Self-management of chronic pain by patients with arthritis

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SELF-MANAGEMENT OF CHRONIC PAIN BY PATIENTS WITH ARTHRITIS

by

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ABSTRACT

Self-Management of Chronic Pain by patients with Arthritis

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The insistent presence of pain for the millions of persons with rheumatoid arthritis and osteoarthritis can drastically reduce an individual’s quality of life. Self-management approaches for arthritis pain relief are being emphasized and individuals need a medley of pain management methods to select from to help manage arthritis pain.

The Pain Management Inventory (PMI) was used in a descriptive design with a convenience sample (n = 91) to identify pain management methods individuals with arthritis use and find helpful. Exercising was the method used by the largest number of respondents and was also perceived as most helpful. The methods used by the second and third largest number of individuals were resting and pacing activities. In contrast, the second and third perceived most helpful methods were using a heated tub, pool or shower and taking medicine ordered by a physician.

The demographic factors age, disability due to arthritis and how long the individual had experienced arthritis pain correlated with the use of at least one of the 22 methods indexed on the PMI.
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CHAPTER I

INTRODUCTION

Background and Significance

Arthritis is one of the predominant chronic diseases in the United States (Arthritis Foundation, 1999). Even though the etiology and symptomatology of the more than 100 types of arthritis are varied, a common attribute, and often insistent symptom of arthritis is pain. This pain is a source of much discomfort and disability for the approximately 43 million Americans who suffer from arthritis and related conditions (Arthritis Foundation, 1998; Dunkin, Briley, Davis, & Norris, 1998; Grelsamer & Loebl, 1996; Hampson, Glasgow, & Zeiss, 1996; Keefe et al., 1987). Most people with arthritis care for themselves at home and manage their pain at home, consulting a physician only when they have symptoms that cannot be tolerated or controlled. Hospitalization is seldom needed for arthritis patients unless an individual experiences an acute disease exacerbation or requires surgery to help control pain or increase mobility (Fries, 1995; Brunk & Sands, 1988).

Because of the numerous types of arthritis, their complexities, and their varying symptoms, specific treatment must be individualized for each patient (Davis & Atwood, 1996; Fries, 1995; Brunk & Sands, 1988). Fries (1995) indicated that this specialized approach requires that the person with arthritis become an “arthritis self-manager” (p. 2). Self-management approaches to chronic pain (such as arthritis pain) that use cognitive-behavioral strategies are being emphasized today (Clark, et al., 1991; Hawley, 1995;
Research indicates that many patients who practice self-management techniques become proficient at dealing with and minimizing the effects of chronic pain upon their lives (Phillips & Rachman, 1996; Goeppinger, Macnee, Anderson, Boutaugh, & Stewart, 1995; Keefe et al., 1987).

Since the pain related to arthritis can be complex, differing in intensity each day, and varying from continuous to intermittent, individuals who suffer chronic pain in conjunction with arthritis usually require a variety of methods to help them manage their pain (Davis & Atwood, 1996; Brunk & Sands, 1988). The method the individual chooses may change for each pain event and may be based upon several factors, for example pain location, pain intensity, or the availability of a specific pain management method.

Problem

Little study has been done on the measurement of precisely what self-management methods and tactics individuals with arthritis find beneficial in managing their pain (e.g., use of medications, use of hot or cold packs, use of heated pools, use of relaxation techniques). One research project (Davis & Atwood, 1996) that did investigate the measurement of the methods of pain management used by people with arthritis centered around the development of the Pain Management Inventory (PMI). The PMI is a specific clinical index of pain self-management methods used by individuals with arthritis. The PMI is designed to identify the exact methods patients are currently using to relieve arthritis pain and to determine the perceived helpfulness of each pain management method used. The information obtained from the PMI, along with other clinical signs, can be used by health care professionals to help plan and evaluate self-management strategies that patients with the chronic pain of arthritis might use (Davis & Atwood, 1996).
Purpose

The purpose of this study was to identify the pain self-management methods that individuals with rheumatoid arthritis (RA) and osteoarthritis (OA) are using, and to determine how helpful the persons perceive these methods to be, as measured by the PMI (Davis & Atwood, 1996).
CHAPTER II

REVIEW OF RELEVANT LITERATURE

Introduction

The literature review focuses on a discussion of the concept of pain, nociception and pain perception, and pain theories. There are also discussions of pain management, the pain management process, and cognitive-behavioral therapy. In addition, a discussion of arthritis, relevant arthritis research, and research regarding the self-management of chronic disease and chronic pain is included as background to the study.

Relevant Theoretical Literature

Arthritis

Arthritis in its literal sense means inflamed joint. In our current every day terminology, however, almost any painful condition of the musculoskeletal system is called arthritis, not just those conditions that affect joints (Fries, 1995; Grelsamer & Loebl, 1996; Hill, 1998). Arthritis is a widespread disease affecting men, women and children of all ages, but almost two-thirds of the 43 million people with arthritis in the United States are women (Arthritis Foundation, 1998). Arthritis can occur in many forms including: (a) an inflamed muscle, as in polymyositis; (b) an inflamed joint lining, as in rheumatoid arthritis (RA); (c) the damaged cartilage of joints, as in osteoarthritis (OA); and (d) a connective tissue disease, as systemic lupus erythematosus (SLE) (Arthritis Foundation, 1998; Fries, 1995; Hill, 1998). The various forms of arthritis can not only
damage and destroy the joints and internal organs of it's victims, but they also can adversely affect physical independence and financial stability (Arthritis Foundation, 1998; Fries, 1995; Hill, 1998).

Fries (1995) indicated that at least 127 kinds of arthritis have been identified. Others (Hill, 1998) reported there are at least 200 arthritides. The types of arthritis can be categorized in several ways. Fries grouped them into eight major categories. These categories are: (a) attachment arthritis, (b) cartilage degeneration, (c) crystal arthritis, (d) general conditions, (e) joint infection, (f) local conditions, (g) muscle inflammation, and (h) synovitis. Another arthritis categorization also has eight groups. The eight are: (a) inflammatory joint diseases, (b) spondyloarthropathies, (c) crystal deposition diseases, (d) joint failure, (e) metabolic bone disease (f) connective tissue disease, (g) non articular conditions and (h) soft tissue rheumatism (Hill, 1998). In the United States, two of the three most prevalent types of arthritis are OA and RA (Arthritis Foundation, 1998), and these two are the focus for this study.

Osteoarthritis is typical of the cartilage degeneration and the joint failure categories and is the most frequently occurring form of arthritis (Arthritis Foundation, 1998; Grelsamer & Loebl, 1996; Lozada & Altman, 1997). The pain mechanism in OA is often unclear and is thought to be the result of numerous causes such as bursitis, tendonitis, ligament damage, stretching of the joint capsule, muscle spasm, and periosteal irritation (Lane, 1997; Lozada & Altman, 1997).

Rheumatoid arthritis is the classic inflammatory arthritis, is in the synovitis and inflammatory joint categories, and is the third most frequently occurring type of arthritis (Arthritis Foundation, 1998; Fuchs & Sergent, 1997). The mechanism of pain in RA is synovitis, an inflammation of the synovial membrane that lines a joint. The cells of inflamed synovial membranes release enzymes into joint spaces, resulting in pain (Fries, 1995; Newman, Fitzpatrick, Revenson, Skevington, & Williams, 1996). Table 1 presents a comparison of OA and RA adapted from a similar comparison by Brunk and...
Pain

Pain is a complex, fluid, and strikingly personal experience and is usually considered an unpleasant or uncomfortable sensation (Cleland & Gebhart, 1997; Donovan & Watt-Watson, 1992; Hill, 1998). Half the people who seek medical help do so because of the primary complaint of pain (Thomas, 1993; Turk & Rudy, 1992). Pain serves as a protective device warning a person of possible injury to his/her body.

There are multiple definitions of pain. The International Association for the Study of Pain (IASP) defines pain as “an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage” (as cited in Bowsher, 1993, p. 5). Taber’s Medical Cyclopedic Dictionary (1993, p. 1405) indicates that pain “includes not only the perception of an uncomfortable stimulus but the response to that perception”. McCaffery, a nursing expert on pain, states that “pain is whatever the experiencing person says it is, existing whenever he says it does” (1979, p.11). Cleland & Gebhart, (1997, p.1) explain that pain “is a unique and complex experience that is influenced by a person’s culture, by his or her anticipation and previous experience, by a variety of emotional and cognitive contributions. and by the context in which the pain occurs”.

The intricate sensation of pain that an individual experiences is influenced by a variety of factors including his/her culture, emotional and cognitive make-up, previous experience with pain, and interpretation of pain (Cleland & Gebhart, 1997; Jeans & Melzack, 1992; Turk & Melzack, 1992). The reaction of individuals to pain not only varies from person to person but also varies within the same person at different times (Cleland & Gebhart, 1997). This variation may be due to such factors as the anticipation of pain by an individual or by the distraction of an individual’s attention from the pain. For instance, if an individual considered a previous procedure or activity extremely
painful, then anxiety and anticipation of pain may affect the person’s reaction during a repeat of the procedure or activity. Another example is when an athlete does not feel pain when he or she is injured during the excitement and exhilaration of a game but does notice pain immediately when the same injury occurs during practice.

Pain can be classified several different ways. Pain can be categorized by: (a) it’s duration (acute, prolonged, or chronic), (b) it’s source (somatic or visceral), or (c) it’s origin (chronic malignant or chronic nonmalignant) (Cleland & Gebhart, 1997; Salerno & Willens, 1996; Wright, 1992). In terms of duration, acute pain lasts only a short time. Acute pain is considered protective since it can warn of potential or actual harm and may lead to a withdrawal reflex, for example, withdraw a hand from a hot surface. Prolonged pain occurs over days to weeks and is the most common type of pain (Cleland & Gebhart, 1997). It is associated with inflammation and tissue damage, and is normally seen after surgery or with sprains. Chronic pain is commonly defined as pain that lasts longer than six months (Meinhart & McCaffery, 1983; Salerno & Willens, 1996), although some clinicians and researchers now define chronic pain as pain that lasts longer than three months (Hill, 1998; Salerno & Willens, 1996). For instance, Bowsher (1993) defines chronic pain as intermittent or constant pain that has continued for three months or longer.

When the source of pain is considered, somatic pain is divided into two types, superficial (initiating from the skin) and deep (emanating from muscle or connective tissue). In contrast, visceral pain begins in the internal organs of the body (Cleland & Gebhart, 1997). Pain may also be classified according to its origin, such as chronic malignant pain (due to carcinoma) or chronic non-malignant pain (sometimes called chronic benign pain). The latter is due to causes that are not life threatening (Gregg & Tuttle, 1997; Hill, 1998; Salerno & Willens, 1996).

Chronic pain is most often associated with OA and RA because of its persistence and longevity although individuals with OA and RA do have acute episodes of arthritis.
pain. Meinhart & McCaffery (1983) group chronic pain into three categories. These categories are: (a) limited pain, (b) intermittent pain, and (c) persistent pain. Limited pain has a known pathology and is time limited even though it may continue for months or years, as with cancer or with slow healing burn injuries. With intermittent pain the individual has some pain free periods as with intermittent migraine headaches. Persistent pain, also called chronic non-malignant pain or chronic benign pain, is due to pathology that is not life threatening, that may continue for the rest of the individual’s life and that may not respond well to methods of pain relief presently available. Even though arthritis pain can sometimes be acute (as with bursitis or septic arthritis) the pain of OA and RA is generally considered chronic persistent pain because it usually lasts longer than six months, is normally not life threatening, does not always respond well to pain relief methods, and is likely to affect a person for the rest of his or her life (Hill, 1998).

**Nociception and Pain Perception**

Pain is generated in the body by potentially harmful stimuli (called noxious stimuli), such as burns, cuts, or blood vessel occlusion, that injure or threaten to injure bodily tissues (Bowsher, 1993; Cleland & Gebhart, 1997). Nociception is an arousal process in which noxious stimuli excite a certain type of sensory receptors (called nociceptors) and their associated neuronal axons (Cleland & Gebhart, 1997; Donovan & Watt-Watson, 1992; Hill, 1998). Pain perception is an individual’s discernment that he or she is experiencing an unpleasant episode (pain) with potential or existent tissue injury (Cleland & Gebhart, 1997; Jeans & Melzack, 1992; Turk & Rudy, 1992).

The process of nociception activates a string of events in the body that leads to a pain experience and pain perception. Nociception begins when nociceptors in the muscles, skin, ligaments, joints, and organs of the body are aroused by noxious stimuli. For example, in OA, degeneration and breakdown of cartilage in a joint often leads to bone destruction (a noxious stimuli) that can stimulate nociceptors in the joint and result
In pain (Hill, 1998; Wright, 1992). In RA the inflammatory process in a joint usually leads to edema and tissue engorgement that can stimulate nociceptors located in the joint capsule or surrounding tissues and result in pain (Hill, 1998; Wright, 1992). Nociceptors and associated neuronal axons carry nociceptive information to the spinal cord, thus activating autonomic reflexes (e.g., increased heart rate or respiration) and nociceptive reflexes (e.g., withdrawal of a hand from a hot item). Concurrently the nociceptive information is carried supraspinally to the brain (Cleland & Gebhart, 1997; Wasylak, 1992).

The four functional stages of nociception are: (a) transduction, (b) central processing and abstraction, (c) modulation, and (d) development and plasticity. During the transduction stage stimulus energy is changed into neural activity. In the central processing and abstraction phase the central nervous system (CNS) processes nociceptive neural signals to find relevant information. During the modulation stage, nociceptive activity adapts to changes in the environment as well as to the needs of the individual. In the development and plasticity stage long term changes occur in the neural mechanisms that mediate nociception in response to development, experience, and injury (Cleland & Gebhart, 1997).

Pain perception occurs in the thalamus and cortex of the brain after information from noxious stimuli and nociception has been integrated and interpreted through an individual’s peripheral nervous system (PNS) and CNS (Cleland & Gebhart, 1997; Donovan & Watt-Watson, 1992; Hill, 1998). For an individual to perceive and define a bodily event as painful, it is necessary for both a supraspinal evaluation and analysis of information about the event to occur in certain areas of the brain. An individual’s supraspinal integration and interpretation of bodily information are what make pain a uniquely subjective experience for everyone (Cleland & Gebhart, 1997). An individual’s perception of pain is influenced by a number of different cognitive and psychological variables including: (a) previous pain experiences, (b) his or her attention, anxiety, and
distraction, (c) beliefs of control over pain, and (d) cultural effects, beliefs, and convictions (Jeans & Melzack, 1992; Turk & Rudy, 1992).

Cleland & Gebhart (1997) emphasized that nociception and pain are not synonymous. Nociception concerns the neural events and reflex responses that occur as the result of noxious stimuli. Pain is a subjective phenomenon that refers to a person’s interpretation and perception of an unpleasant sensory and emotional episode connected with potential or existent tissue injury (Cleland & Gebhart, 1997; Jeans & Melzack, 1992; Turk & Rudy, 1992).

Pain Theories

Historically there has been speculation and study by philosophers, religious leaders, the medical community, and lay persons about the concept of pain (Donovan & Watt-Watson, 1992; Turk, Meichenbaum, & Genest, 1983). In the 4th century Aristotle believed pain was an emotion. In the Middle Ages pain was thought to be the will of God, or a punishment for sins, or even demonic possession (Donovan & Watt-Watson, 1992; Turk, Meichenbaum, & Genest, 1983). The function of the nervous system in pain transmission was discovered in the 19th century (Donovan & Watt-Watson, 1992; Skevington, 1995) and led to present day beliefs and theories about pain.

Several pain theories are found in pain-related literature. The older traditional theories of pain are called specificity theories and are still taught today (Jeans & Melzack, 1992; Melzack, 1973; Skevington, 1995). These theories postulate that a specific transmission system carries pain stimuli or messages from specific types of receptors (e.g., touch, pressure, heat, or cold) in the skin to a pain center in the brain, and that the pain intensity is related to the amount of tissue damage to the skin. Limitations to the specificity theories are that they do not account for the different qualities of sensation, and they leave certain phenomena unexplained, for example, the fact that some persons experience pain without obvious injury, and others experience injury without pain.

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(Melzack, 1973; Skevington, 1995). These discrepancies led to further research and to the development of other theories of pain.

The more recent theories of pain (called pattern theories) do not support the idea of a single, specific pain stimuli transmission system for all types of pain stimuli. These latter pattern theories propound that unique patterns of nerve impulses result from too much stimulation of skin receptors, and that these nerve impulse patterns combine in the dorsal horn of the spinal cord and cause pain (Donovan & Watt-Watson, 1992; Salerno & Willens, 1996; Skevington, 1995; Turk, et al., 1983). Today one of the most widely accepted pain theories is a type of pattern theory called the Gate Control Theory (GCT). The GCT, first purposed by Melzack and Wall in 1965 and later revised and refined, has prompted a great amount of research about pain (Donovan & Watt-Watson, 1992; Melzack, 1973; Skevington, 1995). The GCT theorizes that pain is more than a sensory event, but is also a perceptual one, and that the interaction of sensory, cognitive, and motivational processes constitutes pain (Melzack, 1973; Skevington, 1995; Turk, 1997). The GCT is so named because it posits that the substantia gelatinosa (SG) in the dorsal horn of the spinal cord has a gating mechanism that can impede or facilitate the transmission of nerve impulses from afferent fibers, to spinal cord transmission cells (T cells), and on to supraspinal areas (Donovan & Watt-Watson, 1992; Skevington, 1995; and Turk, 1997).

The afferent, large-diameter, myelinated fibers that nerve impulses travel through are called A beta fibers. The afferent, small diameter, unmyelinated fibers that nerve impulses are transmitted through are called A delta and C fibers. The GCT postulates that the spinal gating mechanism is affected by the relative amount of activity in both the large and small diameter fibers (Donovan & Watt-Watson, 1992; Skevington, 1995; Turk, 1997). Activity in the large-diameter fibers is believed to reduce impulse transmission and close the gate, while small-diameter fiber activity is purported to increase impulse transmission and open the gate. The counterbalance of the activity in the
large-diameter fibers and in the small-diameter fibers influences the amount of nociceptive input that goes to the brain. Additionally, nerve impulses that descend from the brain also affect the spinal cord gating mechanism (Donovan & Watt-Watson, 1992; Skevington, 1995; Turk, 1997).

Pain processes do not begin only when receptors are excited, but they are actually dynamic and ongoing within an active nervous system. The interaction of sensory, cognitive, and motivational processes within an active nervous system determine the sequence of behavior that constitutes pain (Cleland & Gebhart, 1992; Donovan & Watt-Watson, 1992; Melzack, 1973; Skevington, 1995).

The GCT was the first pain theory to recognize that psychological factors are important in pain modulation and control (Holzman, Turk, & Kerns, 1986; Skevington, 1995). The GCT acknowledges that chronic pain is a complex event that has a psychological component as well as a physical one, and is influenced by cognitive-behavioral changes and alterations in mood, motivation, and cognitions (Donovan & Watt-Watson, 1992; Holzman et al., 1986; Skevington, 1995).

Critics of the GCT believe it is too general and does not offer specifics about the interactions it puts forth (Donovan & Watt-Watson, 1992). However, Skevington (1995) called the GCT “the most important working model for pain researchers in the 1990s” (p.23). The GCT is congruous theoretically with chronic pain such as the chronic pain of arthritis. Hill (1998) declared that the GCT supports many pain relief methods that nurses use in practice, even though it is a theory that has not been proven. The GCT is a rational and clinically helpful base from which to understand certain non-pharmacological pain relief techniques used for arthritis, for example, cutaneous stimulation techniques as ice or heat application, topical ointment application, massage, or TENS (transcutaneous electrical nerve stimulation (Hill, 1998; Wright, 1992).

**Self-Management of Chronic Disease**
The traditional medical treatment of a person with arthritis has been pharmacological, sometimes in conjunction with physical therapy or with surgery. Even though these methods were beneficial they sometimes had problems and were not ideal. Frequently these treatment methods did not stop disease progression, did not control symptoms, were expensive, and resulted in unpleasant toxicities (Hawley, 1995). These methods did little to address quality of life and patient autonomy. So even though an individual with arthritis was compliant with the prescribed treatment, he or she seldom understood enough about arthritis to assist with his or her own care, to predict what might happen in the future in terms of his or her arthritis, or to try to influence what might happen to him or her in terms of arthritis. Out of concern for the improvement of care and treatment for people with arthritis, another intervention—education—has become part of the recommended treatment approach (Fries, Carey, & McShane, 1997; Hawley, 1995; Lorig, Laurin & Holman, 1984). The term “psycho-educational intervention” is an umbrella term for the educational interventions that applies to both the traditional educational activities and to the psychological interventions (Hawley, 1995). The most common of these psycho-educational programs are self-management (SM) and cognitive behavioral therapy (CBT).

The SM programs include a wide range of topics such as disease characteristics, medications and possible side-effects, exercise, and dealing with pain and depression. The CBT programs have a more restricted focus and usually emphasize pain control through awareness of the interaction of the emotional and cognitive aspects of pain with the physical and behavioral aspects. Today most arthritis pain management programs, especially those with a cognitive-behavioral base, include the patient who is experiencing the pain in the planning and implementation of a pain management program (Phillips & Rachman, 1996).

Since the 1970s health care professionals have become more aware of the role that individuals with chronic disease should play in the management of his or her disease.
Today increased emphasis is placed on self-management of several chronic diseases including arthritis (Arthritis Foundation, 1998; Fries, 1995; Lorig, 1993). Health care professionals better understand that it is important to include the individual client as an active participant in the goal setting and implementation of a mutually created disease management program.

Self-management is defined by Lorig (1993) as “learning and practicing the skills necessary to carry on an active and emotionally satisfying life in the face of a chronic condition” (p.11). Taal, Rasker, and Wiegman (1996) indicated that self-management means “the individual assumes preventive or therapeutic health care activities, often in collaboration with health care professionals” (p. 230). Self-management knowledge and skills are the “work” required by an individual because he or she has a chronic illness. There are three kinds of such work according to Corbin and Strauss (1988). The types of work are: (a) the work one must do to care for the disease, like following a special diet, seeing a doctor, or taking medication; (b) the work one must do to follow a normal life, as doing chores, having a hobby, and keeping social contacts; and (c) the emotional work a person must do to take care of feelings of anger, depression, and frustration, and to deal with a future changed by a disease.

Lorig (1993) stated that self-management of a chronic disease is a lot more than just learning about the illness. She stressed that self-management of a disease requires that an individual: (a) learn new perspectives and skills to apply to problems that arise (e.g., ways to relieve pain); (b) learn to make informed decisions; (c) learn and use new health behaviors; and (d) maintain or achieve emotional stability. Self-management programs are not designed to be prescriptive and do not aim for patient compliance. Instead they are designed to assist persons to make informed choices and then to accomplish the choices (Lorig, 1993). Individuals with a chronic illness who practice self-management become a collaborative partner with their health care providers.
Pain Management

Davis (1992) completed a concept analysis of the term “pain management” and defined the concept and its defining attributes as follows:

- Pain management is success in taking care of or handling the pain by using certain actions and by directing and and controlling one’s own use of these actions.
- Pain relief is easing or alleviating the pain.
- Pain modulation is adjusting to or softening the effects of the pain under a variety of circumstances.
- Self-efficacy is the individual’s capacity to take care of or handle the pain. (Note: “self” was added to emphasize the individual focus). (p. 81).

Davis (1992) pointed out that when placing these definitions into a pain management taxonomy, management is the highest ranked and it embodies the other three: relief, modulation, and self-efficacy. Davis also indicated that such a taxonomy is consistent with the GCT because pain can be blocked anywhere along the transmittal pathways by a variety of methods considered either relief or modulation. This indicates the importance of internal components (as behavior, motivation, and cognitions) along with external factors (as medications and massage) to the process of pain management (Davis, 1992).

Because there is no known cure for OA and RA, both diseases usually necessitate lengthy management and provoke discomfort, extensive disability, and high costs (Lorig, Mazonson, & Holman, 1993). Pain management is a significant part of the entire disease management process for RA and for OA. Until the 1980s the term “pain management” for people with chronic nonmalignant pain (like arthritis pain) had been applied to what a health care professional did to manage an individual’s pain, for example the medically prescribed treatment of a patient with pain (Davis, 1992). This approach was usually a pharmacological one and sometimes included physical therapy or surgery. This view of
pain management did not consider the person with chronic pain as a participant in the pain management program. Instead it saw the person as a recipient only. Such programs had the implicit goal to stop pain or to get it under control (Davis, 1992). If this goal was not achieved, a person frequently expressed signs of a negative affect (as anxiety, depression, or helplessness) and began to complain, avoided physical and social activities, and overused medication. All of this reduced an individual's overall feeling of well-being (Davis, 1992).

Cognitive-Behavioral Therapy

Cognitive-behavioral strategies have been recognized as significant elements in pain-management plans (Hawley, 1995; Kwekkeboom, 1999). The cognitive-behavioral approach to pain management stresses an individual's assessment and understanding of the pain he or she feels, thus resulting in a broader view of the cause and of the management of pain. Instead of looking only at behaviors related to pain, much attention is directed at the cognitions that happen before, during, and after pain experiences (Phillips & Rachman, 1996). Turk and Rudy (1992) indicated that “the cognitive behavioral perspective suggests that behavior and emotions are influenced by interpretations of events, rather than solely by characteristics of the event itself” (p. 103). Therefore, pain resulting from what is interpreted as a life-threatening illness or injury is likely to lead to more distress and behavioral impairment than pain resulting from what is interpreted as a minor illness or injury. In addition, psychological elements of pain become more significant when the pain results in a disability, and is continuing and chronic, rather than acute and limited (Turk & Rudy, 1992). Consequently cognitive-behavioral therapies are germane to the management of the chronic pain of OA and RA because such management becomes a persistent and enduring process for most people with OA and RA.
Pain Management Process

Davis and Atwood (1996) described the pain management process within a cognitive-behavioral framework (see Figure 1). The pain management process is a cyclical one, and generally begins when an individual experiences pain of such intensity that he or she is motivated to stop or reduce the pain. The more intense the pain, the more likely the person will initiate the pain management process. An individual’s medical diagnosis and the etiology of his or her pain may prescribe the suitability of some pain management methods, but pain intensity is the prime factor that influences the start of the pain management process (Davis & Atwood, 1996).

The method selected to reduce pain may be affected by how successful it has been in the past, as well as by other cognitive and psychological variables (Davis & Atwood, 1996; Turk, et al., 1983). As a method is used, it’s perceived helpfulness is influenced by how much it moves the person toward achieving his or her cognitive-behavioral goals and by reduction in the perceived pain intensity (Davis & Atwood, 1996). The more initiative a person takes toward reaching cognitive-behavioral goals, the more responsibility that individual assumes for self-management of pain. When an individual assumes responsibility for the management of his or her pain, they normally develop an inventory of pain relief methods. The method chosen from the inventory for each pain episode depends upon a variety of factors, including the type and severity of pain and the availability of certain pain relief methods when the pain episode occurs (Davis & Atwood, 1996).

Pain intensity stimulates the start of the pain management process, and affects the evaluation of the process, so it is necessary that the sensory, affective, and cognitive aspects of the process be identified. For example, people often feel pain more intensely when they are depressed or when they are exposed to environmental stimuli (such as noises or odors) that they associate with increased pain (Davis & Atwood, 1996). The tenacious nature of chronic pain and the fluctuation of its intensity underscore the
importance of an individual’s involvement in a continuing treatment program. Self-management is a crucial part of such a program and over time a person will usually generate a wide range of pain relief techniques from which to choose (Davis & Atwood, 1996).

Relevant Research

Arthritis

Arthritis related nursing research emerged in the 1970s, but it was not until the mid-1980s that the number of studies escalated (Lambert, 1991). Most of these nursing studies looked at OA and RA, and most of the nursing researchers looked at the psychosocial issues of arthritis such as well-being, quality of life, cost, and perceptions (Lambert, 1991). A small number of nursing studies on arthritis looked at nursing interventions as patient education and exercise, but few addressed the physiological aspects of arthritis, instrumentation issues, or health care provider education (Lambert, 1991).

Quality of life for persons with OA was investigated in two studies by Laborde and Powers in 1980 and 1985. In the 1980 study the investigators compared the quality of life of patients with severe OA to patients undergoing hemodialysis and reported that the patients undergoing hemodialysis perceived their present life as more satisfying than did the patients with OA. The researchers indicated that the findings may have resulted from the chronic pain experienced by the persons with OA and from an increased sense of well being of the hemodialysis patients. Laborde and Powers (1985) did a follow up study to their 1980 study and explored the life satisfaction (past, present, and future) of individuals with OA. The investigators reported that participants gave a rating of good to their overall satisfaction with life and recent health status, and that the present life satisfaction was related to a perception by the participants of better health and less OA pain.
Burkhardt (1985) used a cognitive framework for a study that investigated how pain and functional impairments affected the quality of life for individuals with arthritis and found that certain psychological factors, such as positive self-esteem and perceived support, directly supported a higher quality of life. In addition, Burkhardt found that the severity of impairment due to arthritis indirectly affected the quality of life of the participants through the mediation of self-esteem and internal control over health.

Spitz (1984) investigated the personal, social, and medical costs of individuals with RA in terms of several factors including financial costs, lost work days, and the most significant consequence of the disease. Spitz found that: (a) the greatest costs were for medications and doctor's fees, (b) workplace autonomy and income before disease onset were the greatest factors affecting lost work days, and (c) pain was the most important consequence of the disease.

In the 1980s more of the arthritis research by nurses and others began to look at the effects of arthritis patient education such as increased knowledge and increased arthritis self-care behaviors (Goeppinger & Lorig, 1997; Lambert, 1991). Further arthritis nursing research during the late 1980s and early 1990s looked at the outcomes and results of arthritis patient education, especially a trio of outcomes that came to be known as the “gold standard” of arthritis outcomes research: (a) pain, (b) function/disability, and (c) depression (Goeppinger & Lorig, 1997).

A study by Goeppinger, Macnee, Anderson, Boutaugh, and Stewart (1995) described a 12 month follow up of 259 individuals with arthritis (76% had OA) who participated in an arthritis education program. The individuals were randomly assigned to one of three groups (two intervention groups and a control group). The three groups were: (a) small group, (b) home-study group, and (c) delayed-treatment control group. At four months the intervention groups demonstrated significant improvement in pain, knowledge, behavior, and helplessness, and the improvements were maintained at eight and 12 months. The small group and the home-study group participants had no significant
difference in outcomes.

In 1989 another study by Goeppinger and the same research team followed 374 participants for 12 months after an arthritis education program intervention (as cited in Goeppinger & Lorig, 1997). Again pain improved at four months and maintained improvement over time. There were decreases in perceived helplessness at four and eight months but function/disability did not change in either of the two Goeppinger studies.

In a longitudinal follow up study by Lorig, Mazonson, & Holman (1993), a group of participants in an arthritis self-management program were randomized to treatment and delayed treatment control groups. Four years after participating in the arthritis self-management program, the pain of the study participants decreased 18%, visits to a physician decreased 34%, perceived self-efficacy for managing pain increased by 22%, and physical disability increased by 9%.

In a concept analysis of pain management (Davis, 1992) identified three defining attributes. These were: (a) pain relief (easing or alleviating pain), (b) pain modulation (adjusting to or reducing the effects of pain), and (c) self-efficacy (a person’s ability to take care of or handle pain). These are especially important to consider for patients with arthritis because of the chronic nature of arthritis pain.

Self-management of Chronic Pain

Much of the research about self-management of chronic pain focuses on coping with pain (Keefe & Dolan, 1986; Keefe et al., 1987; Jensen, Turner, Roman, & Karoly, 1991; Hampson, Glasgow, & Zeiss, 1996). Although coping (the use of deliberate strategies to manage stress) is related to pain management, especially when pain is viewed as a stressor, the instruments used to measure coping do not measure the actual pain management methods used by people with pain. This fact prompted Davis & Atwood (1996) to develop and test the Pain Management Inventory (PMI), an instrument that measures pain management outcomes and explores what methods people actually use.
to handle pain (see Appendix B). The PMI is an index of 22 independent pain self-management methods that have been used by individuals with chronic arthritis pain. It was designed as a short, accurate, specific clinical tool that would identify the pain management methods patients with arthritis presently use and perceive to be beneficial (Davis & Atwood, 1996). The PMI is a self-administered tool, and respondents are asked to circle a number (1 = never use, to 6 = often use) to indicate each pain management method they use. If they use the method, the respondents are asked to also indicate if the method was helpful by circling a number (1 = not helpful, to 6 = very helpful) that reflects how helpful he or she found the method to be for pain relief. Details of studies using this instrument (PMI) are presented in chapter 4.

Summary

The knowledge base of the concept of pain management has expanded in recent years, especially in relation to cognitive-behavioral processes. There are gaps, however, in areas that evaluate specific methods of self-management of chronic pain. This study should provide additional information about the self-management of chronic pain to help fill these gaps.
CHAPTER III

FRAME OF REFERENCE FOR PAIN MANAGEMENT

Introduction

This chapter presents a conceptual framework pertinent to this study and to the research questions to be answered. It also defines the major variables, concepts, and other relevant terms and identifies the essential assumptions of this study.

Framework

Davis & Atwood's (1996) conceptual model of a pain management process as shown in Figure 1 provides the theoretical framework for this study. The model presents pain management as a self-managed, cyclical process related to the achievement of cognitive-behavioral goals. Although a specific medical diagnosis or pain etiology influences the use and suitability of some pain management strategies by an individual, the major factor that influences an individual's choice of a pain management technique is his or her current perception of pain intensity (Davis & Atwood, 1996).

When an individual experiences pain so uncomfortable that it requires action to reduce or relieve it, the pain management process begins (Davis & Atwood, 1996). The method of pain management chosen is usually influenced by how successful or helpful it has been in the past (Davis & Atwood, 1996; Phillips & Rachman, 1996; Turk et al., 1983). The selected method's helpfulness in controlling pain is determined by how much it helps the person progress toward cognitive-behavioral goals and the perceived
reduction of the intensity of pain. The cognitive assessment of the method's helpfulness reinforces the likelihood for selecting it in the future (Davis & Atwood, 1996).

As individuals gradually master the use of specific pain management techniques and realize how their associated thoughts and actions can decrease pain intensity, the perception of a method's helpfulness will likely increase (Davis & Atwood, 1996). People with chronic arthritis pain can thus use the mind-body connection to make methods work effectively. Working to achieve cognitive-behavioral goals can allow an individual to become responsible for and to gain expertise in pain self-management (Phillips & Rachman, 1996).

Pain intensity affects both the beginning phase and the evaluation phase of the pain management process, so health care professionals need to be aware of the sensory, cognitive, and affective aspects of the perception of pain intensity in order to help patients better intervene with their own pain (Davis & Atwood, 1996). For example, persons who are depressed usually perceive pain as more intense than when they are not depressed. Also, some environmental stimuli, such as certain noises or odors, can be associated with more intense pain, and perceived pain intensity may increase when these stimuli are present (Davis & Atwood, 1996). If an individual is aware of these aspects of pain intensity perception, and is aware of how it impacts his or her pain, the person may be better able to control chronic arthritis pain.

A method to facilitate this awareness is a pain management strategy or pain management technique that is used to relieve or reduce pain. The success or effectiveness of a method in relieving pain describes the helpfulness of the method. Methods can be cognitive in nature, such as the use of guided imagery or meditation, or they may be behavioral, such as massaging or applying heat to the painful areas of the body. The Davis and Atwood (1996) conceptual model of pain management in Figure 1 explains one type of pain management process that can be put into action.
Research Questions

This study addressed five research questions. The questions are: (1) Do individuals with arthritis pain use pain self-management methods to relieve the pain? (2) What pain self-management methods are currently used by persons with chronic arthritis pain? (3) How helpful do individuals with chronic arthritis perceive the pain self-management methods to be? (4) Is there a difference in the pain management methods and perceived helpfulness of the methods utilized by individuals with osteoarthritis (OA) and individuals with rheumatoid arthritis (RA)? (5) What demographic characteristics are related to the pain management methods that an individual uses?

Major Concepts and Definitions

Pain management - Taking care of and handling specific pain successfully by the use of self-direction and self-control of one’s actions. Pain management was operationally defined as the reported use and helpfulness of methods in the two sections of Davis’s (1996) Pain Management Inventory (PMI).

Self-management of pain - An individual’s ability and willingness to be responsible for selecting and using pain self-management strategies and techniques to relieve his or her chronic pain, as answered on the “How Often Do You Use The Method” section of Davis’s (1996) PMI. If at least one strategy was marked it was assumed that the person practiced pain self-management.

Pain management method - The strategies or techniques used by individuals with arthritis to help self-manage their chronic pain, as indicated by the methods reported on the “How Often Do You Use The Method” section of Davis and Atwood’s (1996) PMI.

Helpfulness - The extent to which a pain self-management method was successful in modulating or relieving arthritis pain, as reported in the “How Helpful Is the Method” section of Davis and Atwood’s (1996) PMI.

Present Pain Intensity - How painful an individual perceived his or her pain to be
at the time they marked the PMI and as indicated by the Present Pain Intensity (PPI) section of the McGill Pain Questionnaire (MPQ).

Chronic pain - Pain that occurred continuously or at intervals for three months or longer. Operationally, chronic pain was defined as non-malignant (benign) pain that had lasted for at least three months, that occurred in conjunction with OA or RA diagnosed by an individual’s health care provider and self-reported by the individual, and that was indicated by the answer to the question “Approximately how long have you been experiencing arthritis pain?” on the demographic data questionnaire.

Arthritis - A term applied to more than 100 conditions or diseases, each with unique features, but with a common factor of musculo-skeletal or joint involvement, or both. Two of the most prevalent diseases in the group are RA and OA, and arthritis was operationally defined as OA or RA. Participants were limited to persons who were diagnosed with OA or with RA, were 18 years or older, and were not presently experiencing pain related to another reason or cause.

Assumptions

1. Most individuals with arthritis experience chronic pain and take action to control the pain.
2. Individuals used self-management methods to control their chronic arthritis pain and responded accurately to questions regarding the type of method used and it’s perceived helpfulness.
3. Participants answered questions factually.

Summary

This chapter described a conceptual framework for this study and presented the research questions, defined major concepts and other terms, and identified essential assumptions.
CHAPTER IV

METHODS AND PROCEDURES

Introduction

The purpose of this study was to identify the pain management methods individuals with osteoarthritis (OA) and rheumatoid arthritis (RA) are currently using to relieve chronic arthritis pain, and to determine how helpful the individuals perceive these methods to be. The research design of this study, the population and sample, the setting, measurement methods, procedure, and ethical considerations are described below. Also included is an explanation of the data analysis, and the methodological limitations.

Research Design

A descriptive research design was used to identify the methods and procedures presently being used by patients with arthritis (OA or RA) to handle chronic pain, and to ascertain how effective the individuals perceived the methods to be in relieving his or her arthritis pain.

Population and Sample

The target population for this study included individuals in a large southwestern city who possessed the following properties:

1. over the age of 18 years.
2. diagnosis of either OA or RA, or both.
3. alert without mental confusion.
4. able to understand English
5. experiencing continuous or intermittent arthritis pain for three months or longer.
6. not presently experiencing an episode of pain from any surgical procedure, condition, or illness other than OA or RA.

This study investigated participants with OA or RA because OA and RA have been identified as representative models (degenerative and inflammatory types) of arthritis, as well as being two of the predominant types of arthritis in the United States (Arthritis Foundation, 1998; Davis & Atwood, 1996; Greelsamer & Loebl, 1996).

A convenience sample of participants who met all of the above criteria was drawn from the accessible adult population in: (a) 11 Arthritis Foundation (AF) sponsored aquatic exercise classes, (b) three AF sponsored land-based exercise classes, (c) the medical office of a Rheumatologist, and (d) the medical office of an Endocrinologist in a large health maintenance organization (HMO), all in a metropolitan area in the southwestern United States. The population served by the AF sponsored exercise classes, the Endocrinologist, and the Rheumatologist was diverse and included both males and females. This mix of AF classes and physicians’ offices was used in order to obtain participants who were of varying age and gender, of different ethnic backgrounds, who had different arthritis pain location sites, and who had either OA or RA.

Setting

Physical facilities for the data collection in the AF sponsored land-based and aquatic classes were in each exercise room and at each pool side. Facilities in the offices of the Endocrinologist and Rheumatologist were the office waiting areas. After a verbal explanation of the study and an invitation to participate was presented by the researcher, individuals with a diagnosis of OA or RA were self-identified.
Tools

The tools used in this study were: (a) the Pain Management Inventory (PMI), a 22 item questionnaire (see Appendix B); (b) the Present Pain Intensity (PPI) rating index, a six item index and a Visual Analogue Scale (VAS) that is part of the short-form McGill Pain Questionnaire (MPQ) (see Appendix C); (c) pain self-management questions (see Appendix D); (d) a demographic data form (see Appendix E); and (e) body picture forms for participants to mark the areas of the body where they experienced pain (see Appendix F).

Pain Management Inventory (PMI)

Davis (1989) developed and tested the Chronic Pain Experience Inventory (CPEI) that focused on an individual’s response to living with pain, rather than on the actual pain or the psychological factors that influence or are influenced by a person’s response to pain. A few of the items used on the CPEI were deleted from that instrument because they appeared to represent yet another concept—what an individual does to manage or relieve pain—rather than a person’s response to pain. For example, using distracting techniques or taking pain relief medicine are ways of managing pain, while feeling frustrated and angry over not being able to perform certain activities or to carry out specific responsibilities because of pain are examples of an individual’s response to pain. These deleted items provided the core for another instrument, the PMI, designed to index arthritis pain management methods that individuals use (Davis & Atwood, 1996).

Additional items were created and developed by Davis and Atwood for the PMI and were added to the core items after talking with and observing patients, and reviewing certain pain management literature (Davis & Atwood, 1996).

Davis (1994) explained that nursing should be concerned about reliable and valid instruments to be used in the clinical arena. Measurement is an important part of clinical decision making, and nurses need accurate tools to use for nursing assessment in order to...
obtain reliable data. Unlike other instruments that study the management of arthritis pain, the PMI does not look at how individuals cope with arthritis pain. Instead it determines the exact methods a person with arthritis is presently using to manage pain, and how helpful the person perceives the method to be in modulating or relieving the pain. The PMI is an index rather than a scale and measures the level of the concept, not the underlying concept (Davis, 1994; DeVellis, 1991).

The PMI (Davis & Atwood, 1996) is a ordinal-level measurement rating index that is self-administered and is designed to: (a) inventory pain management methods that people with arthritis currently use, (b) assess the total number of methods that are used and how often the methods are used, and (c) determine how helpful the person perceives the methods to be. Permission was obtained to use the PMI in this study (see Appendix G). The PMI asks individuals to indicate how often they presently use a pain management method listed on the PMI by marking (circling) the appropriate number (1 = never use, to 6 = often use). The PMI also asks participants to circle a number in a similar manner to indicate how helpful they perceive the methods they use to be in the relief of arthritis pain (1 = not helpful, to 6 = very helpful).

Content validity

Content validity of the original 17 item PMI was estimated by four members of the International Association for the Study of Pain (IASP) using a rating and quantification procedure (Davis & Atwood, 1996). The four members were health care professionals who specialized in the treatment of patients with rheumatic disease. One item originally on the PMI was rated as not relevant by three out of the four experts and it was deleted. After the removal of the deleted item, the content validity index of the remaining 16 items was 1.00 (Davis & Atwood, 1996). Additional items have been added to the PMI since 1996, and the version used in this study had 22 items.
Construct validity

Construct validity was investigated with a one-tailed Pearson r correlation coefficient, and 10 of the 16 originally indexed methods displayed construct validity. Davis & Atwood (1996) used the phi coefficient measure to check for test-retest reliability of the PMI items. Over a two week period only three pain management methods failed to show stability (p < 0.05). The PMI’s ease of readability grade level was measured using the Fog Index (Fog Formula), and the score, 13.5, indicated that individuals needed 13 years of education to easily read and understand the PMI (Burns & Grove, 1997; Davis & Atwood, 1996). This seemed high for the Davis and Atwood study group because only a little more than half of the group had more than 12 years of formal education. In spite of the 13 years grade level ease of readability, the study group did not seem to have problems reading the items. Davis & Atwood indicated this could have been because the longevity of the chronic arthritis process had made the members in the study group extremely familiar with terminology used in the PMI. The scoring method used with the PMI yields three different results: (a) an inventory of pain management methods used recently by the study participants, (b) the total number of methods used, and (c) the perceived helpfulness to the participants of the methods they used in an attempt to relieve chronic arthritis pain.

Present Pain Intensity (PPI)

The MPQ is a pain measurement instrument that has been used extensively to measure varying types of pain (Melzack, 1975). There are at least five versions of the MPQ (Wilkie, Savedra, Holzemer, Tesler, & Paul, 1990). Each version is a different length, asks about a different number of symptoms, and has a different number of response options for pain pattern and pain intensity. The short-form MPQ version was used in this study because it contains the PPI rating index, and the PPI was utilized in this study to measure current pain intensity. The PPI is a number-word combination that
allows a person to rate his or her current pain intensity on a six-point word-number scale (0 = no pain, to 5 = excruciating pain) (Davis & Atwood, 1996; Melzack, 1975; Turk & Melzack, 1992). Permission was granted (see Appendix G) to use the PPI in this study.

Reliability and Validity

The MPQ indexes have shown strong test-retest reliability (Turk & Melzack, 1992) and construct validity (Wilkie, et al., 1990). A meta-analysis of 51 studies (Wilkie, et al., 1990) that used MPQ indexes and that sampled a mixed chronic pain group (excluding back pain) suggested a normative PPI score of 2.6.

Procedure

Individuals with a diagnosis of OA or RA were self-identified in the office waiting areas of the Endocrinologist and Rheumatologist, in the exercise rooms of the land-based exercise classes, and at pool side in the aquatic exercise classes. Because of strict time limits in the use of the pools and the exercise rooms, study tools in the form of a letter explaining the study (see Appendix H), and a questionnaire booklet consisting of the PMI, the PPI with VAS, pain self-management questions, demographic data form, and body picture forms were left in opaque envelopes in the exercise rooms and at pool side. Individuals were asked to take an envelope home, read and retain the letter, complete the questionnaire, and return it in the envelope to the researcher at the next class period if they agreed to participate in the study. Completion and return of the questionnaire to the researcher constituted informed consent of the individual. Participants who were not at the next class period or who forgot to return the envelope at the next class period were given postage stamps and the researcher's address and asked to mail the envelope to the researcher.

In the office waiting areas of the Rheumatologist and the Endocrinologist a sign was displayed inviting participants with OA or RA to identify themselves to the
researcher who was sitting in the waiting area. After an explanation of the study was
given to the individuals, those who agreed to participate in the study were given a
clipboard, a pencil, and an opaque study envelope containing a letter that described the
study (see Appendix H) and a questionnaire booklet that contained the PMI, the PPI with
VAS, pain self-management questions, demographic data form, and body picture forms.
Participants were asked to read and retain the letter that explained the study, complete the
questionnaire booklet there in the waiting area, and return it to the researcher in the
envelope before leaving the office. Completion of the questionnaire and returning it to the
investigator indicated informed consent of the participants.

Participants were informed in the study’s letter of explanation that names,
addresses, or code numbers were not required or included on the questionnaire. Those
participants who wanted a summary of the study findings were asked to include a name
and mailing address.

Ethical Considerations

The review process for approval of this study was followed in the prescribed
order: (a) investigator’s thesis committee, (b) Department of Nursing University of
Nevada. Las Vegas, Human Rights Review Committee, and (c) University of Nevada
Las Vegas, Human Rights Review Committee (See Appendix G). In addition, approval
was obtained from the participating Rheumatologist and Endocrinologist, and the local
Arthritis Foundation, to allow the researcher to approach their clients and class members
about participation in this study (See Appendix G).

It was determined that completion of the study questionnaire incurred minimal or
no risks to participants because it was a self-administered tool that participants could stop
at any time if they decided they did not want to continue, and participants could skip any
item they did not wish to answer. Names of participants were not included on data
collection forms to provide subject confidentiality. Only the researcher had access to the
raw data. All information was kept confidential and was reported only in aggregate formats. The data will be destroyed one year after the completion of the study.

There was little benefit to participants who agreed to take part in this study. The PMI may have suggested pain management methods to a participant that he or she had not thought of or tried before. Some participants may have found it rewarding to help identify potential strategies and methods of pain relief that others with RA or OA may decide to use. Since there were minimal risks and few benefits to participants, there was too little information to project a risk/benefit ratio relative to this study.

Summary

This chapter described the study's research design, target population, setting, sample acquisition, procedures, and ethical considerations. In addition the tools used for the study were described, and the reliability and validity of the tools were discussed.
CHAPTER V

DATA ANALYSIS

Introduction

This chapter describes the study sample and the data analyses regarding the answers to the five research questions. Descriptive and nonparametric statistics were used to analyze the data.

Frequencies

The sample for this study contained 92 respondents with osteoarthritis (OA) or rheumatoid arthritis (RA), with usable data being obtained from 91 of the 92 respondents. One participant did not complete the questionnaire as she noted she did not have pain with her arthritis. Ages of participants ranged from 39 to 95 years; the mean was 68.85 years and the standard deviation (sd) was 10.44. The sample was primarily female (87.8%, n = 79), and Caucasian (86.7%, n = 78). Seventy-two (94.7%) participants had a high school education or beyond; 17 (22.4%) had a college degree. Sixty (77.9%) participants were retired and 13 (16.9%) were employed. The type of medical insurance that most (54.4%. n = 49) of the participants reported was Medicare. Twenty (22.2%) participants also indicated they had Medicare supplemental insurance. One individual reported having no medical insurance. Twenty-three (33.3%) participants reported a household income of $30,000 to $59,999 for the previous year. Twenty-two (31.9%) reported an income of $15,000 to $29,999, while 16 (23.2%) respondents reported income under $15,000 for the previous year. Table 2 displays the demographic
Fifty participants (55.6%) had OA, 18 (20%) had RA, nine (10%) had both OA & RA, and 13 (14.4%) had an unknown type of arthritis. Nine (10%) participants divulged that they had other arthritides in addition to OA or RA, including fibromyalgia, gout, ankylosing spondylitis, and osteoporosis. The length of time respondents had been experiencing arthritis pain ranged from one year to 72 years with a mean of 14.893 years and a median of 10 years. Twenty-nine individuals (33.3%) reported they were disabled due to arthritis. A large number (90%, n = 81) of respondents noted that the activity most affected and limited by his or her arthritis was mobility (walking, sitting, standing). Bathing (getting into a tub or shower) was limited in 31 (34.4%) individuals, and using the toilet (sitting down, standing up) was difficult for 30 (33.3%) participants. Participants also reported other activities that were limited by their arthritis but were not specified in this study. These activities included driving, typing, playing sports, housecleaning, lifting heavy items, knitting, holding a book to read, opening jar tops, pushing a lawn mower, yard work, keeping up with an 11-year-old son, and restraining a child in a special education class. Table 3 presents sample data in terms of arthritis type and how the arthritis affects the participants.

Table 4 presents the varied locations of participant's arthritis pain. The left knee was a source of arthritis pain in over half (68.1%, n = 62) of the participants, while the right knee was a source of pain for 59 (64.8%) participants. Fifty-three (58.2%) participants reported the spine as a source of pain, and 50 (54.9%) individuals indicated they experienced arthritis pain in their necks. The right ankle was reported as a source of arthritis pain by the lowest number (n = 24, 26.7%) of participants.

Twenty-one participants reported sources of pain other than arthritis at the time they completed the study questionnaire. Some of the reasons were: (a) forms of arthritis other than OA or RA (i.e., fibromyalgia, osteoporosis); (b) other musculo-skeletal problems (i.e., bone spurs, collapsed vertebra, fractured arm, torn rotator cuff); (c) nerve
problems (i.e., neuralgia, sciatica); (d) headaches; (e) surgery; (f) menses; (g) abdominal pain; and (h) stroke. Due to data collection methodology, these other sources of pain were not analyzed.

Pain self-management information in Table 5 provides insight into the thought processes that participants use to manage arthritis pain. Fifty-nine (66.3%) individuals indicated that they made a conscious decision to try to relieve arthritis pain, and over half (59.6%, n = 53) reported that they evaluated new ways to relieve pain. Forty-one (46.1%) participants noted that they sometimes used a specific sequence of events to select an arthritis pain relief method. Thirty-four (37.8%) respondents reported that they chose a different pain management method based upon the characteristics of the pain, i.e. severity, location, and length of time pain had been present, and 36 (40%) indicated they "sometimes" chose a method based upon pain characteristics. The pain characteristic that most respondents (55.7%, n = 49) revealed as influencing their choice of the pain relief method was severity of pain, followed by location of pain (50%, n = 44) and then how long pain had been present (46.6%, n = 41). Fifty-two (57.8%) participants indicated that they felt they had control over their lives, and 32 (35.6%) others reported they sometimes felt they had control over their lives.

In terms of functioning with and managing chronic arthritis pain, 39 (42.9%) participants rated his or her ability to function when experiencing pain as a 3 on a six point scale. Thirty-five (38.9%) respondents rated their ability to manage arthritis pain successfully as a 3, while another 32 (35.6%) rated their ability as a 4. Almost 40 percent (39.6%, n = 36) of the respondents marked 4 (0 = not well at all, to 5 = extremely well) when asked to indicate how well he or she was doing considering all the effects of arthritis pain. Table 6 displays all reported frequencies and percentages related to individuals functioning with and managing arthritis pain.
Answers to Research Questions

Answers to research questions 1, 2, 3, and 5 reflect an analysis of data reported from all 91 study participants. To appropriately answer research question 4, an analysis was made on only those respondents who reported having either OA (n = 50) or RA (n = 18) and does not include those who indicated they had both OA and RA or had an unknown type of arthritis.

Question 1:

Do individuals with arthritis pain use pain self-management methods to relieve the pain?

The 22 item Pain Management Inventory (PMI) data were used to answer this research question. The results clearly indicated that all individuals with chronic OA and RA pain in this study sample used some of the pain self-management techniques listed on the PMI. One individual reported using only one pain management method listed on the PMI. Two respondents reported they used all 22 methods. Ten individuals indicated they used as many as 15 different methods listed on the PMI to relieve arthritis pain. These data support that all the individuals in the study sample do use self-management methods to relieve RA or OA pain.

Question 2:

What pain self-management methods are currently used by persons with chronic arthritis pain?

Table 7 presents the number and percentage of individuals who reported using the pain self-management methods listed on the PMI. Three of the pain management methods were each used by more than 90% of the study respondents. The pain management method used by the largest number (98.9%, n = 88) of participants was exercising. The pain management method used by the lowest number (20.2%, n = 17) of participants was
using TENS. Data on Table 7 indicates that each of the pain self-management methods on the PMI were utilized to varying degrees by members of the study sample. Eight pain management methods were used by more than 80% of the respondents. These eight methods were: (a) exercising (98.9%, n = 88); (b) resting (95.3%, n = 82); (c) pacing activities such as resting between activities (94.3%, n = 82); (d) using a heated tub, pool, or shower (89.8%, n = 79); (e) using positive self-talk (84.1%, n = 69) (f) talking with people who understand (83.7%, n = 72. (g) using distracting techniques such as watching television, reading, or working (82.8%, n = 72); and (h) taking medicine for pain prescribed by a physician (82.4%, n = 70).

Two individuals noted that they also use alternative pain management methods not included on the PMI to help manage arthritis pain. Both participants reported the use of certain foods and dietary supplements to help relieve or prevent arthritis pain. The foods and dietary supplements used were: (a) a fruit juice and vinegar drink, (b) sprouts, (c) sea vegetables, (d) flaxseed oil, (e) salmon oil, and (f) amino acids. One of the two individuals also indicated that he or she used (a) magnet therapy and (b) elastic band and elastic stocking therapy to help manage arthritis pain.

Data indicated that while all of the pain self-management methods on the PMI are used to varying degrees by the respondents, eight of the 22 methods were used by the largest number (more than 80%) of the study participants. Two individuals also reported use of alternative methods not indexed on the PMI.

**Question 3:**

How helpful do individuals with chronic arthritis perceive the pain self-management methods to be?

The six pain self-management methods that were perceived as most helpful for pain relief by study participants had mean scores greater than 4.00 (1 = not helpful, to 6 = very helpful). The six most helpful methods were: (a) exercising (mean = 4.85), (b) using
a heated tub, pool, or shower (mean = 4.57). (c) taking medicine for pain prescribed by a physician (mean = 4.55), (d) pacing activities (mean = 4.48), (e) resting (mean = 4.40), and (f) using positive self-talk (mean = 4.37). The two perceived least helpful methods had the same mean scores: (a) using TENS (mean = 2.12) and (b) using biofeedback (mean = 2.12). Table 8 displays the number of participants who reported the perceived helpfulness of each pain management method and the corresponding mean and standard deviation scores of each method.

Data revealed that each of the pain management methods on the PMI was perceived as helpful to a varying extent by some of the study respondents. Six methods had mean scores higher than 4.00 on the six point scale. Two methods had a mean score of 2.12 indicating that these two methods were of little help in relieving arthritis pain for study participants.

**Question 4:**

Is there a difference in the pain management methods and perceived helpfulness of the methods utilized by individuals with osteoarthritis (OA) and individuals with rheumatoid arthritis (RA)?

This section first discusses the pain self-management methods used by study participants with RA, followed by a discussion of those used by participants with OA. Then the section presents a discussion of the perceived helpfulness of the pain self-management methods that are used, first by participants with RA, and then by those with OA.

**Pain Management Methods**

RA. Three different pain management methods were used by the largest number of participants with RA. The three methods, exercising, talking with people who understand, and massaging painful areas were used by identical numbers (89%, n = 16) of participants with RA.
OA. One of the three methods used by the most participants with RA, exercising, was also used by the largest number (100%, n = 50) of participants with OA. Two methods used by the second and third largest number of participants with OA, pacing activities and resting, had the same number of participants (96%, n = 48) who reported using the methods.

Both RA and OA. The same pain management method, using a heated tub, pool, or shower, was used by the fourth largest number of participants with both types of arthritis that were studied, OA (88%, n = 44) and RA (83%, n = 15). The pain self-management method used by the smallest number of participants with OA (16%, n = 8) and with RA (17%, n = 3) was the same method, using TENS. Table 9 presents a side-by-side comparison of methods used by participants with OA and participants with RA.

Perceived Helpfulness of the Methods

The researcher also investigated differences between individuals with OA and those with RA in regards to the perceived helpfulness of the pain self-management methods that were used.

OA. The six methods that individuals with OA found to be most helpful all had mean scores higher than 4.00 on the PMI scale (1 = not helpful, to 6 = very helpful). The six methods were: (a) exercising (mean = 4.69), (b) taking medicine prescribed by a physician (mean = 4.55), (c) pacing activities (mean = 4.54), (d) using positive self-talk (mean = 4.54), (e) using a heated tub, pool, or shower (mean = 4.43), and (f) resting (mean = 4.32). The least helpful method for participants with OA was using biofeedback (mean = 2.04). Table 10 displays the perceived helpfulness scores of pain management methods used by respondents with OA.

RA. Study participants with RA also disclosed the perceived helpfulness of the pain self-management methods they used. The study respondents with RA reported helpfulness mean scores above 4.00 on the six point scale for eight pain management methods.
methods. The methods were: (a) exercising (mean = 4.67), (b) using a heated tub, pool, or shower (mean = 4.47), (c) pacing activities (mean = 4.38), (d) applying heat to painful areas (mean = 4.36), (e) taking medicine prescribed by a physician (mean = 4.36), (f) resting (mean = 4.33), (g) using positive self-talk (mean = 4.33), and (h) focusing on support of religious beliefs (mean = 4.23). The least helpful method (mean = 1.63) for respondents with RA was using TENS. Table 11 displays the perceived helpfulness scores of pain management methods indicated by individuals with RA.

Comparison of OA and RA. When comparing mean differences of the scores of OA participants with RA participants, Levene's Test for equality of variances was checked. Based upon Levene's Test results, t-test readings are presented in Table 12. There were no significant differences between the mean helpfulness scores of the study's OA respondents and the RA respondents for any of the pain management methods indexed on the PMI.

In summary, study data indicated that there are some differences in the pain management methods used by study respondents with OA and those with RA. While exercising was used by the greatest number of participants with OA, it was one of three methods used by the largest number of respondents with RA. The method, using TENS, was used by the least number of individuals in both the OA and the RA groups.

When considering the perceived helpfulness of the pain management methods, both the OA and RA groups found the same method, exercising, to be the most helpful for arthritis pain relief based upon mean scores. Other methods varied in the degree of helpfulness for both the RA and the OA groups. Six methods had helpfulness mean scores higher than 4.00 in the OA group, while eight methods had mean scores over 4.00 in the RA group. These differences were not statistically significant.

**Question 5:**

What demographic characteristics are related to the pain management
methods that an individual uses?

This question was answered using Spearman's rank order correlation (rho). There were no statistically significant correlations between the type of arthritis (RA or OA) that a participant reported and the pain self-management methods that were used. However, three demographic characteristics (age, disabled due to arthritis, and number of years the individual had experienced arthritis pain) did exhibit statistically significant correlations with at least one of the 22 pain management methods.

Correlations between age and (a) using methods to control stress, and (b) using relaxation methods were (rho = -.316, p = .016 and rho = -.350, p = .007). Correlation between disabled due to arthritis and massaging painful areas was rho = -.268, p = .042. Disabled due to arthritis also had a significant correlation with two other pain management methods: taking medicine prescribed by a physician (rho = -.286, p = .029) and using positive self-talk (rho = -.270, p = .041). The demographic factor, number of years the individual had experienced arthritis pain, correlated positively with the method using a brace or splint (rho = .288, p = .028). Table 13 displays the Spearman rho rank order correlation data between the six pain management methods used and the three demographic factors.

Table 14 presents the correlations between two demographic characteristics, age and number of years the individual had experienced arthritis pain, and the perceived helpfulness of four pain management methods. Age revealed a positive correlation with resting (rho = .484, p = .026) and focusing on the support of religious beliefs (rho = .439, p = .047). The demographic factor, number of years the individual had experienced arthritis pain had a negative correlation with the methods (a) taking medicine not prescribed by a physician (rho = -.570, P = .007) and (b) using methods to control stress (rho = -.559, P = .008).

The researcher also investigated the present pain intensity of the study participants since Davis & Atwood (1996) noted that pain intensity is what prompts an individual
who is experiencing pain to select a method to manage or handle the pain. The Present Pain Intensity (PPI) index of the McGill Pain Questionnaire (MPQ) was used to measure (a) current arthritis pain intensity and (b) arthritis pain intensity most of the time as reported by study participants. This index allowed respondents to indicate his or her current arthritis pain intensity and the intensity of arthritis pain most of the time on a word scale where 0 = no pain, 1 = mild, 2 = discomforting, 3 = distressing, 4 = horrible, and 5 = excruciating pain. In addition to the word scale a Visual Analogue Scale (VAS) was used to measure visually a participant’s current pain intensity as well as his or her pain intensity most of the time. Respondents were asked to indicate the current intensity of his or her pain by marking a place on an 8mm line (labeled “no pain” at the far left of the line, to “worst possible pain” at the far right) that corresponded with his or her current pain intensity. Then participants were asked to mark a place on a second 8mm line (with identical labels) to indicate the intensity of their pain most of the time. Table 15 presents the PPI scores.

Table 15 reveals that 34 (37.8%) participants perceived his or her current pain as discomforting and 31 (34.4%) individuals considered his or her current pain to be mild. The PPI mean score for current pain intensity was mean = 1.74, sd = .98. Current pain intensity mean score for the VAS was mean = 2.67 mm, sd = 1.86 mm. Forty-one (45.5%) participants indicated that the intensity of his or her arthritis pain most of the time was discomforting. Twenty-four individuals (26.7%) considered his or her arthritis pain to be distressing most of the time. The PPI mean score for intensity of arthritis pain most of the time was mean = 2.11, sd = .94, and the VAS mean score for intensity of pain most of the time was mean = 3.12 mm, sd = 11.76 mm.

Correlation between scores on the PPI word scale and on the VAS for (a) intensity of arthritis pain right now and (b) intensity of arthritis pain most of the time were analyzed using Spearman’s rank order correlation (rho). Intensity of arthritis pain right now scores on the word scale and on the VAS were positively correlated (rho = .776) and
significant at the .01 level (2 tailed). The word scale and the VAS scores on intensity of arthritis pain most of the time were also positively correlated (rho = .735) and significant at the .01 level (2 tailed).

In summary, Spearman’s rho rank order correlations divulged no significant correlation between the type of arthritis (OA and RA) a participant reported and the pain self-management methods the person used. Three demographic characteristics: (a) age, (b) was the individual disabled due to arthritis, and (c) length of time the individual had experienced arthritis pain, did exhibit correlation with six of the pain management methods. Age was correlated with two methods: (a) using methods to control stress and (b) using relaxation techniques. Disability due to arthritis was correlated with three methods: (a) massaging painful areas, (b) taking medicine prescribed by a physician, and (c) using positive self-talk. In addition, how many years an individual had experienced arthritis pain correlated with using a brace or splint.

Spearman’s rho rank order correlations between demographic characteristics and the perceived helpfulness of the pain self-management methods used showed that age had positive correlation with (a) resting and (b) focus on support of religious beliefs. The number of years an individual had experienced arthritis pain revealed a negative correlation with using methods to control stress and taking medicine not prescribed by a physician.

Spearman’s rank order correlation (rho) indicated that scores on the PPI word scales for pain intensity right now and pain intensity most of the time were positively correlated with the scores on the VAS for the same two pain intensity questions.

Summary

This chapter described the study sample and delineated the data analyses used to answer the five research questions. Analyses disclosed that individuals in the study sample did use pain self-management methods to relieve pain associated with RA and
OA. All of the 22 pain management methods indexed on the PMI were used by at least one person, and some individuals used as many as 15 or more methods. Six methods were perceived by participants as being the most helpful of all the methods. Two participants also reported using pain management methods not indexed on the PMI.

The pain management method, exercising, was used by the largest number of participants with OA and was one of three methods used by the largest number of participants with RA. In addition, exercising was perceived as the most helpful method by both the OA and RA groups.

The type of arthritis (RA or OA) that an individual reported did not show a significant correlation with any of the pain management methods used. Three demographic characteristics of the individuals in the sample did reveal correlation with several of the pain management methods when considering the methods used and the perceived helpfulness of the methods.

Scores on the PPI scale indicated that the largest number of participants considered his or her current pain intensity to be mild or discomforting (mean = 1.74). Pain intensity most of the time was reported by the greatest number of respondents as discomforting or distressing (mean = 2.11).

Some study participants indicated experiencing pain at the time they completed the study questionnaire from sources other than arthritis. Some of the additional sources of pain were: (a) forms of arthritis other than OA or RA (i.e., fibromyalgia, osteoporosis); (b) other musculo-skeletal problems (i.e., bone spurs, collapsed vertebra, fractured arm, torn rotator cuff); (c) nerve problems (i.e., neuralgia, sciatica); and (d) headaches.
CHAPTER 6

DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

This chapter includes a summary of the study’s primary findings and the relationship of the findings to the purpose of the study and the answers to the research questions. There is also a discussion of the implications of the study for nursing, the limitations of the study, and recommendations for further research.

Summary of the Sample

The study sample consisted of 91 individuals with arthritis. Fifty participants had osteoarthritis (OA), 18 had rheumatoid arthritis (RA), nine had both OA and RA, 13 had an unknown type of arthritis, and one individual did not reply to the question. All participants reported they experienced chronic arthritis pain and they used pain self-management methods.

The samples' representative respondent was a 68 year old retired Caucasian female with OA, a high school or higher education, a household income last year between $15,000 and $59,999, who had experienced chronic arthritis pain for 10 years. The sample corresponded to the target population of adults in several areas: (a) over 18 years old with OA or RA, (b) mentally alert and understood English, and (c) had experienced continuous or intermittent episodes of arthritis pain for longer than three months.
Discussion

The purpose of the study was to identify pain self-management methods that individuals with RA and OA are presently using and to determine the perceived helpfulness of the methods as measured by the Pain Management Inventory (PMI). All study participants with RA and with OA reported experiencing arthritis pain and all used pain self-management methods to help relieve their arthritis pain. Additionally, all of the subjects used at least one of the 22 methods indexed on the Pain Management Inventory (PMI).

Pain Self-Management Methods Used by Sample as a Whole

Eight pain management methods (i.e., exercising; resting; pacing activities; using a heated tub, pool, or shower; using positive self talk; talking with people who understand, using distracting techniques; and taking medicine for pain prescribed by a physician) were used by more than 80% of the respondents. When the sample was viewed as a whole, exercising was the pain management method used by the greatest number of participants. When the sample was divided into subgroups by type of arthritis, OA and RA, exercising was again the pain management method used by the most people in each group. The pain management method used by the second largest number of participants was resting, and pacing activities was the pain self-management method used by the third largest number of participants in this study.

The use of exercising by the greatest number of participants (98.9%) in this sample differs from Davis and Atwood's (1996) study findings. In the Davis and Atwood study, exercising ranked fourth (78%) in terms of the number of participants using the method. The method used by the largest number of respondents (91%) in the 1996 Davis and Atwood study, taking medicine for pain prescribed by a physician, ranked eighth (82.4%, n = 70) in terms of the number of participants using the method in this study. The difference in the results of this study and the Davis and Atwood study is probably at least
partially explained by the use of different types of sources for the sample. Davis &
Atwood recruited subjects from university affiliated arthritis clinics, rather than from
Arthritis Foundation (AF) sponsored exercise classes as in this study. The differences
between the findings of exercising might also be explained by the fact that health care
professionals and the AF are now emphasizing the use of exercise in the treatment of
arthritis and the benefits of balancing rest and exercise (Arthritis Foundation, 1998;
Lozada & Altman, 1997).

When further comparing the results of the Davis and Atwood (1996) study to this
study, the reported usage of TENS and of biofeedback were similar. Davis and Atwood
results indicated that both biofeedback and TENS were used by the smallest number
(10%, n = 8) of respondents. The two pain management methods were also used by the
smallest number of participants in this study, biofeedback (28.6%, N = 24) and using
TENS (20.2%, N = 17). Comparison of study results is made only to the Davis and
Atwood study since most of the other arthritis pain relief studies in the literature
investigated coping with arthritis pain rather than indexing what arthritis pain
management methods are used.

Perceived Helpfulness of Pain Self-Management Methods Used by Sample as a Whole

In analyzing the perceived helpfulness of each pain management method that was
used, exercising (mean = 4.00) was the method perceived by respondents in this study to
be the most helpful in pain relief. It is easy to understand why the method used by the
most people in arthritis pain management is also be the method perceived to be the most
helpful. As explained earlier in the literature review section, the selection of a pain
management method is usually influenced by how successful and helpful the method has
been to the individual in the past (Davis & Atwood, 1996; Phillips & Rachman, 1996;
Turk et al., 1983). Individuals who find exercising helpful in managing arthritis pain will
be more likely to continue to use the method; and the desire for a helpful pain relief
method is obviously a big motivating factor for those individuals who make the effort to get out and go to an exercise class.

After exercise the methods perceived to be the most helpful by the greatest number of participants in this study were: (a) heated tub, pool, or shower, (b) taking medicine prescribed by a physician, (c) pacing activities, (d) resting, and (e) using positive self-talk. Three of these methods, resting, taking medicine prescribed by a physician, and using a heated tub, pool, or shower, also had the highest mean scores in terms of perceived helpfulness in the 1996 Davis and Atwood study. The other two methods perceived most helpful in this study, pacing and using positive self-talk, were added to the PMI after the 1996 study and therefore were not reported in the findings of that study.

**Differences In Pain Self-Management Methods Used (OA Versus RA)**

When viewing the participants by type of arthritis, RA and OA, exercising was one of three pain self-management method used by the largest number (89%) of participants with RA and was the method used by all (100%) of the participants with OA. The other two methods used by the most participants with RA were talking with people who understand and massaging painful areas. In addition two methods, using a heated tub, pool, or shower and avoiding physical activity, were ranked the same by the PA and the OA groups in regards to number of individuals using, fourth and twelfth, respectively. The method, using TENS, was used by the fewest number of subjects in both the RA and the OA groups.

The low usage of TENS might be related to the fact that a prescription or referral is often required to obtain a TENS unit, the fact that some individuals do not like the idea of electrical stimulation to their body, or even the fact that it is a piece of equipment that must be worn or carried when an individual is moving around. In contrast, exercising, using a heated tub, pool or shower, massaging painful areas and talking with people who
understand are relatively simple activities that do not require prescriptions or referral and are not pieces of equipment that must be worn or carried around. All of these could be reasons why TENS is not used much rather lack of efficiency.

In terms of perceived helpfulness of pain self-management methods, the subgroups of respondents with OA and with RA indicated that exercising was perceived as the most helpful method indexed on the PMI (OA mean = 4.69; RA mean = 4.67). The perceived least helpful method for the RA group, using TENS (mean = 1.63), was the second least helpful (mean = 2.12) for the OA group. The least helpful method for the OA group was using biofeedback (Mean = 2.04).

Like TENS, biofeedback may not be as simple as exercising or other pain self-management methods that are used more often. Biofeedback often requires referral to professionals for individual instruction and it may take several sessions for a person to become proficient. So, like TENS, low usage of biofeedback may not necessarily be the result of lack of effectiveness in controlling arthritis pain.

**Correlation Between Pain Self-Management Methods Used and Demographic Characteristics**

Age correlated significantly with use of (a) using relaxation methods as meditation and guided imagery and (b) using methods to control stress. Disability due to arthritis correlated with massaging painful areas, taking medicine for pain prescribed by a physician, and using positive self talk. The characteristic, number of years an individual had been experiencing arthritis pain, correlated with using a brace or splint. Correlates between demographic characteristics and the perceived helpfulness of pain self-management methods were age and (a) resting and (b) focusing on support of religious beliefs. The number of years a participant had experienced arthritis pain correlated with using methods to control stress and taking medicine for pain not prescribed by a physician.
Conclusions

Findings of the study indicate that the 22 pain self-management methods on the PMI are a current index of at least some of the methods that individuals with OA and RA are presently using to relieve arthritis pain. Exercising is the pain self-management method utilized by the largest number of individuals in the study sample to relieve OA and RA pain, and it is also perceived by study respondents as the most helpful method when viewing the sample as a group.

When breaking the sample into OA and RA groups, exercising is used by the largest number of individuals with OA and perceived as most helpful. Three methods (including exercise) were used by the largest number of participants with RA, but exercising had the higher mean helpfulness score of the three methods. Data suggests the need for further research within and between groups with OA and groups with RA. In general, the methods that are perceived as being most helpful are the methods that are used by the greatest number of individuals.

Study results indicated that participants with OA and RA do make a conscious decision to relieve their pain by selection of a pain management method. Results also appear to indicate that many of the participants do this within a cognitive-behavioral framework of the pain management process such as the Davis and Atwood (1996) model in Figure 1.

Not only did participants indicate that the severity of their pain influenced the selection of a pain management method, but also that pain location and length of time the pain had been present influenced their choice of a pain management method. Additionally, the fact that several of the pain self-management methods that respondents perceived as most helpful were also the methods used by the largest number of respondents appears to support the Davis and Atwood model of the pain management process (see Figure 1).

Study findings support the use of the PMI as a current index of some of the pain
self-management methods being used by study participants with arthritis. In addition, study findings indicate that the PPI is an appropriate instrument for the measurement of study respondents' present pain intensity.

Implications for Nursing

Nurses (as well as other health care professionals such as physicians, physical therapists, and occupational therapists) can use some of the findings from this study in their daily practice when caring for individuals with OA or RA and planning and evaluating pain relief for such patients. For instance: (a) pain self-management methods indexed on the PMI could be suggested to arthritis patients who need assistance with pain management, (b) the PMI could be used as an assessment tool for patients with OA or RA to find what methods the individual is using and finding helpful for pain relief, or (c) nurse educators could use the PMI as an instructional tool when teaching arthritis patients or nursing students about the self-management of arthritis pain.

Study data supports that participants make a conscious decision to use a pain management method based upon the perceived helpfulness of that method, and this indicates that many of the participants are making informed choices about pain self-management methods. Therefore, it is important that nurses include patients in the planning of arthritis pain self-management strategies and methods, rather than just telling a patient what to do for pain relief. As Lorig (1993) noted, chronic illness (e.g., arthritis) self-management programs are not meant to be prescriptive. Instead such programs are designed to assist individuals in making informed choices (e.g., choices about pain management methods), and then to complete or carry out the choices.

Limitations of the Study

The total sample size was small and the number of participants with RA was extremely small. Because of the limited sample size, the findings of this study must be
interpreted with great caution, especially the comparisons between individuals with RA and those with OA. Also, the sample was a convenience sample, overwhelming female and Caucasian and primarily drawn from similar sources, AF sponsored exercise classes. In addition, some participants indicated they were experiencing pain from sources other than OA or RA when they completed the study questionnaire and due to the small number and data collection methodology, these were not analyzed. Furthermore, the instruments used in the study were self-rated ones. The generalizability of the findings are limited by all of these factors.

**Recommendations**

The results of this study include information on the pain self-management methods that a sample of individuals in southern Nevada use to relieve chronic OA and RA pain. Similar studies should be performed with different participants since this study sample was primarily female and Caucasian and was largely obtained from the membership of AF exercise classes. Studies should be completed with samples that have more ethnic diversity and more male participants. Since such a large number of participants were recruited from exercise classes, studies should be performed with individuals from other sources for comparison. Additional studies should also be performed that look further into possible correlations between demographic characteristics and the methods that are used and perceived as helpful.

Little used and less helpful methods on the PMI (e.g., using TENS) should be studied further to determine if the low usage is due to the fact that individuals are not aware of the availability of the method, the fact that the methods are not appropriate or accessible, the fact that health care professionals seldom prescribe or recommend the method, or the fact that the method is not perceived as helpful by a different sample of respondents. Additionally, in view of the recent introduction of several new OA and RA pain medicines, it would be helpful to study the efficacy of specific arthritis pain
medications.

A small number of study participants did not seem to fully understand the scale (1 never use, to 6 = often use) on the "how often do you use?" section of the PMI. It is possible that changing the scale to read 0 = never use, to 5 = often use, would make it easier for some individuals to understand and answer the PNH. It is possible that changing the scale to read 0=never use, to 5=often use, would make it easier for some individuals to understand and answer the PMI.

Summary

This chapter presented a summary of the sample and a discussion of the relationship of the findings of the study to the study purpose and to the answers to the research questions. Also discussed were study conclusions, implications for nursing practice, limitations of the study, and recommendations for further research.
References


Table 1

Comparison of Key Characteristics of Osteoarthritis (OA) and Rheumatoid Arthritis (RA)

<table>
<thead>
<tr>
<th>Characteristics</th>
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<th>RA</th>
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<tr>
<td>Age of onset</td>
<td>Usually middle age or older</td>
<td>Usually young or middle age</td>
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<tr>
<td>Gender ratio</td>
<td>Female : Male, 2 :1*</td>
<td>Female : Male, 3:1*</td>
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<td>Involved tissue</td>
<td>Cartilage</td>
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<td>Asymmetric pattern</td>
<td>Symmetric pattern</td>
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<td>Disease course</td>
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<td>Exacerbation and remission</td>
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<td>Involved joints</td>
<td>Most often fingers, spine, hips and knees</td>
<td>Most often hands, wrists, fingers, knees, feet</td>
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<td>Occurrence</td>
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Table 2

Sample Description Regarding Gender, Race, Education, Type of Medical Insurance, Employment and Income.

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<td>Some college</td>
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<td>42.1</td>
</tr>
<tr>
<td>College degree</td>
<td>17</td>
<td>22.4</td>
</tr>
<tr>
<td>Type Medical Insurance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medicare</td>
<td>49</td>
<td>54.4</td>
</tr>
<tr>
<td>Medicare Supplement</td>
<td>20</td>
<td>22.2</td>
</tr>
<tr>
<td>Medicaid</td>
<td>2</td>
<td>2.2</td>
</tr>
<tr>
<td>HMO</td>
<td>28</td>
<td>31.1</td>
</tr>
<tr>
<td>Private Insurance</td>
<td>28</td>
<td>31.1</td>
</tr>
<tr>
<td>VA/Military</td>
<td>4</td>
<td>4.4</td>
</tr>
<tr>
<td>Other</td>
<td>8</td>
<td>8.9</td>
</tr>
<tr>
<td>Employment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>13</td>
<td>16.9</td>
</tr>
<tr>
<td>Characteristic</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>---------------</td>
<td>---</td>
<td>----</td>
</tr>
<tr>
<td>Not employed</td>
<td>4</td>
<td>5.2</td>
</tr>
<tr>
<td>Retired</td>
<td>60</td>
<td>77.9</td>
</tr>
</tbody>
</table>

**Yearly Household Income**

<table>
<thead>
<tr>
<th>Income Range</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under $15,000</td>
<td>16</td>
<td>23.2</td>
</tr>
<tr>
<td>$15,000-29,999</td>
<td>22</td>
<td>31.9</td>
</tr>
<tr>
<td>$30,000-59,000</td>
<td>23</td>
<td>33.3</td>
</tr>
<tr>
<td>$60,000-89,000</td>
<td>4</td>
<td>5.8</td>
</tr>
<tr>
<td>Over $90,000</td>
<td>4</td>
<td>5.8</td>
</tr>
</tbody>
</table>

*Note:* Not all participants provided responses to every demographic question. Some participants reported multiple types of medical insurance.
Table 3

Sample Demographics Regarding Arthritis Type, Disability and Activity Limitations

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type of Arthritis</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OA</td>
<td>50</td>
<td>55.6</td>
</tr>
<tr>
<td>RA</td>
<td>18</td>
<td>20.0</td>
</tr>
<tr>
<td>OA + RA</td>
<td>9</td>
<td>10.0</td>
</tr>
<tr>
<td>Unknown Type</td>
<td>13</td>
<td>14.4</td>
</tr>
<tr>
<td>No response</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td><strong>Disabled Due to Arthritis</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>58</td>
<td>66.7</td>
</tr>
<tr>
<td>Yes</td>
<td>29</td>
<td>33.3</td>
</tr>
<tr>
<td>No response</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td><strong>Activities Affected by and Limited by Arthritis</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mobility (walking, sitting and standing)</td>
<td>81</td>
<td>90.0</td>
</tr>
<tr>
<td>Bathing (getting into tub or shower)</td>
<td>31</td>
<td>34.4</td>
</tr>
<tr>
<td>Using Toilet (sitting down or standing up)</td>
<td>30</td>
<td>33.3</td>
</tr>
<tr>
<td>Dressing (closing zippers or buttons)</td>
<td>29</td>
<td>32.2</td>
</tr>
<tr>
<td>Writing or using telephone</td>
<td>24</td>
<td>26.7</td>
</tr>
<tr>
<td>Grooming (combing hair or brushing teeth)</td>
<td>22</td>
<td>24.4</td>
</tr>
<tr>
<td>Eating (handling utensils, cutting food)</td>
<td>16</td>
<td>17.8</td>
</tr>
</tbody>
</table>

*Note.* Not all participants provided responses to every demographic question.
Table 4

Sample Description Regarding Source of Arthritis Pain

<table>
<thead>
<tr>
<th>Source</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Left knee</td>
<td>62</td>
<td>68.1</td>
</tr>
<tr>
<td>Right knee</td>
<td>59</td>
<td>64.8</td>
</tr>
<tr>
<td>Spine</td>
<td>53</td>
<td>58.2</td>
</tr>
<tr>
<td>Neck</td>
<td>50</td>
<td>54.9</td>
</tr>
<tr>
<td>Left hip</td>
<td>48</td>
<td>52.7</td>
</tr>
<tr>
<td>Right fingers</td>
<td>47</td>
<td>52.2</td>
</tr>
<tr>
<td>Right shoulder</td>
<td>47</td>
<td>51.6</td>
</tr>
<tr>
<td>Left fingers</td>
<td>46</td>
<td>50.5</td>
</tr>
<tr>
<td>Right hand</td>
<td>44</td>
<td>48.4</td>
</tr>
<tr>
<td>Left hand</td>
<td>40</td>
<td>44.0</td>
</tr>
<tr>
<td>Left shoulder</td>
<td>38</td>
<td>41.8</td>
</tr>
<tr>
<td>Right hip</td>
<td>37</td>
<td>40.7</td>
</tr>
<tr>
<td>Right wrist</td>
<td>36</td>
<td>39.6</td>
</tr>
<tr>
<td>Left foot</td>
<td>32</td>
<td>35.2</td>
</tr>
<tr>
<td>Left wrist</td>
<td>31</td>
<td>34.4</td>
</tr>
<tr>
<td>Right foot</td>
<td>31</td>
<td>34.1</td>
</tr>
<tr>
<td>Left toes</td>
<td>30</td>
<td>33.0</td>
</tr>
<tr>
<td>Left ankle</td>
<td>29</td>
<td>31.9</td>
</tr>
<tr>
<td>Right toes</td>
<td>26</td>
<td>28.6</td>
</tr>
<tr>
<td>Left elbow</td>
<td>25</td>
<td>27.5</td>
</tr>
<tr>
<td>Right elbow</td>
<td>25</td>
<td>27.5</td>
</tr>
<tr>
<td>Right ankle</td>
<td>24</td>
<td>26.7</td>
</tr>
</tbody>
</table>

Note. Most participants marked multiple sources.
Table 5

Sample Description Regarding Arthritis Pain Self-Management

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Makes conscious decisions to act to try to relieve pain</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>59</td>
<td>66.3</td>
</tr>
<tr>
<td>Sometimes</td>
<td>23</td>
<td>25.8</td>
</tr>
<tr>
<td>No</td>
<td>7</td>
<td>7.7</td>
</tr>
<tr>
<td>Evaluates new ways to relieve pain</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>53</td>
<td>59.6</td>
</tr>
<tr>
<td>Sometimes</td>
<td>20</td>
<td>22.5</td>
</tr>
<tr>
<td>No</td>
<td>16</td>
<td>18.0</td>
</tr>
<tr>
<td>Uses a sequence of events to select a pain relief method</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>39</td>
<td>43.8</td>
</tr>
<tr>
<td>Sometimes</td>
<td>41</td>
<td>46.1</td>
</tr>
<tr>
<td>No</td>
<td>9</td>
<td>10.1</td>
</tr>
<tr>
<td>Chooses a different pain relief method based upon characteristics of pain</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>34</td>
<td>37.8</td>
</tr>
<tr>
<td>Sometimes</td>
<td>36</td>
<td>40.0</td>
</tr>
<tr>
<td>No</td>
<td>20</td>
<td>22.2</td>
</tr>
<tr>
<td>Influences upon choice of pain relief method</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severity of pain</td>
<td>49</td>
<td>55.7</td>
</tr>
<tr>
<td>Location of pain</td>
<td>44</td>
<td>50.0</td>
</tr>
<tr>
<td>How long pain has been present</td>
<td>41</td>
<td>46.6</td>
</tr>
<tr>
<td>Feels he/she has control over his/her life</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>52</td>
<td>57.8</td>
</tr>
<tr>
<td>Sometimes</td>
<td>32</td>
<td>35.6</td>
</tr>
<tr>
<td>No</td>
<td>6</td>
<td>6.7</td>
</tr>
</tbody>
</table>

Note. Not all participants provided responses to every question.
Table 6

Sample Description Regarding Functioning With and Managing Arthritis Pain

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate ability to function when experiencing arthritis pain</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 (not well at all)</td>
<td>4</td>
<td>4.4</td>
</tr>
<tr>
<td>1</td>
<td>6</td>
<td>6.6</td>
</tr>
<tr>
<td>2</td>
<td>13</td>
<td>14.3</td>
</tr>
<tr>
<td>3</td>
<td>39</td>
<td>42.9</td>
</tr>
<tr>
<td>4</td>
<td>21</td>
<td>23.1</td>
</tr>
<tr>
<td>5 (extremely well)</td>
<td>8</td>
<td>8.8</td>
</tr>
<tr>
<td>Able to manage arthritis pain successfully</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 (not well at all)</td>
<td>1</td>
<td>1.1</td>
</tr>
<tr>
<td>1</td>
<td>4</td>
<td>4.4</td>
</tr>
<tr>
<td>2</td>
<td>10</td>
<td>11.1</td>
</tr>
<tr>
<td>3</td>
<td>35</td>
<td>38.9</td>
</tr>
<tr>
<td>4</td>
<td>32</td>
<td>35.6</td>
</tr>
<tr>
<td>5 (extremely well)</td>
<td>8</td>
<td>8.9</td>
</tr>
<tr>
<td>No response</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>How well are you doing considering all effects of arthritis pain</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 (not well at all)</td>
<td>1</td>
<td>1.1</td>
</tr>
<tr>
<td>1</td>
<td>5</td>
<td>5.5</td>
</tr>
<tr>
<td>2</td>
<td>6</td>
<td>6.6</td>
</tr>
<tr>
<td>3</td>
<td>25</td>
<td>27.5</td>
</tr>
<tr>
<td>4</td>
<td>36</td>
<td>39.6</td>
</tr>
<tr>
<td>5 (extremely well)</td>
<td>18</td>
<td>19.8</td>
</tr>
</tbody>
</table>
Table 7
Comparison of Pain Management Methods Used by Total Sample

<table>
<thead>
<tr>
<th>Method</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exercising</td>
<td>88</td>
<td>98.9</td>
</tr>
<tr>
<td>Resting</td>
<td>82</td>
<td>95.3</td>
</tr>
<tr>
<td>Pacing activities</td>
<td>82</td>
<td>94.3</td>
</tr>
<tr>
<td>Using heated tub, pool, or shower</td>
<td>79</td>
<td>89.8</td>
</tr>
<tr>
<td>Using positive self-talk</td>
<td>69</td>
<td>84.1</td>
</tr>
<tr>
<td>Talking with people who understand</td>
<td>72</td>
<td>83.7</td>
</tr>
<tr>
<td>Using distracting techniques</td>
<td>72</td>
<td>82.8</td>
</tr>
<tr>
<td>Taking medicine for pain prescribed by a physician</td>
<td>70</td>
<td>82.4</td>
</tr>
<tr>
<td>Massaging painful area(s)</td>
<td>69</td>
<td>79.3</td>
</tr>
<tr>
<td>Applying heat to painful area(s)</td>
<td>64</td>
<td>73.6</td>
</tr>
<tr>
<td>Using methods to control stress</td>
<td>57</td>
<td>67.9</td>
</tr>
<tr>
<td>Focusing on support of religious beliefs</td>
<td>56</td>
<td>66.7</td>
</tr>
<tr>
<td>Avoiding physical activity</td>
<td>54</td>
<td>63.5</td>
</tr>
<tr>
<td>Applying cold to painful area(s)</td>
<td>47</td>
<td>55.3</td>
</tr>
<tr>
<td>Participating in support groups</td>
<td>46</td>
<td>54.8</td>
</tr>
<tr>
<td>Taking medicine for pain NOT prescribed by a physician</td>
<td>42</td>
<td>48.8</td>
</tr>
<tr>
<td>Avoiding foods which make the pain begin or become worse</td>
<td>36</td>
<td>44.4</td>
</tr>
<tr>
<td>Using relaxation techniques as meditation or guided imagery</td>
<td>32</td>
<td>39</td>
</tr>
<tr>
<td>Taking anti-depressant medicine prescribed by a physician</td>
<td>31</td>
<td>37.3</td>
</tr>
<tr>
<td>Using a brace or splint</td>
<td>30</td>
<td>35.3</td>
</tr>
<tr>
<td>Using biofeedback</td>
<td>24</td>
<td>28.6</td>
</tr>
<tr>
<td>Using TENS</td>
<td>17</td>
<td>20.2</td>
</tr>
</tbody>
</table>

Note. n = 91
Table 8

Perceived Helpfulness of Pain Management Methods for the Total Sample

<table>
<thead>
<tr>
<th>Method</th>
<th>n</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exercising</td>
<td>85</td>
<td>4.85</td>
<td>1.30</td>
</tr>
<tr>
<td>Heated tub, pool or shower</td>
<td>83</td>
<td>4.57</td>
<td>1.46</td>
</tr>
<tr>
<td>Taking medicine for pain prescribed by a physician</td>
<td>74</td>
<td>4.55</td>
<td>1.52</td>
</tr>
<tr>
<td>Pacing activities</td>
<td>79</td>
<td>4.48</td>
<td>1.37</td>
</tr>
<tr>
<td>Resting</td>
<td>80</td>
<td>4.40</td>
<td>1.34</td>
</tr>
<tr>
<td>Using positive self-talk</td>
<td>65</td>
<td>4.37</td>
<td>1.49</td>
</tr>
<tr>
<td>Focus on support of religious beliefs</td>
<td>62</td>
<td>3.98</td>
<td>1.74</td>
</tr>
<tr>
<td>Applying heat to painful area(s)</td>
<td>71</td>
<td>3.97</td>
<td>1.64</td>
</tr>
<tr>
<td>Using distracting techniques</td>
<td>80</td>
<td>3.83</td>
<td>1.52</td>
</tr>
<tr>
<td>Participating in support groups</td>
<td>62</td>
<td>3.52</td>
<td>2.01</td>
</tr>
<tr>
<td>Talking with people who understand</td>
<td>76</td>
<td>3.47</td>
<td>1.69</td>
</tr>
<tr>
<td>Use methods to control stress</td>
<td>69</td>
<td>3.43</td>
<td>1.59</td>
</tr>
<tr>
<td>Taking anti-depressant medicine prescribed by a physician</td>
<td>53</td>
<td>3.40</td>
<td>2.10</td>
</tr>
<tr>
<td>Avoiding physical activity</td>
<td>58</td>
<td>3.28</td>
<td>1.67</td>
</tr>
<tr>
<td>Massaging painful area(s)</td>
<td>77</td>
<td>3.26</td>
<td>1.57</td>
</tr>
<tr>
<td>Avoiding foods which make the pain begin or become worse</td>
<td>52</td>
<td>3.04</td>
<td>1.92</td>
</tr>
<tr>
<td>Applying cold to painful area(s)</td>
<td>63</td>
<td>2.92</td>
<td>1.70</td>
</tr>
<tr>
<td>Using a brace or a splint</td>
<td>48</td>
<td>2.92</td>
<td>2.01</td>
</tr>
<tr>
<td>Taking medicine for pain NOT prescribed by a physician</td>
<td>66</td>
<td>2.88</td>
<td>1.82</td>
</tr>
<tr>
<td>Using relaxation techniques as meditation or guided imagery</td>
<td>51</td>
<td>2.67</td>
<td>1.73</td>
</tr>
<tr>
<td>Using TENS</td>
<td>40</td>
<td>2.12</td>
<td>1.88</td>
</tr>
<tr>
<td>Using biofeedback</td>
<td>49</td>
<td>2.12</td>
<td>1.45</td>
</tr>
</tbody>
</table>

Note. n = 91
Table 9
Comparison of Pain Management Methods Used by OA and RA

<table>
<thead>
<tr>
<th>Method</th>
<th>OA</th>
<th></th>
<th>RA</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Exercising</td>
<td>50</td>
<td>100</td>
<td>16</td>
<td>89</td>
</tr>
<tr>
<td>Pacing activities</td>
<td>48</td>
<td>96</td>
<td>14</td>
<td>78</td>
</tr>
<tr>
<td>Resting</td>
<td>48</td>
<td>96</td>
<td>14</td>
<td>78</td>
</tr>
<tr>
<td>Using a heated tub, pool or shower</td>
<td>44</td>
<td>88</td>
<td>15</td>
<td>83</td>
</tr>
<tr>
<td>Using distracting techniques</td>
<td>42</td>
<td>84</td>
<td>12</td>
<td>67</td>
</tr>
<tr>
<td>Taking medicine for pain prescribed by a physician</td>
<td>40</td>
<td>80</td>
<td>13</td>
<td>72</td>
</tr>
<tr>
<td>Talking with people who understand</td>
<td>39</td>
<td>78</td>
<td>16</td>
<td>89</td>
</tr>
<tr>
<td>Using positive self-talk</td>
<td>39</td>
<td>78</td>
<td>13</td>
<td>72</td>
</tr>
<tr>
<td>Massaging painful area(s)</td>
<td>38</td>
<td>76</td>
<td>16</td>
<td>89</td>
</tr>
<tr>
<td>Applying heat to painful area(s)</td>
<td>38</td>
<td>76</td>
<td>14</td>
<td>78</td>
</tr>
<tr>
<td>Using methods to control stress</td>
<td>33</td>
<td>66</td>
<td>10</td>
<td>56</td>
</tr>
<tr>
<td>Avoiding physical activity</td>
<td>30</td>
<td>60</td>
<td>10</td>
<td>56</td>
</tr>
<tr>
<td>Focusing on support of religious beliefs</td>
<td>28</td>
<td>56</td>
<td>13</td>
<td>72</td>
</tr>
<tr>
<td>Participating in support groups</td>
<td>27</td>
<td>54</td>
<td>06</td>
<td>33</td>
</tr>
<tr>
<td>Taking medicine for pain NOT prescribed by a physician</td>
<td>26</td>
<td>52</td>
<td>07</td>
<td>39</td>
</tr>
<tr>
<td>Applying cold to painful area(s)</td>
<td>25</td>
<td>50</td>
<td>06</td>
<td>33</td>
</tr>
<tr>
<td>Taking anti-depressant medicine prescribed by a physician</td>
<td>21</td>
<td>42</td>
<td>04</td>
<td>22</td>
</tr>
<tr>
<td>Avoiding foods that makes the pain begin or become worse</td>
<td>18</td>
<td>36</td>
<td>07</td>
<td>39</td>
</tr>
<tr>
<td>Using relaxation techniques as meditation or guided imagery</td>
<td>17</td>
<td>34</td>
<td>05</td>
<td>28</td>
</tr>
<tr>
<td>Using a brace or splint</td>
<td>15</td>
<td>30</td>
<td>07</td>
<td>39</td>
</tr>
<tr>
<td>Using biofeedback</td>
<td>12</td>
<td>24</td>
<td>06</td>
<td>33</td>
</tr>
<tr>
<td>Using TENS</td>
<td>08</td>
<td>16</td>
<td>03</td>
<td>17</td>
</tr>
</tbody>
</table>

* OA (n = 50)

* RA (n = 18)

◆ 3 most used
<table>
<thead>
<tr>
<th>Method</th>
<th>n</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exercising</td>
<td>49</td>
<td>4.69</td>
<td>1.29</td>
</tr>
<tr>
<td>Taking medicine for pain prescribed by a physician</td>
<td>44</td>
<td>4.55</td>
<td>1.52</td>
</tr>
<tr>
<td>Pacing activities</td>
<td>46</td>
<td>4.54</td>
<td>1.19</td>
</tr>
<tr>
<td>Using positive self-talk</td>
<td>37</td>
<td>4.54</td>
<td>1.19</td>
</tr>
<tr>
<td>Using heated tub, pool, or shower</td>
<td>47</td>
<td>4.43</td>
<td>1.50</td>
</tr>
<tr>
<td>Resting</td>
<td>47</td>
<td>4.32</td>
<td>1.34</td>
</tr>
<tr>
<td>Applying heat to painful area(s)</td>
<td>43</td>
<td>3.88</td>
<td>1.64</td>
</tr>
<tr>
<td>Focusing on support of religious beliefs</td>
<td>34</td>
<td>3.76</td>
<td>1.79</td>
</tr>
<tr>
<td>Using distracting techniques</td>
<td>45</td>
<td>3.73</td>
<td>1.34</td>
</tr>
<tr>
<td>Taking anti-depressant medicine prescribed by a physician</td>
<td>31</td>
<td>3.71</td>
<td>2.08</td>
</tr>
<tr>
<td>Avoiding physical activity</td>
<td>33</td>
<td>3.48</td>
<td>1.62</td>
</tr>
<tr>
<td>Participating in support group</td>
<td>36</td>
<td>3.47</td>
<td>1.90</td>
</tr>
<tr>
<td>Talking with people who understand</td>
<td>43</td>
<td>3.42</td>
<td>1.64</td>
</tr>
<tr>
<td>Using methods to control stress</td>
<td>39</td>
<td>3.36</td>
<td>1.53</td>
</tr>
<tr>
<td>Massaging painful area(s)</td>
<td>43</td>
<td>3.16</td>
<td>1.57</td>
</tr>
<tr>
<td>Avoiding foods which make the pain begin or become worse</td>
<td>30</td>
<td>2.87</td>
<td>1.83</td>
</tr>
<tr>
<td>Using a brace or splint</td>
<td>27</td>
<td>2.85</td>
<td>1.99</td>
</tr>
<tr>
<td>Applying cold to painful area(s)</td>
<td>34</td>
<td>2.74</td>
<td>1.62</td>
</tr>
<tr>
<td>Taking medicine for pain NOT prescribed by a physician</td>
<td>41</td>
<td>2.59</td>
<td>1.66</td>
</tr>
<tr>
<td>Using relaxation techniques as meditation or guided imagery</td>
<td>30</td>
<td>2.37</td>
<td>1.63</td>
</tr>
<tr>
<td>Using TENS</td>
<td>25</td>
<td>2.16</td>
<td>1.89</td>
</tr>
<tr>
<td>Using biofeedback</td>
<td>26</td>
<td>2.04</td>
<td>1.34</td>
</tr>
</tbody>
</table>
Table 11
Perceived Helpfulness of Pain Management Methods by Individuals with RA (n = 18)

<table>
<thead>
<tr>
<th>Method</th>
<th>n</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exercising</td>
<td>15</td>
<td>4.67</td>
<td>1.54</td>
</tr>
<tr>
<td>Using heated tub. pool or shower</td>
<td>15</td>
<td>4.47</td>
<td>1.41</td>
</tr>
<tr>
<td>Pacing activities</td>
<td>13</td>
<td>4.38</td>
<td>1.66</td>
</tr>
<tr>
<td>Applying heat to painful area(s)</td>
<td>14</td>
<td>4.36</td>
<td>1.39</td>
</tr>
<tr>
<td>Taking medicine for pain prescribed by a physician</td>
<td>14</td>
<td>4.36</td>
<td>1.74</td>
</tr>
<tr>
<td>Resting</td>
<td>15</td>
<td>4.33</td>
<td>1.68</td>
</tr>
<tr>
<td>Using positive self-talk</td>
<td>12</td>
<td>4.33</td>
<td>1.87</td>
</tr>
<tr>
<td>Focusing on support of religious beliefs</td>
<td>13</td>
<td>4.23</td>
<td>1.69</td>
</tr>
<tr>
<td>Using distracting techniques</td>
<td>16</td>
<td>3.81</td>
<td>1.97</td>
</tr>
<tr>
<td>Talking with people who understand</td>
<td>15</td>
<td>3.53</td>
<td>1.73</td>
</tr>
<tr>
<td>Massaging painful area(s)</td>
<td>17</td>
<td>3.18</td>
<td>1.63</td>
</tr>
<tr>
<td>Using methods to control stress</td>
<td>13</td>
<td>3.15</td>
<td>1.72</td>
</tr>
<tr>
<td>Avoiding foods which make the pain begin or become worse</td>
<td>11</td>
<td>3.09</td>
<td>2.30</td>
</tr>
<tr>
<td>Taking medicine for pain NOT prescribed by a physician</td>
<td>12</td>
<td>3.00</td>
<td>1.95</td>
</tr>
<tr>
<td>Participating in support group</td>
<td>12</td>
<td>2.83</td>
<td>2.29</td>
</tr>
<tr>
<td>Using relaxation techniques as meditation or guided imagery</td>
<td>9</td>
<td>2.78</td>
<td>1.92</td>
</tr>
<tr>
<td>Avoiding physical activity</td>
<td>11</td>
<td>2.73</td>
<td>1.79</td>
</tr>
<tr>
<td>Using a brace or splint</td>
<td>10</td>
<td>2.70</td>
<td>1.89</td>
</tr>
<tr>
<td>Taking anti-depressant medicine prescribed by a physician</td>
<td>11</td>
<td>2.45</td>
<td>2.07</td>
</tr>
<tr>
<td>Using biofeedback</td>
<td>12</td>
<td>2.36</td>
<td>1.50</td>
</tr>
<tr>
<td>Applying cold to painful area(s)</td>
<td>12</td>
<td>2.17</td>
<td>1.34</td>
</tr>
<tr>
<td>Using TENS</td>
<td>8</td>
<td>1.63</td>
<td>1.77</td>
</tr>
</tbody>
</table>
Table 12

Correlation of Pain Self-Management Methods with Certain Demographic Characteristics

<table>
<thead>
<tr>
<th>Method</th>
<th>Spearman’s Rank Order Correlation (r)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>r, p</td>
</tr>
<tr>
<td>Using methods to control stress.</td>
<td>-.316* .016</td>
</tr>
<tr>
<td>Using relaxation methods as meditation or</td>
<td>-.350** .007</td>
</tr>
<tr>
<td>guided imagery.</td>
<td></td>
</tr>
<tr>
<td>Massaging painful area(s).</td>
<td>-.268* .042</td>
</tr>
<tr>
<td>Taking medicine prescribed by a physician.</td>
<td>-.286* .029</td>
</tr>
<tr>
<td>Using positive self-talk.</td>
<td>-.270* .041</td>
</tr>
<tr>
<td>Using a brace or splint</td>
<td>.288* .028</td>
</tr>
</tbody>
</table>

Note. Listwise n = 58

* p < .05 (2 tailed)

** p < .01 (2 tailed)
Table 13

Correlation of Perceived Helpfulness of Pain Self-Management Methods with Demographic Characteristics.

<table>
<thead>
<tr>
<th>Method</th>
<th>Spearman's Rank Order Correlation (r_s)</th>
<th>Length of Time Had Arthritis Pain</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>r_s</td>
<td>p</td>
</tr>
<tr>
<td>Resting.</td>
<td>.484*</td>
<td>.026</td>
</tr>
<tr>
<td>Focusing on support of religious beliefs.</td>
<td>.439*</td>
<td>.047</td>
</tr>
<tr>
<td>Using methods to control stress.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taking medicine NOT prescribed by a physician.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Listwise n = 21

* p < .05 (2 tailed)

** p < .01 (2 tailed)
Table 14

Sample Description Regarding Present Pain Intensity (PPI) and Correlations Between Word Scale and VAS

<table>
<thead>
<tr>
<th>Pain Intensity</th>
<th>n</th>
<th>%</th>
<th>M</th>
<th>SD</th>
<th>r</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Intensity of Arthritis Pain Right Now</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Pain</td>
<td>7</td>
<td>7.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mild</td>
<td>31</td>
<td>34.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discomforting</td>
<td>34</td>
<td>37.8</td>
<td>1.74</td>
<td>.98</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distressing</td>
<td>15</td>
<td>16.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Horrible</td>
<td>2</td>
<td>2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excruciating</td>
<td>1</td>
<td>1.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Visual Analogue Reading</strong></td>
<td></td>
<td></td>
<td>2.67</td>
<td>1.86</td>
<td>.776</td>
<td>&lt;.01</td>
</tr>
<tr>
<td><strong>Correlation of Word Scale and VAS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Intensity of Arthritis Pain Most of the Time</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.735</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>No Pain</td>
<td>3</td>
<td>3.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mild</td>
<td>18</td>
<td>20.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discomforting</td>
<td>41</td>
<td>45.5</td>
<td>2.11</td>
<td>.94</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distressing</td>
<td>24</td>
<td>26.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Horrible</td>
<td>2</td>
<td>2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excruciating</td>
<td>2</td>
<td>2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Visual Analogue Reading</strong></td>
<td></td>
<td></td>
<td>3.12</td>
<td>1.76</td>
<td>.735</td>
<td>&lt;.01</td>
</tr>
<tr>
<td><strong>Correlation of Word Scale and VAS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX B

PMI
Please circle the number that best describes how often you use each method to relieve arthritis pain and how helpful you find that method to be:

<table>
<thead>
<tr>
<th>PAIN MANAGEMENT METHODS</th>
<th>HOW OFTEN DO YOU USE THE METHOD?</th>
<th>HOW HELPFUL IS THE METHOD?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Massaging the painful area(s).</td>
<td>1 2 3 4 5 6 (Never Use, Often Use)</td>
<td>1 2 3 4 5 6 (Not Helpful, Very Helpful)</td>
</tr>
<tr>
<td>2. Using methods which help to control stress.</td>
<td>1 2 3 4 5 6 (Never Use, Often Use)</td>
<td>1 2 3 4 5 6 (Not Helpful, Very Helpful)</td>
</tr>
<tr>
<td>3. Talking with individual persons who understand.</td>
<td>1 2 3 4 5 6 (Never Use, Often Use)</td>
<td>1 2 3 4 5 6 (Not Helpful, Very Helpful)</td>
</tr>
<tr>
<td>4. Resting.</td>
<td>1 2 3 4 5 6 (Never Use, Often Use)</td>
<td>1 2 3 4 5 6 (Not Helpful, Very Helpful)</td>
</tr>
<tr>
<td>5. Applying cold to painful area(s).</td>
<td>1 2 3 4 5 6 (Never Use, Often Use)</td>
<td>1 2 3 4 5 6 (Not Helpful, Very Helpful)</td>
</tr>
<tr>
<td>6. Using distracting techniques such as watching TV, reading, or working.</td>
<td>1 2 3 4 5 6 (Never Use, Often Use)</td>
<td>1 2 3 4 5 6 (Not Helpful, Very Helpful)</td>
</tr>
<tr>
<td>7. Using biofeedback by monitoring heart rate, blood pressure, or other physiologic measures</td>
<td>1 2 3 4 5 6 (Never Use, Often Use)</td>
<td>1 2 3 4 5 6 (Not Helpful, Very Helpful)</td>
</tr>
<tr>
<td>8. Using a heated pool, tub, or shower.</td>
<td>1 2 3 4 5 6 (Never Use, Often Use)</td>
<td>1 2 3 4 5 6 (Not Helpful, Very Helpful)</td>
</tr>
<tr>
<td>9. Taking medicine for pain not suggested or prescribed by a physician</td>
<td>1 2 3 4 5 6 (Never Use, Often Use)</td>
<td>1 2 3 4 5 6 (Not Helpful, Very Helpful)</td>
</tr>
</tbody>
</table>
10. Avoiding foods which seem to make the pain begin or become worse. | 1 2 3 4 5 6 | 1 2 3 4 5 6 |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Never Use</td>
<td>Often Use</td>
<td>Not Helpful Very Helpful</td>
</tr>
</tbody>
</table>

11. Participating in support groups. | 1 2 3 4 5 6 | 1 2 3 4 5 6 |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Never Use</td>
<td>Often Use</td>
<td>Not Helpful Very Helpful</td>
</tr>
</tbody>
</table>

12. Exercising. | 1 2 3 4 5 6 | 1 2 3 4 5 6 |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Never Use</td>
<td>Often Use</td>
<td>Not Helpful Very Helpful</td>
</tr>
</tbody>
</table>

13. Applying heat to painful area(s). | 1 2 3 4 5 6 | 1 2 3 4 5 6 |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Never Use</td>
<td>Often Use</td>
<td>Not Helpful Very Helpful</td>
</tr>
</tbody>
</table>

14. Taking anti-depressant medicine prescribed by a physician. | 1 2 3 4 5 6 | 1 2 3 4 5 6 |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Never Use</td>
<td>Often Use</td>
<td>Not Helpful Very Helpful</td>
</tr>
</tbody>
</table>

15. Using relaxation methods such as meditation or guided imagery. | 1 2 3 4 5 6 | 1 2 3 4 5 6 |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Never Use</td>
<td>Often Use</td>
<td>Not Helpful Very Helpful</td>
</tr>
</tbody>
</table>

16. Using transcutaneous electrical stimulation (TENS). | 1 2 3 4 5 6 | 1 2 3 4 5 6 |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Never Use</td>
<td>Often Use</td>
<td>Not Helpful Very Helpful</td>
</tr>
</tbody>
</table>

17. Supporting the affected area(s) using a brace or splint. | 1 2 3 4 5 6 | 1 2 3 4 5 6 |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Never Use</td>
<td>Often Use</td>
<td>Not Helpful Very Helpful</td>
</tr>
</tbody>
</table>

18. Taking medicine for pain suggested or prescribed by a physician. | 1 2 3 4 5 6 | 1 2 3 4 5 6 |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Never Use</td>
<td>Often Use</td>
<td>Not Helpful Very Helpful</td>
</tr>
</tbody>
</table>

19. Avoiding physical activity. | 1 2 3 4 5 6 | 1 2 3 4 5 6 |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Never Use</td>
<td>Often Use</td>
<td>Not Helpful Very Helpful</td>
</tr>
</tbody>
</table>

20. Using positive self-talk such as “I can...”. | 1 2 3 4 5 6 | 1 2 3 4 5 6 |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Never Use</td>
<td>Often Use</td>
<td>Not Helpful Very Helpful</td>
</tr>
</tbody>
</table>

21. Pacing activities, such as resting between activities | 1 2 3 4 5 6 | 1 2 3 4 5 6 |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Never Use</td>
<td>Often Use</td>
<td>Not Helpful Very Helpful</td>
</tr>
</tbody>
</table>

22. Focusing on the support offered by my personal religious beliefs. | 1 2 3 4 5 6 | 1 2 3 4 5 6 |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Never Use</td>
<td>Often Use</td>
<td>Not Helpful Very Helpful</td>
</tr>
</tbody>
</table>
APPENDIX C

PPI with VAS
PRESENT PAIN INTENSITY

1. Please check the number below that best indicates the intensity of your arthritis pain right now.

0  No pain
1  Mild
2  Discomforting
3  Distressing
4  Horrible
5  Excruciating

Mark an X on the line below at the point between “no pain” and “worst possible pain” that indicates how much arthritis pain you have right now.

No I ______________________________ I Worst
Pain Possible Pain

2. Please check the number below that best indicates the intensity of your arthritis pain most of the time.

0  No pain
1  Mild
2  Discomforting
3  Distressing
4  Horrible
5  Excruciating

Mark an X on the line below at the point between “no pain” and “worst possible pain” that indicates how much arthritis pain you have most of the time.

No I ______________________________ I Worst
Pain Possible Pain
APPENDIX D

Pain Self-Management Questions
PAIN SELF-MANAGEMENT QUESTIONS

1. Do you make conscious decisions to do something to relieve your arthritis pain? (Check one).
   ___ Yes  ___ Sometimes  ___ No

2. Do you try and evaluate new ways to relieve your arthritis pain? (Check one).
   ___ Yes  ___ Sometimes  ___ No

3. Is there a sequence of events you use when selecting an arthritis pain relief method (for example, if pain occurs you may do one thing, but if the pain changes or persists you do something else)? (Check one).
   ___ Yes  ___ Sometimes  ___ No

4. Do you choose a different arthritis pain relief method based upon the characteristics of the pain you are experiencing? (Check one).
   ___ Yes  ___ Sometimes  ___ No

   If yes, what influences your choice? (Check all that apply).
   ___ Severity of pain
   ___ Location of pain
   ___ How long the pain has been present
   ___ Other (Please specify _____________________________)

5. Do you feel that you have control over your life? (Check one).
   ___ Yes  ___ Sometimes  ___ No
(Pain Self-Management Questions)

6. How would you rate your overall ability to function when you are experiencing pain? (Please circle the number that best describes your ability to function).

0  1  2  3  4  5
Not well at all
Extremely well

7. How successfully are you able to manage your pain? (Please circle the number that best describes your success).

0  1  2  3  4  5
Not well at all
Extremely well

8. Considering all the ways that your pain affects you, how well are you doing? (Please circle the number that best describes how well you are doing).

0  1  2  3  4  5
Not well at all
Extremely well
APPENDIX E

Demographic Data Form
Demographic Data

Please complete the following information by checking what best describes you, or writing short answers where indicated:

Gender:

____ Male
____ Female

Age:

____ Years

Race:

____ Asian
____ African-American
____ Caucasian
____ Hispanic
____ Native American Indian
____ Other (Please specify ___

Type of arthritis you have:

____ Osteoarthritis (OA)
____ Rheumatoid Arthritis (RA)
____ Unknown type of arthritis

Are you disabled due to arthritis? __ Yes __ No

Approximately how long have you been experiencing arthritis pain?

____ Number of years

What activities are affected and limited by your arthritis? (Check all that apply)

____ Mobility (Walking, sitting or standing, using stairs)
____ Bathing (Getting into tub or shower)
____ Dressing (Closing zippers, buttons)
____ Using toilet (Sitting down or standing up)
____ Grooming (Combing hair, brushing teeth)
____ Writing, using telephone
____ Eating (Handling utensils, cutting food)
____ Other (Please specify)
(Demographic Data)

Are you experiencing pain NOW for some reason other than arthritis?
___ Yes  ___ No  If yes, what is the cause of your pain? ____________________

What type of medical insurance do you have? (Please check all that apply).

___ Medicare        ___ Medicare Supplement
___ Medicaid         ___ Private Insurance
___ HMO              ___ VA/Military

Household income last year:
___ Under $15,000
___ $15,000 - $29,999
___ $30,000 - $59,999
___ $60,000 - $89,999
___ over $90,000

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APPENDIX F

Body Picture Forms
On the forms below, please circle the names of all the joints that are the source of arthritis pain for you, either in the past or at the present time.

Front
- Shoulder
- Elbow
- Hip
- Knee
- Ankle
- Foot
- Toes

Back
- Shoulder
- Elbow
- Hip
- Knee
- Ankle
- Foot
- Toes

OTHER AREAS (Please specify)
APPENDIX G

Correspondence
April 27, 1998

Ms. Joan Rogers
1847 Indian Bend Drive
Henderson, NV 89014

Dear Joan:

It was nice to hear from you and to know that you are still interested in pain management. Certainly, I would be happy for you to use the Pain Management Inventory (PMI). As I indicated, six items seem to group together to represent pain modulation. One item, taking medicine for pain suggested or prescribed by a physician, seems to represent pain relief. I am using the terms “pain modulation” and “pain relief” as defined in the Advances in Nursing Science article (enclosed). I am also sending an abstract of the follow-up study that was presented at the Arthritis Health Professionals Association Meeting (reference of meeting also enclosed) in 1996.

I mentioned the one-item rating of the perceived success of pain management. It is as follows:

How successfully are you able to manage your pain? (Circle the number you select.)

1 2 3 4 5 6
Not well Very at all well

Best wishes as you continue your work.

Sincerely,

Gail C. Davis, RN, EdD
Professor
Dear Dr. Mezack,

Thank you for returning my phone call today. I am a graduate student in the School of Nursing Masters Degree Program at the University of Nevada, Las Vegas. I would like permission to use the McGill Pain Questionnaire (MPQ) to gather pain management information for my thesis. I am interested in the short form MPQ or maybe just the Present Pain Intensity Scale.

Will you please send me information about how to request permission to use the questionnaire and about the cost for its use?

Thank you for your help.

Sincerely,

Joan K. Rogers

June 15, 1998

Dr. Ronald Melzack
Department of Psychology
McGill University
1205 Dr. Penfield Avenue
Montreal, Quebec H3A 1B1
Canada

---

Dear Mr. Rogers,

It is a pleasure to give you permission to use the MPQ for your study.

With best wishes,

Ronald Melzack
5 May 1999

MS JOAN R. ROGERS & MARGARET LOUIS
DEPARTMENT OF NURSING
4505 S. MARYLAND PARKWAY
LAS VEGAS NV 89154

Dear Ms Rogers & Dr. Louis:

The Department of Nursing Human Subjects Rights Committee met and approved your proposal 'Self-management of chronic pain by patients with arthritis' with the following recommendations:

1. Under Benefits: add 'Although the direct benefits are limited the information gained may help health care providers understand pain management strategies persons with arthritis utilize for pain relief.'
2. Time to complete the questionnaire should be changed to 'about 30 minutes' based on the number of items in the data collection packet.

The next step is to take your proposal to Office of Sponsored Programs at UNLV for their approval before beginning further implementation of the project.

The Committee wishes you well in completing it.

If you make any major change in your project please notify the Committee.

Sincerely,

Susan Michael
Acting Chairperson
Human Subjects Rights Committee
Department of Nursing, UNLV

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DATE: June 11, 1999

TO: Joan K. Rogers
Department of Nursing
M/S 3018

FROM: Dr. William E. Schulze, Director
Office of Sponsored Programs (X1357)

RE: Status of Human Subject Protocol Entitled:
"Self-Management of Chronic Pain by Patients with Arthritis"
OSP #501s0699-050e

The protocol for the project referenced above has been reviewed by the Office of Sponsored Programs and it has been determined that it meets the criteria for exemption from full review by the UNLV human subjects Institutional Review Board. This protocol is approved for a period of one year from the date of this notification and work on the project may proceed.

Should the use of human subjects described in this protocol continue beyond a year from the date of this notification, it will be necessary to request an extension.

If you have any questions regarding this information, please contact Marsha Green in the Office of Sponsored Programs at 895-1357.

cc: M. Louis (NUR-3018)
OSP File
JUNE 24, 1999

JOAN K. ROGERS, RN, BSN, HAS MY PERMISSION TO ASK INDIVIDUALS IN MY OFFICE WAITING AREA TO PARTICIPATE IN HER STUDY, SELF-MANAGEMENT OF CHRONIC PAIN BY PATIENTS WITH ARTHRITIS.

PARTICIPATION BY PATIENTS IS VOLUNTARY, ANONYMOUS, AND INVOLVES THE COMPLETION OF A PENCIL AND PAPER QUESTIONNAIRE. THERE IS NO FINANCIAL COMPENSATION FOR THOSE PERSONS WHO AGREE TO PARTICIPATE.

CHRISTIANNE M. YUNG, MD

98 E. Lake Mead Drive, Suite 102, Henderson, NV 89015
("02) 566-1377  Fax ("02) 566-9216

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June 08, 1999

Marsha Green  
Office of Sponsored Programs  
UNLV, FDH, Room 304  
4505 S. Maryland Parkway  
Las Vegas, NV 89154

Dear Ms. Green,

Joan Rogers, RN, BSN, has permission to ask individuals in the waiting area of the SMA Endocrinology Clinic to participate in her study, SELF-MANAGEMENT OF CHRONIC PAIN BY PATIENTS WITH ARTHRITIS.

Participation is voluntary, anonymous, and involves the completion of a pencil and paper questionnaire. There is no financial compensation for those persons who agree to participate.

James Snyder, M. D.  
Chief, Endocrinology and Medical Specialty  
Director, Clinical Research and Process Improvement  
Southwest Medical Associates, Inc.
June 01, 1999

Joan K. Rogers, RN, BSN, has permission to ask individuals attending Arthritis Foundation sponsored support group meetings and water and land based exercise programs to participate in her study, SELF-MANAGEMENT OF CHRONIC PAIN BY PATIENTS WITH ARTHRITIS.

Participation is voluntary, anonymous, and involves the completion of a pencil and paper questionnaire. There is no financial compensation for those persons who agree to participate.

David Witte, Program Director
Arthritis Foundation
2660 S. Rainbow Bl., Ste. B-102
Las Vegas, NV 89146

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Dear Ms. Rogers:

Re: Your January 6, 1999 request for permission to reuse up to a maximum of 5 figures and/or 300 words in print media only from *Sand\'s A Guide To Arthritis Home Health Care*, in your forthcoming work.

1. Permission is granted for this use, except that you must obtain authorization from the original source to use any material that appears in our work with credit to another source.

2. Permission use is limited to the original edition of your forthcoming work described in your letter and does not extend to future editions of your work. In addition, permission does not include the right to grant others permission to photocopy or otherwise reproduce this material except for versions made by non-profit organizations for use by blind or physically handicapped persons.

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6. If your published work contains more than 5 figures and/or 300 words from our title, this permission shall be void.

Sincerely,

Christopher Shirdian
Permissions Department
John Wiley & Sons, Inc.
Thank you for your recent e-mail requesting permission.

I can confirm that we would be happy to grant you permission to reproduce figure 1 from pp236-243 from Vol 245 of the Journal of Advanced Nursing, subject to the full acknowledgments of source...

Regards
Tracey Davies
Senior Permissions Assistant

> -----Original Message-----
> From: Griselda Campbell
> Sent: 01 January 2000 08:37
> To: Tracey Davies
> Cc: 'jaykrogers@worldnet.att.net'
> Subject: FW: permission information
> 
> HI Tracey
> 
> Would you respond re. this permission request.
> 
> Thanks,
> 
> Griselda.
> 
> -----Original Message-----
> From: jaykrogers@att.net [SMTP: jaykrogers@att.net]
> Sent: 04 January 2000 20:38
> To: griselda.campbell1@blacksci.co.uk
> Subject: permission information
> 
> I am a student in the graduate college of the university of nevada las vegas (UNLV), las vegas, nevada, usa, and am currently completing requirements for my master's degree in nursing. In the final published copy of my thesis I would like to use "Figure 1 Conceptual model of the pain management process" pictured on page 238 of the following cited article: Davis, G.C. & Atwood, J.R. (1996). The development of the pain management inventory for patients with arthritis. Journal of Advanced Nursing, 24, 236-243. Would you be so kind as to tell me what procedure I should follow to request permission for this? I hope to obtain permission by January 18, 2000. Thank you for your assistance.
> 
> e-mail:jaykrogers@worldnet.att.net.
APPENDIX H

Explanation of Study and Informed Consent Letter
INFORMED CONSENT FOR

SELF-MANAGEMENT OF CHRONIC PAIN BY PATIENTS WITH ARTHRITIS

I am a graduate student at the University of Nevada, Las Vegas (UNLV), and I am presently pursuing a Master of Science Degree in Nursing. As part of the requirements for my degree I am conducting a research study. The study is designed to identify pain management strategies and methods that patients with osteoarthritis (OA) or rheumatoid arthritis (RA) are currently using to help relieve their arthritis pain. It will also determine how helpful the methods are in relieving or reducing pain. The knowledge gained from this study may help nurses better understand pain management methods that help relieve the chronic pain of patients with arthritis.

Persons with osteoarthritis or rheumatoid arthritis are being asked to complete a questionnaire about arthritis pain and a demographic data form. Upon completion of the questionnaire you will be asked to place it in the attached envelope and return it to the researcher. It will take approximately 30 minutes to complete the questionnaire.

Participation is voluntary and you do not have to participate in the study. You can change your mind at any time after beginning to complete a questionnaire. Names are not needed on the questionnaire and all information obtained will remain confidential. The information received will be reported only in aggregate form in the study results.

There is no financial compensation for participating in the study and there are no anticipated risks to anyone who participates. Your completion of the enclosed questionnaire and demographic data form indicate your consent to participate in the study.

If you have questions about the study, you may contact me, or Dr. Margaret Louis, Associate Professor of Nursing, at the Department of Nursing. 895-3360. If you have questions regarding the rights of research subjects, you may contact the Office of Sponsored Programs. 895-1357, at UNLV.

Thank you.

Joan K. Rogers, RN, BSN
Department of Nursing
University of Nevada, Las Vegas
4505 S Maryland Parkway
Las Vegas, NV 89154
Phone (702) 895-3360

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Figure 1 Conceptual model of the pain management process.

Vita

Graduate College
University of Nevada, Las Vegas

Joan K. Rogers

Local Address:
UNLV Department of Nursing
4505 Maryland Parkway
Las Vegas, Nevada 89154-3018

Degrees:
Bachelor of Science, Nursing 1971
Virginia Commonwealth University
Medical College of Virginia

Thesis Title: Self-Management of Chronic Pain by Patients With Arthritis

Thesis Examination Committee:
Chairperson, Margaret Louis, Ph.D.
Committee Member, Susan Kowalski, Ph.D.
Committee Member, Sue Witt, M.S.N.
Graduate Faculty Representative, Clifford McClain, Ph.D.