentheses also represent results which do not support our hypotheses. P = Phase Effect; DR = Dose-response Effect.

* $p \leq .10$. ** $p \leq .05$

Table 2

Treatment Group Phase and Dose-Response Effects

ID#		<u>Pain Severity</u>		<u>Harm</u>		<u>Medication</u>		<u>Medical Cure</u>		<u>Disability</u>		<u>Fear</u>		<u>Hostility</u>		<u>Sadness</u>		<u>S.E. PainMgmt.</u>	
		<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>
002	P	-.51	.18	-.33	.39	.56	.21	.26	.44	-.57	.04	-.39	.38	.00	1.00	-.39	.30	.20	.59
	DR	-.62	.08	-.17	.72	.36	.52	.05	.91	-.59	.16	-.36	.47	.01	.98	-.39	.41	.25	.48
003	P	-.32	.34	-.22	.38	.60	.06	-.21	.57	.75	.02	-.12	.72	.05	.92	-.14	.56	-.18	.71
	DR	-.40	.37	-.33	.16	.47	.16	-.48	.17	.69	.05	-.13	.68	.34	.46	-.12	.62	-.39	.38
007	P	-.35	.43	.06	.87	.18	.48	-.29	.22	-.15	.70	-.79	.14	-.75	.15	-.22	.53	-.45	.47
81	DR	-.37	.41	-.35	.29	.35	.17	.15	.54	.05	.91	-.66	.33	-.76	.16	-.44	.19	-.19	.78
008	P	-.69	.12	.10	.62	-.24	.55	.17	.65	-.37	.29	-.47	.12	-.66	.02	-.62	.04	.22	.35
	DR	-.83	.03	-.05	.79	.10	.81	.06	.88	-.36	.30	-.45	.13	-.48	.13	-.49	.11	.23	.90
010	P	.68	.02	-.66	.12	-.10	.73	.31	.40	.37	.29	-.88	.03	-.65	.13	-.61	.16	.42	.31
	DR	.49	.13	-.30	.56	-.21	.46	.28	.45	.43	.22	-.92	.01	-.74	.07	-.74	.05	.54	.18
011	P	.28	.41	-.22	.59	.00	1.00	.00	1.00	-.65	.06	-.30	.30	.31	.35	-.42	.14	.52	.39
	DR	.54	.09	-.40	.30	.04	.87	.08	.79	-.62	.08	-.25	.40	.61	.04	-.42	.14	.89	.02
012	P	.00	1.00	-.65	.03	-.41	.27	-.71	.15	-.51	.24	-.08	.72	-.21	.48	-.45	.11	-.16	.69
	DR	.11	.76	-.73	.01	-.17	.68	-.54	.38	-.82	.02	-.09	.67	-.23	.46	-.45	.11	-.05	.90

014	P	.25	.37	.38	.20	.33	.17	.27	.54	-.26	.38	.00	1.00	-.10	.76	.00	1.00	-.42	.16
	DR	.51	.06	.67	.01	.31	.18	.35	.42	-.24	.42	.00	1.00	-.19	.56	.11	.82	-.57	.04
015	P	-.40	.21	.56	.29	.04	.90	-.21	.71	.11	.51	.02	.96	-.04	.91	.14	.55	-.15	.52
	DR	-.50	.10	.62	.23	.25	.41	-.53	.29	.17	.32	-.25	.54	.00	1.00	.00	1.00	-.13	.56

Note. Self Efficacy for Pain Management is abbreviated as S.E. PainMgmt. P = Phase Effect. DR = Dosage-response Effect.

Table 3

Control Group Phase and Dose-Response Effects

ID#		<u>Pain Severity</u>		<u>Harm</u>		<u>Medication</u>		<u>Medical Cure</u>		<u>Disability</u>		<u>Fear</u>		<u>Hostility</u>		<u>Sadness</u>		<u>S.E. PainMgmt.</u>	
		<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>
001	P	.00	1.00	.00	1.00	.37	.41	.19	.95	-.44	.31	-.46	.27	-.49	.27	-.65	.13	.46	.18
	DR	-.27	.49	-.32	.50	.31	.49	.43	.26	-.74	.04	-.49	.22	-.52	.24	-.63	.15	.55	.10
004	P	.63	.17	-.48	.19	-.47	.24	-.49	.20	.58	.23	.10	.72	-.19	.58	.06	.84	-.48	.25
	DR	.60	.21	-.51	.16	-.40	.32	-.40	.32	.46	.37	.07	.81	.09	.78	.07	.81	-.37	.38
006	P	.82	.04	-.14	.52	.23	.18	-.20	.55	.26	.44	.46	.31	-.50	.28	.29	.54	-.77	.05
	DR	.73	.13	-.10	.64	.10	.56	-.41	.20	.11	.75	.51	.26	-.56	.21	.57	.18	-.69	.12
009	P	.29	.36	-.06	.82	.45	.10	.11	.80	.32	.28	-.21	.59	-.11	.71	-.42	.29	-.34	.39
	DR	.10	.75	-.24	.34	.37	.18	.27	.50	.22	.47	-.06	.88	.12	.68	-.19	.64	-.68	.05
013	P	.45	.36	.89	.01	.00	1.0	.19	.77	-.73	.14	.02	.95	-.56	.23	-.33	.41	.37	.33
	DR	.61	.16	.63	.17	.00	1.0	.51	.39	-.60	.31	.09	.81	-.58	.22	-.07	.87	.37	.42

Note. Self Efficacy for Pain Management is abbreviated as S.E. PainMgmt. P = Phase Effect. DR = Dosage-response Effect.

Table 4

Compliance-related Variables

ID#	#Sessions Missed	Often 5-10 min. late	Often >20 min. late	Engage. in tx	Referred by indiv. counselor?
002	2			Med	X
003	0			Med	X
007	1			Low	X
008	2	X		High	X
010	3		X	High	
011	1	X		Med	X
012	1	X		High	
014	3	X		Low	
015	1		X	High	

Note. An X indicates that a participant meets the description above it. Engage. in tx = Degree to which the individual participated during sessions. Referred by indiv. counselor = Referred by current individual counselor as opposed to physician.

Table 5

Health Variables

ID#	# of Axis I diagnoses	Individual psych tx?	# Psych meds	History any psych tx?	# Pain problems	# Years in pain	# Pain meds	# Pain tx, not meds	#Other health problems
Control Group									
85 001	1	X	0		4	3	3	0	1
004	2	X	1	X	3	24	1	2	3
005	2		1		3	10	4	3	5
006	2		0	X	1	15	1	3	0
009	2		2	X	4	3	3	1	3
013	2		0		1	8	2	0	2
Treatment Group									
002	2	X	2	X	1	4	5	0	2
003	3	X	3	X	1	15	3	1	2
007	3	X	1	X	2	2	2	1	1
008	3	X	1	X	1	13	3	3	1
010	3		2	X	6	10	2	1	2

011	2	X	1	X	2	20	5	0	1
012	2		1	X	1	11	6	3	5
014	3		0		1	1	2	2	2
015	3		0	X	1	40	1	0	0

Note. An X indicates that a participant meets the description above it. Hx any psych tx = whether the person has a history of receiving treatment for psychiatric problems (e.g., psychotherapy, hospitalization, 12-step programs, and drug therapy). # Pain meds = Number of pain medications, prescription and non-prescription. # Pain tx, not meds = number of any other kind of non-drug pain treatment (including but not limited to ice packs, chiropractor, pain journal, etc.).

Table 6

Psychosocial Variables

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ID#	Currently Married	Hx Divorce	Children	Caretaker for family	Temporary living situation	Religious
Control Group						
001		X	X			X
004		X	X	X		
005		X	X			X
006						X
009		X	X			
013						
Treatment Group						

002					X	X
003		X				
007		X	X		X	
008	X		X	X		X
010	X		X	X	X	X
011	X		X	X		
012	X	X	X	X		
014	X					X
015					X	X

Note. An X indicates that a participant meets the description above it. Caretaker for family = currently a caretaker for one or more family members that live in the participant's house. Temporary living situation = currently living in one of the following situations: a homeless shelter, group sober living community, with friends temporarily, with family temporarily, etc.

Appendix A: West-Haven Yale Multidimensional Pain Inventory (WHYMPI): Pain Severity Scale

In the following 3 questions, you will be asked to describe your pain and how it affects your life. Under each question is a scale to record your answer. Read each question carefully and then circle a number on the scale under that question to indicate how that specific question applies to you.

1. Rate the level of your pain at the present moment.

0	1	2	3	4	5	6
No pain						Very intense pain

2. On the average, how severe has your pain been during the last week?

0	1	2	3	4	5	6
Not at all severe						Extremely severe

3. How much suffering do you experience because of your pain?

0	1	2	3	4	5	6
No suffering						Extreme suffering

**Appendix B: Survey of Pain Attitudes – 32 (SOPA-32): Harm, Medication, Medical
Cure, and Disability Subscales**

Instructions: Please indicate how much you agree with each of the following statements about your pain problem by using the following scale:

0 = This is very untrue for me.

1 = This is somewhat untrue for me.

2 = This is neither true nor untrue for me (or it does not apply to me).

3 = This is somewhat true for me.

4 = This is very true for me.

-
1. I will probably always have to take pain medications 0 1 2 3 4
 2. I expect a medical cure for my pain..... 0 1 2 3 4
 3. I have had the most relief from pain with the use of medications 0 1 2 3 4
 4. I have given up my search for the complete elimination of my pain
through the work of the medical profession 0 1 2 3 4
 5. Exercise and movement are good for my pain problem..... 0 1 2 3 4
 6. Medicine is one of the best treatments for chronic pain..... 0 1 2 3 4
 7. If I exercise, I could make my pain problem much worse..... 0 1 2 3 4

8. Something is wrong with my body which prevents much movement
or exercise..... 0 1 2 3 4
9. I trust that the medical profession can cure my pain 0 1 2 3 4
10. My pain does not stop me from leading a physically active life..... 0 1 2 3 4
11. My physical pain will eventually be cured..... 0 1 2 3 4
12. I can do nearly everything as well as I could before I had
a pain problem 0 1 2 3 4
13. If I do not exercise regularly, my pain problem will continue
to get worse..... 0 1 2 3 4
14. Exercise can decrease the amount of pain I experience 0 1 2 3 4
15. I'm convinced that there is no medical procedure that will help
my pain..... 0 1 2 3 4
16. My pain would stop anyone from leading an active life 0 1 2 3 4

Appendix C: Positive and Negative Affect Schedule-Expanded Form (PANAS-X):

Fear, Sadness, and Hostility Subscales

This scale consists of a number of words and phrases that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you feel this way *right now*. Use the following scale to record your answers:

1. _____ disgusted
2. _____ scornful
3. _____ irritable
4. _____ sad
5. _____ afraid
6. _____ shaky
7. _____ alone
8. _____ blue
9. _____ nervous
10. _____ lonely
11. _____ excited

12. _____ hostile
13. _____ jittery
14. _____ scared
15. _____ downhearted
16. _____ frightened
17. _____ loathing

very
uncertain

very
certain

Appendix E: Medication and Treatment Survey

NAME*: _____

DATE: _____

*In effort to maintain your privacy, after group today your name will be blacked out with permanent ink. A number will then be used to identify your responses to these questions.

Please answer the following questions:

Have there been any major changes to your treatment regime within the last 3 or 4 days? If so, please explain what these changes were.

What, if any, medications have you already taken today?

Appendix F: Mini International Neuropsychiatric Interview

MINI Questions

For each question, please answer “yes,” “no,” or “maybe.”

1. Have you been consistently depressed or down, most of the day~ nearly every day, for the past two weeks?
2. In the past two weeks, have you been less interested in most things or less able to enjoy the things you used to enjoy most of the time?
3. Have you felt sad, low or depressed most of the time for the last two years?
4. Have you ever had a period of time when you were feeling 'up' or 'high' or so full of energy or full of yourself that you got into trouble or that other people thought you were not your usual self? (Do not consider times when you were intoxicated on drugs or alcohol.)
5. Have you ever been persistently irritable, for several days, so that you had arguments or verbal or physical fights, or shouted at people outside your family? Have you or others noticed that you have been more irritable or over reacted, compared to other people, even in situations that you felt were justified?
6. Have you, on more than one occasion, had spells or attacks when you suddenly felt anxious, frightened, uncomfortable, or uneasy, even in situations where most people would not feel that way?
7. Did the spells peak within 10 minutes?
8. Do you feel anxious or uneasy in places or situations where you might have a panic attack or the panic like symptoms, or where help might not be available or escape might be difficult: like being in a crowd, standing in a line?
9. In the past month, were you fearful or embarrassed being watched, being the focus of attention, or fearful of being humiliated? This includes things like speaking in public,

eating in public or with others, writing while someone watches, or being in social situations.

10. In the past month have you been bothered by recurrent thoughts, impulses, or images that were unwanted, distasteful, inappropriate, intrusive, or distressing? (For example, the idea that you were dirty, contaminated or had germs, or fear of contaminating others, or fear of harming someone even though you didn't want to, or fearing you would act on some impulse, or fear or superstitions that you would be responsible for things going wrong, or obsessions with sexual thoughts, images or impulses, or hoarding, collecting, or religious obsessions.)
11. In the past month, did you do something repeatedly without being able to resist doing it, like washing or cleaning excessively, counting or checking things over and over, or repeating, collecting, arranging things, or other superstitious rituals?
12. Have you ever experienced or witnessed or had to deal with an extremely traumatic event that included actual or threatened death or serious injury to you or someone else?
13. During the past month, have you re-experienced the event in a distressing way (such as dreams, intense recollections, flashbacks or physical reactions)?
14. In the past three months, did you have eating binges or times when you ate a very large amount of food within a 2-hour period?
15. Have you worried excessively or been anxious about several things over the past 6 months?
16. In the past 12 months, have you had 3 or more alcoholic drinks within a 3 hour period on 3 or more occasions?
17. In the past 12 months, did you take any drug or substance so that you could get high, or feel better, or change your mood?
18. Since your childhood have you ever had episodes of hearing voices or sounds that other people could not hear?
19. Since your childhood have you had episodes when you thought you were being plotted against or that someone was watching or spying on you?
20. Do you have negative feelings about certain groups or types of people (persons of a

certain religion, or people in particular jobs, or people from another region of the country)?

21. Do you feel you need to be always right or perfect in the things you do?

22. Do you feel you thoughts are confused and illogical?

Appendix G

Table G1

Treatment Group Means and Standard Deviations

ID#		<u>Pain Severity</u>		<u>Harm</u>		<u>Medication</u>		<u>Medical Cure</u>		<u>Disability</u>		<u>Fear</u>		<u>Hostility</u>		<u>Sadness</u>		<u>S.E. PainMgmt</u>	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
002	B	5.28, 0.45	2.77, 0.60	1.67, 0.50	1.75, 0.57	3.29, 0.19	1.89, 1.20	2.00, 0.64	1.87, 0.85	37.33, 7.80									
	T	4.67, 0.58	2.44, 0.28	2.19, 0.28	2.02, 0.42	2.86, 0.41	1.17, 0.17	2.00, 0.48	1.33, 0.30	40.67, 8.22									
003	B	3.78, 0.57	0.25, 0.38	2.89, 0.42	1.57, 0.35	1.88, 0.45	2.17, 0.41	1.47, 0.24	2.53, 0.32	58.67, 8.23									
	T	3.50, 0.17	0.13, 0.13	3.39, 0.23	1.31, 0.78	2.63, 0.13	2.08, 0.25	1.50, 0.24	2.47, 0.09	56.33, 4.23									
007	B	5.67, 0.47	3.08, 0.59	3.50, 0.32	1.43, 0.21	2.63, 1.28	2.58, 0.86	2.86, 0.51	3.77, 0.72	27.00, 11.30									
	T	5.39, 0.23	3.17, 0.73	3.60, 0.23	1.27, 0.32	2.92, 0.49	1.03, 0.06	1.81, 0.41	3.50, 0.41	18.00, 5.89									
008	B	5.17, 0.26	2.71, 0.49	2.39, 0.30	0.57, 0.18	4.00, 0.00	2.61, 0.69	3.19, 0.55	3.63, 0.52	10.67, 1.49									
	T	4.50, 0.41	2.79, 0.30	2.22, 0.37	0.67, 0.40	3.79, 0.37	1.81, 0.83	2.11, 0.69	2.20, 1.17	11.33, 1.49									
010	B	5.11, 0.42	1.96, 0.93	3.03, 0.51	1.82, 1.06	1.97, 0.44	4.78, 0.16	4.53, 0.22	4.65, 0.26	34.17, 21.88									
	T	5.75, 0.23	1.61, 0.57	2.44, 1.15	2.33, 0.15	2.25, 0.25	3.67, 0.47	3.86, 0.50	3.70, 0.85	54.17, 9.53									
011	B	4.11, 0.46	2.79, 0.68	2.78, 0.31	2.43, 0.33	2.92, 0.37	1.06, 0.12	1.33, 0.00	1.93, 0.38	61.00, 2.24									
	T	4.50, 0.83	2.43, 0.89	2.78, 0.25	2.43, 0.33	2.33, 0.31	1.00, 0.00	1.45, 0.25	1.67, 0.15	72.00, 12.75									
012	B	4.95, 0.36	1.58, 0.19	3.72, 0.23	1.10, 0.28	2.19, 0.37	1.78, 0.39	1.75, 0.82	2.30, 0.68	70.00, 9.93									

	T	4.95, 0.45	1.25, 0.20	3.50, 0.26	0.50, 0.32	2.38, 0.24	1.70, 0.58	1.50, 0.17	1.73, 0.39	67.33, 5.85
014	B	3.33, 1.59	2.54, 1.14	3.22, 1.45	1.50, 0.80	2.75, 1.27	1.06, 0.51	1.75, 0.80	1.40, 0.66	23.33, 11.53
	T	3.22, 2.40	2.33, 1.72	1.78, 1.83	1.37, 0.98	1.46, 1.46	0.78, 0.56	1.11, 0.80	1.10, 0.78	15.33, 11.23
015	B	3.61, 1.69	0.75, 0.75	2.50, 1.32	1.30, 0.98	1.50, 1.05	1.20, 1.02	1.61, 1.29	1.50, 1.11	46.67, 33.50
	T	4.11, 0.69	1.83, 0.31	2.95, 0.52	1.40, 0.99	2.06, 0.24	1.97, 0.54	2.42, 0.23	2.07, 0.30	71.67, 3.72

Note. Self Efficacy for Pain Management is abbreviated as “S.E. PainMgmt.” B = Baseline Phase. T = Treatment Phase.

Table G2

Control Group Means and Standard Deviations

ID		<u>Pain Severity</u>		<u>Harm</u>		<u>Medication</u>		<u>Medical Cure</u>		<u>Disability</u>		<u>Fear</u>		<u>Hostility</u>		<u>Sadness</u>		<u>S.E. PainMgmt</u>	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
001	B	3.83, 0.63	1.25, 0.38	1.50, 1.12	2.47, 0.36	2.08, 0.37	1.53, 0.32	2.31, 0.46	2.40, 0.37	54.33, 24.59									
	T	3.83, 0.69	1.25, 0.35	2.33, 0.94	2.60, 0.33	1.67, 0.47	1.28, 0.12	1.92, 0.16	1.87, 0.25	68.33, 4.38									
004	B	3.61, 1.65	2.25, 1.16	2.78, 1.26	2.20, 1.03	2.54, 1.22	2.03, 0.99	2.64, 1.23	2.73, 1.32	27.33, 15.94									
	T	5.00, 0.82	2.29, 0.73	3.11, 0.50	2.27, 0.81	3.69, 0.17	2.39, 0.53	2.94, 0.36	3.23, 0.21	22.33, 8.90									
006	B	3.44, 0.71	1.88, 0.31	2.00, 0.38	1.50, 0.38	2.08, 0.24	2.61, 0.39	2.44, 0.46	2.93, 0.43	62.33, 7.87									
	T	4.89, 0.16	1.79, 0.27	2.17, 0.32	1.33, 0.44	2.21, 0.22	2.97, 0.29	1.97, 0.34	3.30, 0.74	40.00, 17.96									
009	B	3.22, 0.94	3.83, 0.37	3.89, 0.16	1.27, 0.38	3.63, 0.52	2.58, 0.43	2.61, 0.76	2.13, 0.73	44.00, 9.24									
	T	4.05, 0.45	3.79, 0.30	4.00, 0.00	1.35, 0.35	3.88, 0.13	2.03, 0.93	2.06, 1.00	1.33, 0.67	29.17, 18.94									
013	B	4.95, 0.45	1.21, 0.27	3.89, 0.16	1.53, 0.67	3.67, 0.47	2.70, 1.04	3.53, 0.53	3.40, 0.93	46.67, 21.28									
	T	5.39, 0.45	2.04, 0.17	3.89, 0.16	1.80, 0.71	2.67, 0.47	2.72, 0.52	3.00, 0.14	2.83, 0.66	59.67, 8.28									

Note. Self Efficacy for Pain Management is abbreviated as “S.E. PainMgmt.” B = Baseline Phase. T = Treatment Phase.

Appendix H: Manual for Group Therapy

Chronic Pain and Mental Health: Manual For Group Therapy

Session #1:



- Welcome/Intro: Explain the purpose, specific goals, and rules of the workshop.
 - **Welcome:**
 - *Welcome to chronic pain group treatment. Here, you will learn ways to help manage your pain. Here we will also talk about mental health issues, how your mental health may affect your chronic pain, and how your chronic pain may affect your mental health.*
 - **Explain workshop structure:**
 - *There will be a total of 6 weekly sessions.*
 - *At each group meeting, you will learn more about what chronic pain is, and natural ways you can manage it better.*
 - *The goals of each session will be the same: changing your thinking (eliminating cognitive distortions) in ways that make pain seem more bearable and less disabling, learning about activities you can practice to manage your pain (behavioral techniques), increasing how “capable” or you feel about your abilities to manage your pain (self-efficacy), and talking about how emotions can affect your pain (affective). It is my hope that doing these things will help you manage your pain better!*
 - **Explain confidentiality:**
 - *Another important thing you should know about these sessions is that they are confidential. The only time I may have to break*

confidentiality is if I learn that you are at serious risk of hurting yourself or someone else, if I learn that a minor or elderly person is being abused, or if I am required to by a court of law.

- *As a reminder, your name will not be included on any of my notes or in any other collected data. Instead, a code number will be used to identify your materials. Only I will be able to link your information to your identity through use of an identification key. Also, only I will have access to the identification key. All notes will be kept in a locked filing cabinet to which only me and my clinical supervisors (Drs. NAME LAST and NAME LAST) have access. Finally, once this study is completed, both the identification key and my notes will be destroyed.*
- *As another reminder, you may withdrawal from this study at any time and for any reason. Also, if you have any concerns about the study, you may contact my clinical supervisors, Drs. NAME LAST and NAME LAST, or the primary investigator of this study, Dr. Jonathan Mohr.*

- **Explain policies:**

- *There are just a few rules we need to keep. Sometimes, I will ask you to share your experiences, so we need to make sure to respect whoever is talking. All that means is that we will give anyone talking our full attention, and that we will be accepting and non-critical of what is said. Just like The Golden Rule, here we'll ask each other to "treat others the way you would like them to treat you."*

- **Discuss confidentiality between group members (i.e., outside of group).**

- Understanding pain: Introduce key concepts that will be discussed throughout the session.

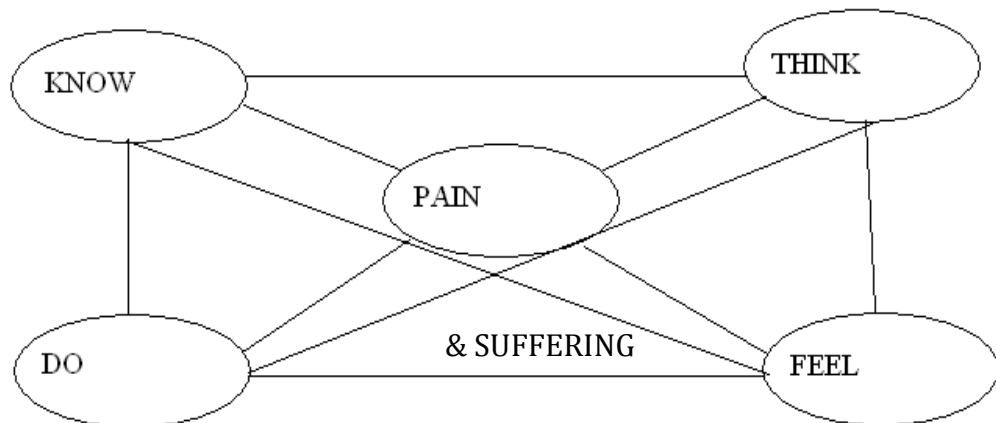
Who here is currently in pain? (Gesture to raise their hands.) Anyone here feels like their pain is pretty bad today, that it hurts a lot? (Gesture to raise hands.) Who here currently has pain that prevents them from doing certain things? For example, ever feel like your pain prevents you from walking or sitting for long periods of time? (Gesture to raise their hands.)

What if I told you that we teach you ways you could cope better with your chronic pain? (Pause.)

Throughout this session, we're going to work on helping you cope with your chronic pain. It's true that many people can learn to still enjoy life even though they have pain! These sessions will show you how in four important ways:

- 1) What you **know** about pain
- 2) How you **think** about pain
- 3) How you **feel** about pain
- 4) What you **do** about pain

Sometimes we'll talk about how these four ways can interact with each other. For example, sometimes what you **know** can change how you **think**, which can change what you **do** and how you **feel**. Show chart that illustrates the multidirectionality of the interactions among all four factors. (Briefly discuss this concept.)



- **KNOW:** *Let's start with what you know about chronic pain.*

- What is the purpose of pain?

Pain is your body's "alarm system." It tells you, "Something is wrong!" When part of your body is injured or hurt, it responds by producing pain. Pain often tells you that you need to do something. For example, if you touch a hot stove, pain signals from your brain make you pull your hand away. This type of pain helps protect you.

- What is chronic pain?

Chronic pain is pain that lasts longer than three months. For example, arthritis is chronic pain. This kind of pain is different from regular pain. While chronic pain tells you that something is wrong, it often isn't as easy to relieve. Managing this type of pain is important, because it can disrupt your life.

- The Pain Cycle

Your emotions can affect your pain. And your pain can affect your emotions. If you feel depressed, anxious, angry, or stressed, your pain may seem worse. Similarly, if your pain seems worse, you may feel depressed, anxious, angry, or stressed. Sometimes feeling like you can't do the things you used to do because of your pain can also affect your emotions. The bottom line is that it is easy to get caught in a cycle of pain, limited or lost abilities, and emotions that makes everything seem harder to handle.

- Why do people react differently to pain?

There are several reasons why people react differently to pain. 1) Physical reasons: Everyone's body is different. The same type of pain-causing injury may affect people's body differently. Also, not everyone has the same type of pain-causing injury or disease. 2) Emotional and social reasons: Other factors that affect how you react to pain and how much pain you feel include your fears and anxieties about pain, previous experiences with pain, energy level, and attitude about your condition. The way people around you react to pain also affect how you personally react to pain.

Whatever the reason, many people have discovered that by learning and practicing pain management skills, it is possible to reduce pain.

- What can make your pain feel worse?
 - **DO:** *excessive physical activity, lack of sleep*
 - **FEEL:** *Increased stress, anxiety, depression*
 - **THINK:** *dwelling on pain*
 - **YOUR TURN:** *Anything else make your pain worse?*
→ **Discussion**

- What can make your pain feel better?
 - **DO:** *carefully monitored exercise (Explain what “carefully monitored” can mean.), relaxation, pleasing sights, distraction, medication, massage, heat or cold treatments, topical lotions*
 - **FEEL:** *Happy mood, Less anxiety, Less stress, Humor*
 - **THINK:** *Positive thinking*
 - **YOUR TURN:** *Anything else you can do to help your chronic pain?*
 - **KNOW** *People who have relationships and social support are better at handling stress than their people who feel isolated from personal contact. Even though no one can fully understand another person’s physical pain, there is a way that pain can be shared.*
 - *The presence of a caring person can have an actual, measurable physical effect on pain and on healing.*
 - **YOUR TURN:** *Who can you turn to for social support?*

- **THINK:**
 - Talk about catastrophizing. Explain ways to reconstruct that kind of thinking so that it is more adaptive. *Who here has ever noticed that when then think negatively, things seem to be worse? (Pause.) Well, I want to tell you about a “thinking trap” that lots of people fall into. It’s called “catastrophizing.” Catastrophizing is when you believe that your pain is so awful that you cannot handle it, or that your pain will be so awful in the future that you won’t be able to handle it. For example, you might think, “If my pain gets any worse, I won’t be able to stand it!” or “This pain is too much for me to bear.” Again, this is called “catastrophizing.” Anyone ever notice that they have these thoughts sometimes? (Pause.)*

- *Even though catastrophizing is common, I want you to know that this kind of thinking can hurt you. It can make you feel more depressed, and it can even make your pain seem worse than it is. In fact, researchers who study chronic pain found that when people were able to catastrophize less, they had less pain!*
 - *So, it seems like a good idea to try and stop catastrophizing, right? (Pause.)*
 - *One way that can help is to come up with other thoughts to replace the catastrophizing thoughts. For example, instead of thinking, “This pain is too much for me to bear,” you might think, “This pain is really bad, but I know I can handle it. I’ve handled it before and I can handle it again.”*
 - *What are some other thoughts you might use to replace the bad ones? (Ask for ideas from group.)*
- **DO: YOUR TURN:** *Now we’re going to practice something you can **do** to help manage your pain. It’s what we call a “deep breathing” exercise, and maybe you have heard of it before. It’s a little different from regular breathing because it involves really concentrating on **how** you’re breathing, plus it means breathing from your stomach rather than from your chest.*
 - *Deep breathing in order to relax*
 - *Deep breathing helps ensure that there is enough oxygen in your body. Oxygen is a nutrient carried in the blood, and it is necessary for metabolism in healthy tissues. Internal organs and muscles as well as injured areas need a lot of oxygen to survive and even more to heal.*
 - *Some people use deep breathing as their only relaxation exercise. Some use it as part of their relaxation routine. However you choose to use it, it is quick, pleasant, and readily available.*
 - *Deep natural breathing: This is portable and can be done without calling any attention to yourself. Deep breathing can be done whenever you feel the need to reduce stress. It can help you relax and gather your thoughts. Practice this technique for 3 to 4 minutes:*
 - *Guide patients through the following steps.
Demonstrate them for the patients as you guide them.*
 1. *Sit comfortably with feet uncrossed.*
 2. *Place one hand on the chest and the other on the abdomen.*
 3. *Inhale deeply through the nose, allowing your abdomen to expand, and move your lower hand outward.*

4. *When the abdomen is extended, then allow your chest to expand and move the upper hand.*

5. *Hold the air in for a couple of seconds.*

6. *As you begin to exhale slowly, concentrate on creating a whooshing sound through pursed lips.*

7. *Repeat several times in a slow, deliberate manner.*

- *After about 10-15 inhalations, say in a quiet voice, **How are people feeling now?** Allow a minute or two for patients to answer. If people are indicating that they are not feeling relaxed, **Do not worry if you don't feel relaxed this time. It takes a while to learn how to use breathing as a way to relax your body. We will be doing more of this in the future, so you will have the chance to try again.***

- **Closing/Goodbye**

- *Okay, now that everyone is relaxed, let's take a moment to reflect on what we've talked about today.*
- **Show chart of sum-up points:** *Today we learned several ways to manage your chronic pain:*
 - **KNOW:** *Chronic pain is pain that lasts longer than three months. Having social support can help you manage your stress better.*
 - **FEEL:** *Feeling anxious, depressed, or stressed can make your chronic pain seem worse.*
 - **THINK:** *Catastrophizing is when you think that your pain is so awful that you cannot handle it. Replacing these thoughts with more positive ones can make your pain seem better.*
 - **DO:** *Deep breathing exercises can make you feel more relaxed and better about your pain.*
- *Next time, we will learn more about chronic pain (Point to "KNOW" on chart), we'll talk more about how what you feel (Point to "FEEL" on chart) can affect your pain, we'll continue discussing ways to change your thinking (Point to "THINK" on chart) to manage your pain better, and we'll learn more about what you can do (Point to "DO" on chart) to manage your pain better.*

Workshop #2:



- Welcome
 - *Welcome, this is the second of a series of six chronic pain group treatment sessions.*

- Re-cap of last time
 - *Here's a brief refresher of what we discussed last week: **Show chart of sum-up points from session #1**: Last time we learned several ways to manage your chronic pain:*
 - **KNOW**: *Chronic pain is pain that lasts longer than three months. Having social support can help you manage your stress better.*
 - **FEEL**: *Feeling anxious, depressed, or stressed can make your chronic pain seem worse.*
 - **THINK**: *Catastrophizing is when you think that your pain is so awful that you cannot handle it. Replacing these thoughts with more positive ones can make your pain seem better.*
 - **DO**: *Deep breathing exercises can make you feel more relaxed and better about your pain.*

- *Let's start today with what you know about pain, just like we did last time.*

KNOW:

- Understanding pain, continued: Acute vs. Chronic Pain
 - *Let's talk about what we call acute pain. What was the worst pain you can remember? Was it the time you scratched the cornea of your eye? Was it a kidney stone? (Pause for their responses.)*
 - *Everyone experiences acute pain at least once in their lives. Luckily, acute pain always comes to an end somehow. For example, if you scratched your eye, it healed, or if a kidney stone was bothering you, the stone passed. In each of these cases, pain flared up in response to a known cause. With treatment, or with the body's healing powers alone,*

you got better and the pain went away. Again, doctors call that kind of pain acute pain. It is a normal sensation triggered by the body to alert you to possible injury and the need to take care of yourself. The pain is brief, lasting between a few seconds and a few months, and usually has an identifiable physical cause.

- *Now let's talk about chronic pain. Chronic pain is different. Chronic pain persists. Chronic pain signals can keep firing for weeks, or even years. There may have been an initial mishap—a sprained back, a serious infection—that you recovered from long ago but the pain still lingers! Or you may be suffering chronic pain in the absence of any past injury. Such pain is called chronic benign pain or chronic nonmalignant pain. It is a non-life-threatening pain that lasts three months or more. When cancer is the cause of ongoing cause of pain, the pain is referred to as chronic malignant pain. Whatever the cause, chronic pain may impair the person's lifestyle. Chronic pain is real, constant, and often frightening.*
 - *Who here suffers from chronic pain? How did it begin for you? (Pause for responses).*

DO: *Now that we've gotten to understand what exactly chronic pain is a little better, let's talk about some behaviors that can affect your chronic pain. First, let's talk about what you might do that makes your pain feel worse.*

- *Factors that make your chronic pain worse, more generally: Obesity, nutrition, too much rest, tight jeans, lumbar (back) pressure*
- **YOUR TURN:** *Anyone experience any of these factors? Can you think of anything else? What about the things we talked about last time – things you do that can make chronic pain worse?*
- *Let's talk about some of the factors we mentioned at first:*
 - *Tight jeans: Tight jeans can be a work hazard. They greatly restrict your motion in the pelvic area. This forces you to pull and strain at the back to make up for lost motion in the hips and pelvis.*
 - *Obesity: make sure your weight is proper for your height and build. If you are 20 pounds overweight, it could be the same as carrying around a 20 lb load. Talk to your primary care doctor about ways you can lose weight safely.*
 - **YOUR TURN:** *Talking to your doctor about obesity or general weight loss can be difficult for some people. Let's talk about ways you can do that. (Show visual that includes the 3 components below.)*

OPENER: *It is usually good to start with a phrase that means you are about to bring up a new topic. Example: “I have a concern that I would like to discuss with you.”*

YOUR CONCERN: *Next, you’ll probably want to state your concern. Example: “I think I might need to lose weight in order to be healthier.”*

YOUR QUESTION: *Finally, you’ll want your doctor’s advice. Example: “Will you please tell me some ways I can do that?”*

Your doctor may or may not want you to lose weight. The important thing is to bring it up so that you can both discuss it and find what works best for you.

Who would like to give this a try? (Pause for a volunteer. Role play with the patient. The session leader should act as the doctor.)

Now, let’s talk about some things you can do to make your chronic pain feel better:

- Factors that can make your chronic pain better: At-home living and the behavioral factors that impact your chronic pain:
 - Tips for activities of daily living (e.g., getting dressed, washing, vacuuming, laundry, dishes, etc.)
 - Taking breaks periodically, wearing supportive shoes, asking for help from family members, working slowly and carefully
 - **YOUR TURN:** *Anyone experience any of these factors? Can you think of anything else? What about the things we talked about last time – things you do that can make chronic pain better?*
 - *Let’s talk about some of the activities we mentioned in more detail:*
 - *Getting up – Discs tend to swell during sleep, so you might feel stiff upon rising. When getting out of bed, roll to the side of the bed, lower your legs over the side, and push up onto your elbow and straight up. Don’t twist!*
 - *Getting dressed – Don’t twist while putting your shirt on, especially if it is a pull-over type. Sit down for socks and*

shoes. Pull your feet up to you rather than bending over. Do not bend over while standing! Your balance will be awkward and the smaller back muscles have to work harder. Wear flat shoes preferably.

- **THINK→FEEL:**
 - Talk about anxiety sensitivity. Explain that anxiety symptoms do not always mean impending doom.
 - *Now I want to talk to you about how what you think and how you feel can impact your pain. Remember when we talked about “thinking traps” last time? If you don’t remember or you weren’t here, all you need to know is that sometimes, the way we think can affect the way we feel. Today we’ll talk about a thinking trap called “anxiety sensitivity.” Anxiety sensitivity is a tendency to believe that anxiety symptoms mean that harmful or dangerous consequences are going to happen. A person who is high on anxiety sensitivity may interpret benign physical sensations, such as mild stomach upset, as indicative of something more serious, such as an ulcer...As you can imagine, this kind of thinking will make a person feel even more anxious! And that won’t be good for their pain. But it doesn’t have to be this way!*
 - *Let’s look at a case example. We’ll call the person John Doe. Let’s say that John Doe has chronic pain in his back. This morning when John Doe woke up, he noticed that his back muscles felt extra tense. Here are a couple of things that John Doe could think about his back being tense: A) that the muscle tenseness must mean that his back has gotten much worse, or B) that the muscle tenseness probably doesn’t mean anything serious is wrong with his back. (Show visual) Which do you think would be a more reasonable thought for John Doe to have? Why? (Pause for responses. Talk about how Option A is the “anxiety sensitivity” way of approaching it, and Option B is the more reasonable solution. Emphasize, however, that if the tenseness gets worse he should contact his doctor.)*

Visual:

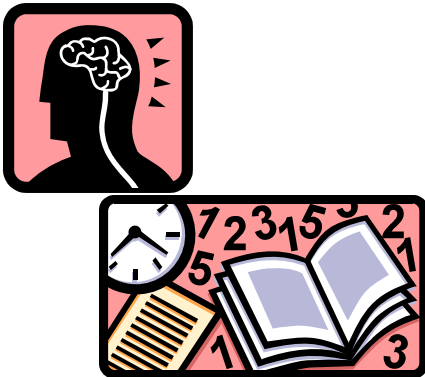
A) that the muscle tenseness must mean that his back has gotten much worse

B) that the muscle tenseness probably doesn’t mean anything serious is wrong with his back.

- **DO: YOUR TURN:** *Now we're going to practice something you can **do** to help manage your pain – it's the "deep breathing" exercise that we introduced last time. Today we'll do it for a little longer. Remember, deep breathing involves really concentrating on **how** you're breathing, plus breathing from your stomach rather than from your chest.*
 - *Why deep breathing can help you relax (Reminder from last time)*
 - *Deep breathing helps ensure that there is enough oxygen in your body. Your body needs oxygen to heal.*
 - *Deep breathing is something you can use to help you relax wherever you are.*
 - *Guide patients through the following steps. Demonstrate them for the patients as you guide them.*
 1. *Sit comfortably with feet uncrossed.*
 2. *Place one hand on the chest and the other on the abdomen.*
 3. *Inhale deeply through the nose, allowing your abdomen to expand, and move your lower hand outward.*
 4. *When the abdomen is extended, then allow your chest to expand and move the upper hand.*
 5. *Hold the air in for a couple of seconds.*
 6. *As you begin to exhale slowly, concentrate on creating a whooshing sound through pursed lips.*
 7. *Repeat several times in a slow, deliberate manner.*
 - *After about 10-15 inhalations, say in a quiet voice, **How are people feeling now?** Allow a minute or two for patients to answer. If people are indicating that they are not feeling relaxed, **Do not worry if you don't feel relaxed this time. It takes a while to learn how to use breathing as a way to relax your body. We will be doing more of this in the future, so you will have the chance to try again.***
- **Closing/Goodbye**
 - *Okay, now that everyone is relaxed, let's take a moment to reflect on what we've talked about today.*
 - **Show chart of sum-up points:** *Today we learned several ways to manage your chronic pain:*
 - **KNOW:** *Chronic pain is different from acute pain. Chronic pain is long-lasting and can be mild or severe. Acute pain occurs right after an injury or illness, is short-lasting, and is usually severe.*
 - **FEEL:** *Feeling anxious about physical symptoms can make you feel more anxious and make it harder to deal with your chronic pain.*

- **THINK:** Anxiety sensitivity is when you think anxiety symptoms mean that harmful or dangerous consequences are going to happen. You can change the way you think about mild anxiety or physical symptoms.
- **DO:** Deep breathing exercises can make you feel more relaxed and better about your pain.
- Next time, we will learn more about chronic pain (Point to “KNOW” on chart), we’ll talk more about how what you feel (Point to “FEEL” on chart) can affect your pain, we’ll continue discussing ways to change your thinking (Point to “THINK” on chart) to manage your pain better, and we’ll learn more about what you can do (Point to “DO” on chart) to manage your pain better.

Workshop #3:



- Welcome
 - Welcome, this is the third of a series of six chronic pain group treatment sessions.
- Re-cap of last time
 - Here’s a brief refresher of what we discussed last week: **Show chart of sum-up points from session #2:** Last time we learned several ways to manage your chronic pain:

- **KNOW:** *Chronic pain is different from acute pain. Chronic pain is long-lasting and can be mild or severe. Acute pain occurs right after an injury or illness, is short-lasting, and is usually severe.*
 - **FEEL:** *Feeling anxious about physical symptoms can make you feel more anxious and make it harder to deal with your chronic pain.*
 - **THINK:** *Anxiety sensitivity is when you think anxiety symptoms mean that harmful or dangerous consequences are going to happen. You can change the way you think about mild anxiety or physical symptoms.*
 - **DO:** *Deep breathing exercises can make you feel more relaxed and better about your pain.*
- **KNOW** *Let's start today with what you know about pain, just like we did last time.*

Sleep:

- *Does it often take you more than 30 minutes to fall asleep at night? Or do you wake up frequently during the night—or too early in the morning—and have a hard time going back to sleep? When you awaken, do you feel groggy? Do you feel drowsy during the day particularly during monotonous situations? (Pause for hand raises.)*
- *If you answered “yes” to any one of these questions, you may have a “sleep debt” that is affecting you in ways you don’t even realize. And, you aren’t alone. A recent NSF Sleep in America poll found that a majority of American adults experience sleep problems. However, few recognize the importance of getting enough rest, or are aware that effective methods of preventing and managing sleep problems exist.*
- *Sleep is important for good health, mental and emotional functioning and safety. For instance, researchers have found that people with chronic insomnia are more likely than others to develop several kinds of psychiatric problems, and are also likely to make greater use of healthcare services. People suffering from a sleep disorder called sleep apnea are at risk for high blood pressure, heart attacks, stroke, and motor vehicle crashes if left untreated. Even occasional sleeping problems can make daily life feel more stressful or cause you to be less productive.*
- How much is needed
 - *Sleep needs vary. In general, most healthy adults need seven to nine hours of sleep a night. However, some individuals are able to function without sleepiness or drowsiness after as little as six hours of sleep. Others can’t perform at their peak unless they’ve slept ten hours. And, contrary to common myth, the need for sleep doesn’t*

decline with age (although the ability to get it all at one time may be reduced).

- *So, how do you measure how much sleep you truly need? If you have trouble saying alert during boring or monotonous situations when fatigue is often “unmasked” you probably aren’t getting enough good, quality sleep. Other signs are a tendency to be unreasonably irritable with co-workers, family, or friends, and difficulty concentrating or remembering facts.*
- *How many hours do you need? (Wait for responses.)*
- *Who’s at risk for poor sleep, The Biggest “Sleep Stealers”*
The “Biggest Sleep Stealers”:

FEEL:

1) Psychological factors: Stress is considered by most sleep experts to be the No. 1 cause of short-term sleeping difficulties. Common triggers include school-or-job-related pressures, a family or marriage problem, and a serious illness or death in the family. Usually the sleep problem disappears when the stressful situation passes. However, if shortterm sleep problems such as insomnia aren’t managed properly from the beginning, they can persist long after the original stress has passed. That’s why it’s a good idea to talk to a physician about any sleeping problem that recurs or persists for longer than one week. Your doctor can help you take steps early to control or prevent poor sleep. Since insomnia can also be brought on by depression, it’s important to keep in touch with the physician treating your depression.

2) Lifestyle stressors: Without realizing it, you may be doing things during the day or night that can work against getting a good night’s sleep. These include drinking alcohol beverages containing caffeine in the afternoon or evening, exercising close to bedtime, following an irregular morning and nighttime schedule, and working or doing other mentally intense activities right before or after getting into bed.

DO:

3) Environmental interferences: A distracting sleep environment such as a room that’s too hot or cold, too noisy or too brightly lit can be a barrier to sound sleep. And interruptions from children or other family members can also disrupt sleep. Other influences to pay attention to are the comfort and size of your bed and the habits of your sleep partner.

4) Physical factors: A number of physical problems can interfere with your ability to fall or stay asleep. For example, arthritis and other conditions that cause pain, backache, or discomfort can make it difficult to sleep well. Sleep apnea, which is recognized by snoring and interrupted breathing, causes brief awakenings (often unnoticed) and excessive daytime sleepiness. If suspected, a person having signs of sleep apnea should see a doctor.

5) Medications: In addition, certain medications such as decongestants, steroids, and some medications for high blood pressure, asthma, or depression can cause sleeping difficulties as a side effect.

6) What are some other things that can interfere with getting good sleep? (Pause for responses.)

- What's the secret to good sleep?

If you are having a sleep problem or feel sleepy during the day, a visit with your doctor is the best first step. Your doctor will first want to ascertain whether there are any underlying problems that are contributing to or causing your sleep problem. In many cases, your doctor will be able to recommend lifestyle changes that can help promote sleep. Keep in mind that what works for some individuals may not work for others. So, your best bet is to find out what's effective for you can stick with it. In general, try to build into your schedule time for eight hours of sleep, and follow this routine as regularly as possible. Even on the weekends. Here are a few tips many people have found to be useful:

1.) Avoid caffeine, nicotine and alcohol in the late afternoon and evening. Caffeine and nicotine can delay your sleep, and alcohol may interrupt your sleep late in the night.

2.) Exercise regularly, but do so at least three hours before bedtime. A workout after that time may actually keep you awake because your body has not had a chance to cool down.

3.) Don't use your bed for anything other than sleep. Your bed should be associated with sleep.

4.) *If you have trouble sleeping when you go to bed, don't nap during the day, since it affects your ability to sleep at night.*

5.) *Consider your sleep environment. Make it as pleasant, comfortable, dark, and quiet as you can.*

6.) *Establish a regular, relaxing bedtime routine that will allow you unwind and send a "signal" to your brain that it's time to sleep. Avoiding exposure to bright light before bedtime and taking a hot bath may help.*

7.) *If you can't go to sleep after 30 minutes, don't stay in bed tossing and turning. Get up and involve yourself in a relaxing activity, such as listening to soothing music or reading, until you feel sleepy. Remember: try to clear your mind; don't use this time to solve your daily problems.*

8.) *What are some other ways you can get better rest? (Pause for responses.)*

DO:

○ Relaxation Techniques

You may think that taking a few minutes to unwind at the end of the day is all the relaxation you need. Unfortunately, a few minutes won't provide the stress-reducing benefits of deep relaxation. When you truly relax, you eliminate tension from your body and your mind. And if you're experiencing a lot of stress in your life, you need to make time to relax. Otherwise, the negative effects of your body's stress response—which may include headaches, insomnia, or increased risk of heart disease—can harm your health. Learning to relax doesn't have to be difficult. Try some simple techniques to get started on your way to tranquility and the health benefits it provides.

THINK:

○ Why relax?

How many think relaxing is important? (Pause for show of hands.) How many of you believe that relaxing can benefit your physical health? (Pause for show of hands.) With so many things to do, it's easy to put off taking time to relax each day. But in

doing so, you miss out on the health benefits of relaxation. Relaxation can improve how your body responds to stress by:

-slowing your heart rate, meaning less work for your heart

-reducing blood pressure

-slowing your breathing rate

-reducing the need for oxygen

-increasing blood flow to major muscles

-lessening muscle tension

*Has this changed anyone's mind about relaxation? (Pause for response.) As you can see, there are a lot of health benefits you get simply by relaxing. It can be helpful, then, to think of relaxation as part of your daily health regime. *One note about television: Many people like to watch tv before bed, as a way to relax. However, the bright light of a tv can actually make it harder for you to become tired!*

DO: YOUR TURN:

Guide patients through a deep breathing/relaxation exercise.

Counting breaths:

This breathing exercise is adapted from Zen meditation. It can be helpful if you ever find that your mind is racing. It is recommended that you use this exercise for a minute or two as a brief form of relaxation, or for 15 minutes or longer as a form of meditation.

Before we begin, we will practice deep (diaphragmatic) breathing. You don't want to breath using your chest. Instead, you should breath using your stomach. Place a hand on your stomach right now. Inhale as you normally would, but when you exhale, I want you to push your stomach out. Like this (demonstrate): breath in, then out, in, then out. Try it. Remember, take normal-sized breaths. The point of deep breathing is not to inhale as much as you can, but to draw air into the lower lungs by pressing your stomach out as you exhale.

Now let's try an exercise using deep breathing.

Step 1. Sit in a comfortable position, with your back relatively straight. Try this right now.

Step 2. Keep your eyes open and focus on the floor a yard or two in front of you. Go ahead.

Step 3. Breathe through your nose. Count each exhalation silently to yourself. When you reach 10, I want you to start again at 1. If your mind wanders or you lose track, which is very likely to happen, I want you to simply start again at 1.

- Closing/Goodbye
 - Okay, now that everyone is relaxed, let's take a moment to reflect on what we've talked about today.
 - **Show chart of sum-up points:** *Today we learned several ways to manage your chronic pain:*
 - **KNOW:** *Sleep is important for your body to heal, and most people need 7-9 hours a night.*
 - **FEEL:** *Psychological stress and physical pain can both make it harder to fall and stay asleep.*
 - **THINK:** *Think of relaxation as part of your health regime.*
 - **DO:** *Some things you can do to help you sleep at night include breathing techniques and other forms of relaxation, avoiding bright lights before bedtime, and establishing a regular bedtime.*
 - *Next time, we will learn more about chronic pain (Point to "KNOW" on chart), we'll talk more about how what you feel (Point to "FEEL" on chart) can affect your pain, we'll continue discussing ways to change your thinking (Point to "THINK" on chart) to manage your pain better, and we'll learn more about what you can do (Point to "DO" on chart) to manage your pain better.*

Workshop #4:



- Welcome
 - *Welcome, this is the fourth of a series of six chronic pain group treatment sessions.*

- Re-cap of last time
 - *Here's a brief refresher of what we discussed last week: **Show chart of sum-up points from session #3**: Last time we learned several ways to manage your chronic pain:*
 - **KNOW**: *Sleep is important for your body to heal, and most people need 7-9 hours a night.*
 - **FEEL**: *Psychological stress and physical pain can both make it harder to fall and stay asleep.*
 - **THINK**: *Think of relaxation as part of your regular health regime.*
 - **DO**: *Some things you can do to help you sleep at night include breathing techniques and other forms of relaxation, avoiding bright lights before bedtime, and establishing a regular bedtime.*

 - **KNOW**: *Introduction to meaning and goals for today*
 - *We are all meaning-makers in our life and cannot—even if we wanted to—escape from trying to find meaning in our pain. What takes place in your mind, or what meaning you give to your pain, whether physical or emotional pain, is the most important aspect of pain. It is also the most difficult aspect of pain to treat or even understand. If you can learn to find meaning in your pain, then it is likely that your pain can be kept in its proper place, as a servant and not the master of you.*

- *There are two main goals for today's session: 1) to talk to you to the things that intensify your pain, and their role in diminishing your quality of life, and 2) to discuss the process of finding meaning and a healthy quality of life with chronic pain*

FEEL:

- Emotional Intensifiers to Pain
 - *Some emotions, namely fear, anger, guilt, and helplessness, are more present in individuals with certain psychological disorders, like PTSD and depression. Additionally, loneliness, along with a feeling of isolation and social withdrawal, are often reported by people with PTSD. Frequently, people feel that they cannot share their trauma because others that have not shared similar traumatic events have misunderstood them. It is likely that those with both mental illness and chronic pain would benefit from finding ways to manage these intensifiers of pain before these reactions take charge of their lives. But the first step is to recognize if these pain intensifiers are a part of a person's life.*
 - Fear:
 - Almost every person in pain experiences fear, and no pill or injection will cure it. Research studies conducted in hospital settings confirm that fear is the strongest intensifier of pain. When an injured person is afraid, muscles tense up and contract, increasing the pressure on damaged nerves and causing even more pain.*
 - Remember that it is important to face your fear before the fear paralyzes you. It helps to have a health provider with whom you can discuss your worries and fears.*
 - Talk about your fear with others whose judgment and opinions you trust. Obtaining support from family and friends can allow you to experience other points of view, gain information, form different problem solving strategies, and most of all, help you feel less fear. The pain you experience may not be entirely avoidable, but the misery of pain is optional.*

DO: YOUR TURN: Role play exercise: Ask two volunteers. Have them come up and designate one as the talker and one as the listener. The talker is to tell the listener about their pain. Have them practice talking about their pain-related fears. Provide assistance by identifying possible things they can say. Ask for suggestions from the rest of the group.

FEEL:

- Anger

--The reaction of anger can take the form of suspiciousness, being emotional labile, bitterness, holding resentments, cynicism, chronic complaining, worrying, being defensive, hostility, and taking people and situations too personally.

- *How many of you believe that you have a bad temper? (Pause for a show of hands.) Having chronic pain puts you at risk for experiencing more anger than usual. Too much anger, and poor anger management, can make it difficult to cope with pain. If you can learn to manage your anger well, you will be better able to cope with your chronic pain condition.*
- *Let's talk about anger management. Poor anger management includes keeping it all inside, slamming doors, and lashing out at others. On the other hand, good anger management is being able to control your anger so that you do not do any of these things. One way to control your anger is to count to 10 before reacting. Another way to control your anger in a positive way is to focus on your breathing, like we have practiced in these sessions.*

FEEL:

- Helplessness

--Persons with chronic pain report feeling powerless and helpless with regards to how the health care system and health providers may interpret and manage their pain. Likewise, individuals with PTSD felt helpless in the face of traumatic life events that they could not change at the time they occurred. Individuals with depression may feel helpless about the source of their sadness, and individuals with substance abuse may feel that drinking or drugging is their only escape from pain.

--Numerous studies have indicated a clear relationship between a sense of capability and the level of perceived pain. Dr. Ronald Melzack, who has researched pain for several decades, reports, "It is possible to change the level of pain by giving people the feeling that they have control over it even though, in fact, they do not.

--The pain prone person can view himself or herself in one of two ways: 1) as a victim who is unfairly cursed. The disorder will define the identity of the person, as the "pain patient" or, 2) as a survivor who is a regular human being

who is slowed by chronic pain, but not stopped. They are “persons in pain.” They slowly force themselves to go about their recovery plan even though it hurts.

FEEL:

- Guilt
 - *Many people with chronic pain also experience guilt. For people with chronic pain, sources of guilt include feeling cursed by God and feeling that they deserve to suffer for some past deed. For persons with PTSD, for example, a significant source of guilt can come from knowing one has survived a trauma when others were not so fortunate. People with depression also have a tendency to feel more guilt than usual.*
 - *If you feel guilty about some past deed, it is important to find a way to obtain the forgiveness you need in order to move on with your life. Usually this involves seeking self-acceptance and forgiveness from others and/or self-forgiveness, through a conscious contact with a power greater than oneself.*
 - **YOUR TURN:** *Do you experience guilt? If so, how can you get rid of it?*

- **THINK: YOUR TURN:** Question & Answer Session
 - *1. Do you practice the “life participant” attitude, which is feeling that you have power to respond to life the way you want to? Or do you practice the “victim mentality,” which is feeling like you have no power or choice to make your life different? Do you ever experience fear, resentment, or a “poor me” attitude? What could you think instead? (Allow time for discussion.)*
 - *2. Do you know how to say “no” when you need or want to do so? Do you have healthy boundaries? Do you feel good about caring for yourself, or do you feel guilty? (Allow time for discussion.)*
 - *Which intensifiers of pain such as fear, anger, and helplessness are you carrying around? Which are you ready to let go of at this point in your recovery with pain? (Allow time for discussion.)*

DO: YOUR TURN:

Guide patients through a deep breathing/relaxation exercise.

To end today's session, we're going to do another breathing exercise. It's the one that we practiced last time, only I want you to aim for a few minutes longer this time.

Counting breaths:

This breathing exercise is adapted from Zen meditation. It can be helpful if you ever find that your mind is racing. It is recommended that you use this exercise for a minute or two as a brief form of relaxation, or for 15 minutes or longer as a form of meditation.

Before we begin, we will practice deep (diaphragmatic) breathing. You don't want to breath using your chest. Instead, you should breath using your stomach. Place a hand on your stomach right now. Inhale as you normally would, but when you exhale, I want you to push your stomach out. Like this (demonstrate): breath in, then out, in, then out. Try it. Remember, take normal-sized breaths. The point of deep breathing is not to inhale as much as you can, but to draw air into the lower lungs by pressing your stomach out as you exhale.

Now let's try an exercise using deep breathing.

Step 1. Sit in a comfortable position, with your back relatively straight. Try this right now.

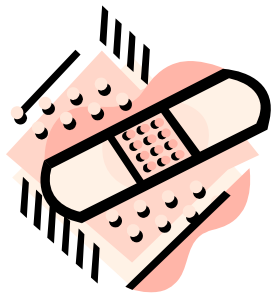
Step 2. Keep your eyes open and focus on the floor a yard or two in front of you. Go ahead.

Step 3. Breathe through your nose. Count each exhalation silently to yourself. When you reach 10, I want you to start again at 1. If your mind wanders or you lose track, which is very likely to happen, I want you to simply start again at 1.

- Closing/Goodbye
 - Okay, now that everyone is relaxed, let's take a moment to reflect on what we've talked about today.
 - **Show chart of sum-up points:** *Today we learned several ways to manage your chronic pain:*
 - **KNOW:** *If you can learn to find meaning in your pain, then it is likely that your pain can be kept in its proper place, as a servant and not the master of you.*

- **FEEL:** Emotions, like guilt, fear, anger, and helplessness can both make it harder to manage pain.
- **THINK:** You can change the way you think about pain so that you don't have to feel so guilty, fearful, angry and helpless!
- **DO:** Talking about your pain-related fears with others can help.
- Next time, we will learn more about chronic pain (Point to "KNOW" on chart), we'll talk more about how what you feel (Point to "FEEL" on chart) can affect your pain, we'll continue discussing ways to change your thinking (Point to "THINK" on chart) to manage your pain better, and we'll learn more about what you can do (Point to "DO" on chart) to manage your pain better.

Workshop #5:



- Welcome
 - *Welcome, this is the fifth of a series of six chronic pain group treatment sessions.*

- Re-cap of last time
 - *Here's a brief refresher of what we discussed last week: **Show chart of sum-up points from session #4**: Last time we learned several ways to manage your chronic pain:*
 - **KNOW**: *If you can learn to find meaning in your pain, then it is likely that your pain can be kept in its proper place, as a servant and not the master of you.*
 - **FEEL**: *Emotions, like guilt, fear, anger and helplessness can both make it harder to manage pain.*
 - **THINK**: *You can change the way you think about pain so that you don't have to feel so guilty, fearful, angry, and helpless!*
 - **DO**: *Talking about your pain-related fears with others can help.*

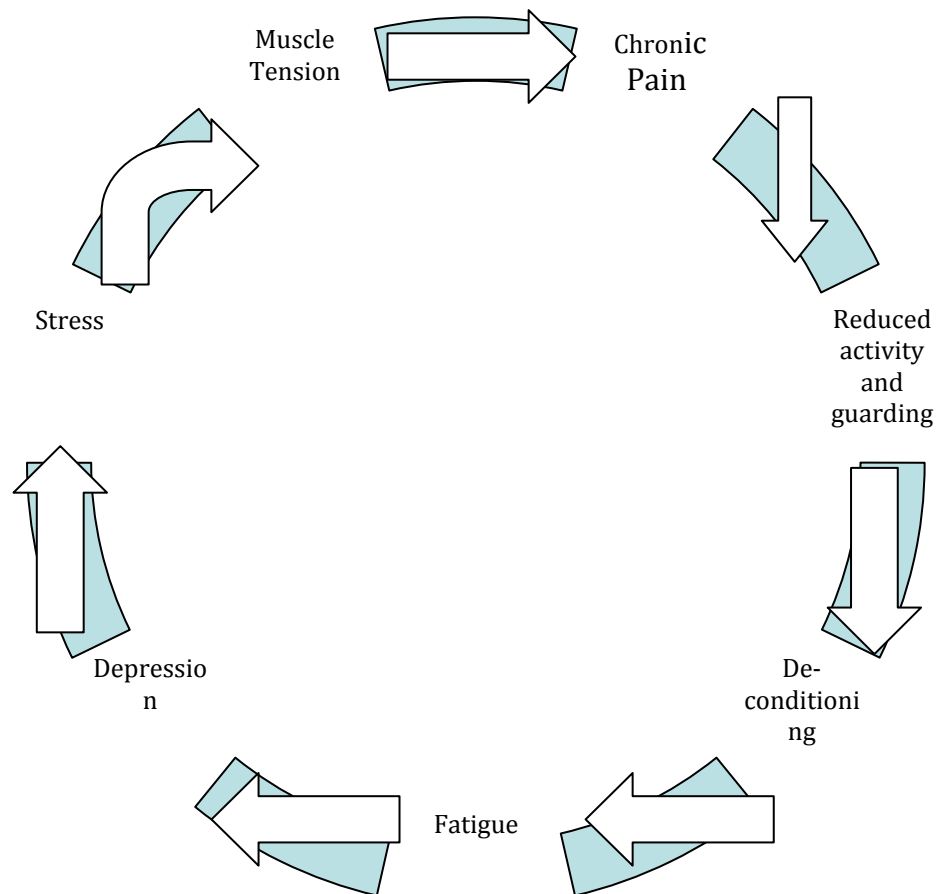
KNOW: *Let's start out today with some information about chronic pain. We'll first talk about resting an injury, and then we'll discuss nutrition.*

- **Rest**: *Those who suffer with chronic pain often become used to guarding against their pain by avoiding as much activity as possible. By resting as much as possible, people believe that they will prevent further pain. However, some doctors disagree. Some doctors say you should give every joint a full range of activity every day. When we rest for too long, our muscles can get weaker, and when we have weaker muscles, we are more likely to trip, fall, slip, or otherwise re-injury ourselves. So, it is important to rest an injury or rest when you have pain, but there is such a thing as TOO much rest! It is hard to know when to rest, and when to use your body, though, so asking your doctor is crucial.*
 - *The relationship between pain and fatigue:*
 - *Persons suffering from chronic pain often report fatigue as compromising the quality of their life. For this reason, it is important that you understand the cycle of pain and fatigue. Interventions to interrupt this cycle can lessen the severity of your pain.*
 - *Chronic pain reduces activity and causes guarding or disuse of your body. This produces a deconditioning (briefly explain this term) and fatigue. This can lead to depression and*

chronic stress, which causes muscle tension. The muscle tension can then contribute to more pain.

- *Chronic pain --- Reduced Activity and Guarding --- Deconditioning --- Fatigue --- Depression --- Stress --- Muscle Tension --- Chronic Pain*
- **Show flow chart that illustrates the above.**

(next page)



- **YOUR TURN:** Does this cycle sound familiar to you? How can you stop the cycle?

- **Nutrition:** Nutrition is very important for healthy tissues. Junk food does not lend itself to replenishing muscle tissues. Without proper nourishment, without the right kinds of food, muscle tissues can age instead of rebuild. Talk to your primary care doctor about ways you can eat better.
- **DO: YOUR TURN:** Talking to your doctor about nutrition and exercise can be difficult for some people. Let's talk about ways you can do that. **Show visual that includes the 3 components below.)**

OPENER: It is usually good to start with a phrase that means you are about to bring up a new topic.

Example: “I have a concern that I would like to discuss with you.”

YOUR CONCERN: *Next, you’ll probably want to state your concern. Example: “I think I might need to eat better/exercise in order to be healthier.”*

YOUR QUESTION: *Finally, you’ll want your doctor’s advice. Example: “Will you please tell me some ways I can do that?”*

Your doctor may or may not want you to lose weight. The important thing is to bring it up so that you can both discuss it and find what works best for you.

Who would like to give this a try? (Pause for a volunteer. Role play with the patient. The session leader should act as the doctor.)

- **THINK:** *Now let’s talk about the way your thoughts can impact your chronic pain.*
 - **Self talk:** *One of the most helpful tools for changing the way you think is to listen to what you say to yourself as you respond to events, physically, emotionally, and socially. This is called “Self Talk.” This approach is based on the idea that many moods, emotions, and feelings are sustained by self-talk. The good news is that if you change the way you talk to yourself, you can actually change how you feel.*
 - *Self talk is automatic, happens very quickly, and isn’t always phrased in complete sentences. For example, a person might think, “I’m no good” or “It’s my fault that I have pain” or “Nothing is fair”*
 - *We all engage in negative self talk at one time or another. Most of the negative self-talk is inaccurate because it distorts events in exaggerated, magnified, all or nothing ways that make us feel defeated or helpless. We become victims of the idea that the outside world is responsible for our misery.*
 - **YOUR TURN:** *Which ones sound most like you?*

1. *going for broke: all or nothing thinking. Example: you assume all the responsibility or none of it. ("The pain is all your fault" or "the pain is all my fault")*

2. *expecting consistency in the world. Example: you expect people and events in the world to be consistent when this does not exist. ("If I am good, bad things won't happen to me.")*

3. *forecasting the worst: example: you expect the worst in every situation is something you probably learned living with your stress. In the beginning, it may have helped you survive threatening events. but now that survival strategy may keep you from enjoying the positive events in life. It goes something like this, "If I expect the worst to happen, then I shall never be surprised by anything and no one can hurt me."*

4. *why me? Example: you feel that bad things are happening to you alone more than to anyone else. "Why does this have to happen to me?"*

- **Positive Qualities that are Important for Finding Meaning and Healthy Quality of Life with Chronic Pain:** *Now let's talk about some positive ways that your emotions and the way you think can impact your chronic pain. Let's start by talking about gratitude.*

1. **FEEL:** *Unload your resentments and foster an attitude of gratitude*

- *What we think and feel in the mind affects the health of our bodies. Gratitude is the response most nourishing to health.*
- *The reason that Dr. Brand, an orthopedic surgeon and co-author of the book, The Gift of Pain, encourages gratitude is that one's underlying attitude toward the body can have a major impact on health. By regarding the body with respect, wonder, and appreciation, a person is more motivated to behave in a way that sustains health and is then able to develop a sense of personal destiny over his or her own body.*
- *Dr. Brand advises people to "think of pain as a speech your body is delivering about a subject of vital importance to you. The body is using the language of pain because that is the most effective way to get your attention. This approach can be called "befriending the pain." You can take what is ordinarily seen as an enemy and disarm and then welcome it.*
- **YOUR TURN:** *What does it mean to have gratitude? How can having gratitude help you take better care of your body?*

2. **THINK:** Listen to the pain.

- You can think of pain as an important “speech” your body is delivering to you. From the very first twinge, pause and listen to the pain and try to be grateful. Your body is using the language of pain because that’s the most effective way to get your attention.
- People who view pain as the enemy are likely to respond with anger or bitterness. They may say, “Why me? I don’t deserve this! Or It’s not fair!” These responses are natural initial responses but when they become a permanent way of responding to chronic pain, they set up a vicious cycle and make pain even worse.
- **YOUR TURN:** Why might it be helpful to be “grateful” for pain? What kinds of behaviors may it lead you to do? Discuss the idea that pain not only teaches what abuses to avoid, but also hints at the positive qualities the body needs.

3. **THINK:** Imagine yourself a survivor of your pain

- A person’s “will to recover” can be an important factor in rehabilitation. Rehabilitation, or, in other words, improving your condition, can be very demanding on a daily basis. Your mind can affect the final extent of rehabilitation. It takes motivation and discipline to rehabilitate yourself.
- **YOUR TURN:** Do you feel you have the “will to recover?” What has been challenging?

○ Reflection:

- **YOUR TURN** What does your chronic pain say about the quality of your life? What is important/meaningful/valuable to you in life?

DO: **YOUR TURN:**

Guide patients through a deep breathing/relaxation exercise.

To end today’s session, we’re going to do another breathing exercise. It’s the one that we practiced last time, only I want you to aim for a few minutes longer this time.

Counting breaths:

This breathing exercise is adapted from Zen meditation. It can be helpful if you ever find that your mind is racing. It is recommended that you use this exercise for a minute

or two as a brief form of relaxation, or for 15 minutes or longer as a form of meditation.

Before we begin, we will practice deep (diaphragmatic) breathing. You don't want to breath using your chest. Instead, you should breath using your stomach. Place a hand on your stomach right now. Inhale as you normally would, but when you exhale, I want you to push your stomach out. Like this (demonstrate): breath in, then out, in, then out. Try it. Remember, take normal-sized breaths. The point of deep breathing is not to inhale as much as you can, but to draw air into the lower lungs by pressing your stomach out as you exhale.

Now let's try an exercise using deep breathing.

Step 1. Sit in a comfortable position, with your back relatively straight. Try this right now.

Step 2. Keep your eyes open and focus on the floor a yard or two in front of you. Go ahead.

Step 3. Breathe through your nose. Count each exhalation silently to yourself. When you reach 10, I want you to start again at 1. If your mind wanders or you lose track, which is very likely to happen, I want you to simply start again at 1.

- Closing/Goodbye
 - Okay, now that everyone is relaxed, let's take a moment to reflect on what we've talked about today.
 - **Show chart of sum-up points:** *Today we learned several ways to manage your chronic pain:*
 - **KNOW:** *It is important to rest your body, but there is such a thing about TOO much rest. Chronic pain, decreased activity, deconditioning, fatigue, depression, stress, and muscle tension are all part of the same cycle.*
 - **FEEL:** *It can be helpful to develop an attitude of gratitude about your pain.*

- **THINK:** Listen to the “message” that your body is sending you. Imagine yourself a **survivor** of pain.
 - **DO:** Talk to your doctor about proper rest and nutrition. Ask if you need to change your resting or eating habits.
- Next time, we will learn more about chronic pain (Point to “KNOW” on chart), we’ll talk more about how what you feel (Point to “FEEL” on chart) can affect your pain, we’ll continue discussing ways to change your thinking (Point to “THINK” on chart) to manage your pain better, and we’ll learn more about what you can do (Point to “DO” on chart) to manage your pain better.

Workshop #6:



- Welcome
 - Welcome, this is the sixth and final session of a series of six chronic pain group treatment sessions.

- Re-cap of last time
 - *Here's a brief refresher of what we discussed last week: **Show chart of sum-up points from session #5**: Last time we learned several ways to manage your chronic pain:*
 - **KNOW**: *It is important to rest your body, but there is such a thing about TOO much rest. Chronic pain, decreased activity, deconditioning, fatigue, depression, stress, and muscle tension are all part of the same cycle.*
 - **FEEL**: *It can be helpful to develop an attitude of gratitude about your pain.*
 - **THINK**: *Listen to the "message" that your body is sending you. Imagine yourself a **survivor** of pain.*
 - **DO**: *Talk to your doctor about proper rest and nutrition. Ask if you need to change your resting or eating habits.*

- Goals for today:
 - *Some individuals are less vulnerable to stress and have stress-hardy or hardiness characteristics that are associated with a decreased incidence of illness. The characteristics of stress hardiness are capability, challenge, commitment and closeness.*
 - *Stress hardy individuals see stress as a challenge rather than a threat. Second, they feel in charge of their life situation. Thirdly they have a sense of commitment rather than alienation from work, home, and family. Lastly, they appreciate the value of nurturing close relationships with others in their lives.*
 - *Today's goals are:*
 - *To understand ways that a stress hardy style of addressing the world can be a strength when one is dealing with chronic pain. We will challenge you to development positive attitude identified as the 4 Cs of hardiness: capability, challenge, commitment, and closeness.*
 - *To identify irrational and distorted thought patterns which sabotage a hardy approach to life challenges.*
 - *To practice developing hardiness by "catching self-talk."*

- KNOW:**
 - *Webster's dictionary defines the quality of being "hardy" or to have "hardiness" as being "capable of withstanding adverse conditions; to be bold and brave." Persons with chronic pain certainly learn to face obstacles with courage, commitment, and the ability to adapt and be flexible every day of their lives. Nurturing this way of viewing life's obstacles has been shown to assist individuals in coping with stress.*
 - *The stresses that your chronic pain has brought into your life have been very challenging and have required significant adjustments in your lifestyle.*

Some of these adjustments may have been helpful and some may have included self-destructive behaviors such as overeating, overworking, overcontrolling others, excessive drinking, smoking, or drug use.

- **YOUR TURN:** *Have any of you engaged in self-destructive behaviors as a way to cope with your chronic pain? How did you overcome them?*
- *Some psychologists and scientists have found that developing a positive approach to stress can be beneficial. They have found that some individuals are less vulnerable to stress and have stress-hardy, or hardiness, characteristics that are associated with a decreased incidence of illness.*
- **Capability, Challenge, and Commitment:**
 - *In addition to exercise and social support, topics that will be discussed later in this program, the characteristics of stress hardiness are capability, challenge, and commitment, and closeness. You can call these the “four Cs.”*
 - *Stress hardy individuals see stress as a challenge rather than a threat. Second, they feel capable of managing of their life situation. Thirdly, they have a sense of commitment rather than alienation from work, home, and family.*
 - *People who enjoy a challenge can view stress and the future as a chance for new opportunity and personal growth. If they have a sense of control, they know they can make lasting personal choices and influence events around them. And if they have a strong sense of commitment, they find it easier to become involved, to be curious, and interested in activities and people.*
 - *We are confident of your ability to be hardy because your body naturally has an ability to seek a healthier state that needs to be nurtured and coached with practice.*
- **THINK:** *Remember the acronym HARDY during this session as you develop hardiness tools. Let’s explore the five parts of this acronym.*
 - H is for HARNESSING the power of the mind*
 - A is for ACTION is another word for change*
 - R is for RESPONSIBILITY for change lies with you*
 - D is for DIFFERENCE you can make in the Quality of your life*
 - Y is for YOU have the “Healer in You” to develop hardiness*
- **THINK:** *Chronic pain can lead to rigid thinking or limiting oneself to the same old situations. Anxiety may make you afraid to try new ways of thinking. With your trauma, you felt powerless and with your chronic pain, you may also feel helpless at times. So you may have come to believe that you cannot have control over your life.*

- *If you used substances to cope with chronic pain, you were probably relying on short-term, impulsive solutions rather than long-term, planned solutions.*
- *Placing all our energies in changing things around us is not always a solution for gaining a sense of control. One way of looking at stress is seeing it as the perception of threat to our physical and psychological well-being, and the perception that we are unable to cope. These perceptions can often be changed by identifying the myths in our thinking that hold us captive to reacting in certain ways.*
- *We can choose effective strategies to reduce our stress. If we alter our perceptions we can change our experience of the stress and control our reaction. When we recognize that stress is the way we perceive a threat and our reaction to the perception, then logically we can do something to manage our perceptions and reactions. You cannot always control or change a situation, but you can retain control over the way you react to and think about stress.*
- *We know that certain ways of thinking – for instance, catastrophizing, denial, avoidance, and wishful thinking are commonly associated with disability in chronic pain. Many of the ways of thinking have to do with feeling out of control. We also know that these thinking patterns can be changed to the ones that enhance the feeling that you are capable.*
- *Certain beliefs about pain, such as “Whatever happens to me is out of my control and will defeat me” and “What happens to me is determined by chance and is out of my control” are associated with increased negative emotions and disability.”*
 - **YOUR TURN:** *Do you ever have these thoughts? How could you turn these thoughts around?*
- *Your pain may not be as grim or intense on a sunny warm day or when someone has said “I love you” or when you have gone to your support group meeting or spoken on the telephone to one of your friends.*
 - **FEEL. YOUR TURN:** *Do you notice that you have negative thoughts at certain times and not at others? When? How are you feeling when you have negative thoughts? How are you feeling when your thoughts aren’t as negative?*

DO:

Breathing exercise: Holding the Breath: *Today we’ll do another relaxation exercise. First, I want everyone to sit comfortably. Remember the deep breathing technique we practiced? The one where your stomach expands as you exhale? I want you to use that. Let’s practice that right now. (Demonstrate and practice a few breaths.) Okay, now we’re going to try something called “holding the breath. This is how you do it: first, inhale through your nose for a count of 3. Next, hold the breath in your lower lungs*

for a count of 3. Then, release the breathe through pursed lips, while saying "relax" to yourself. (Demonstrate.) Let's all try it now. (Do for a few cycles.)

- Closing/Goodbye
 - Okay, now that everyone is relaxed, let's take a moment to reflect on what we've talked about today.
 - **Show chart of sum-up points:** *Today we learned several ways to manage your chronic pain:*
 - **KNOW:** *stress- hardiness is associated with a decreased incidence of illness. The characteristics of stress hardiness are capability, challenge, commitment and closeness.*
 - **FEEL:** *the type of mood you're in may affect your thoughts*
 - **THINK:** *remember the acronym HARDY as a way to change your thinking and attitude in a positive, "stress-hardy" way*
 - **DO:** *keep up your breathing exercises at home as a way to relax*
 - *Thank you for attending the last of the 6-week series chronic pain sessions. Let's take a moment to reflect on the past 6 weeks. (Open up for discussion.)*

Sum-Up Charts:

WORKSHOP #1 SUM-UP POINTS:

Today we learned several ways to manage your chronic pain:



- **KNOW:** *Chronic pain is pain that lasts longer than three months. Having social support can help you manage your stress better.*



- **FEEL:** *Feeling anxious, depressed, or stressed can make your chronic pain seem worse.*



- **THINK:** *Catastrophizing is when you think that your pain is so awful that you cannot handle it. Replacing these thoughts with more positive ones can make your pain seem better.*



- **DO:** *Deep breathing exercises can make you feel more relaxed and better about your pain.*

WORKSHOP #2 SUM-UP POINTS:

Today we learned several ways to manage your chronic pain:



- **KNOW:** Chronic pain is different from acute pain. Chronic pain is long-lasting and can be mild or severe. Acute pain occurs right after an injury or illness, is short-lasting, and is usually severe.



- **FEEL:** Feeling anxious about physical symptoms can make you feel even more anxious and make it harder to deal with your chronic pain.



- **THINK:** Anxiety sensitivity is when you think anxiety symptoms mean that harmful or dangerous consequences are going to happen. You can change the way you think about mild anxiety or physical symptoms.



- **DO:** Deep breathing exercises can make you feel more relaxed and better about your pain.

WORKSHOP #3 SUM-UP POINTS:

Today we learned several ways to manage your chronic pain:



- **KNOW:** *Sleep is important for your body to heal, and most people need 7-9 hours a night.*



- **FEEL:** *Psychological stress and physical pain can both make it harder to fall and stay asleep.*



- **THINK:** *Think of relaxation as part of your regular health regime.*



- **DO:** *Some things you can do to help you sleep at night include breathing techniques and other forms of relaxation, avoiding bright lights before bedtime, and establishing a regular bedtime.*

WORKSHOP #4 SUM-UP POINTS:

Today we learned several ways to manage your chronic pain:



- **KNOW:** *If you can learn to find meaning in your pain, then it is likely that your pain can be kept in its proper place, as a servant and not the master of you.*



- **FEEL:** *Emotions, like guilt, fear, anger and helplessness can both make it harder to manage pain.*



- **THINK:** *You can change the way you think about pain so that you don't have to feel so guilty, fearful, angry, and helpless!*



- **DO:** *Talking about your pain-related fears with others can help.*

WORKSHOP #5 SUM-UP POINTS:

Today we learned several ways to manage your chronic pain:



- **KNOW:** *It is important to rest your body, but there is such a thing about TOO much rest. Chronic pain, decreased activity, deconditioning, fatigue, depression, stress, and muscle tension are all part of the same cycle.*



- **FEEL:** *It can be helpful to develop an attitude of gratitude about your pain.*



- **THINK:** *Listen to the “message” that your body is sending you. Imagine yourself a **survivor** of pain.*



- **DO:** *Talk to your doctor about proper rest and nutrition. Ask if you need to change your resting or eating habits.*

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WORKSHOP #6 SUM-UP POINTS:

Today we learned several ways to manage your chronic pain:



- **KNOW:** *Stress- hardiness is associated with a decreased incidence of illness. The characteristics of stress hardiness are capability, challenge, commitment and closeness.*



- **FEEL:** *The type of mood you’re in may affect your thoughts*



- **THINK:** *Remember the acronym HARDY as a way to change your thinking and attitude in a positive, “stress-hardy” way*



- **DO:** *Keep up your breathing exercises at home as a way to relax*

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