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Gender Perceptions in Rheumatic Disease: A Secondary Analysis

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GENDER PERCEPTIONS IN RHEUMATIC DISEASE: A SECONDARY ANALYSIS

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ABSTRACT

Problem: Rheumatoid arthritis affects approximately 1.3 million people in the United States. A chronic disease with a variable course leaves affected individuals in a state of uncertainty. Many individuals experience joint and muscle pain, a major symptom of the disease. Current literature provides varying information of gender perceptions and management of joint and muscle pain in rheumatic diseases.

Purpose: The purpose of this secondary analysis was to explore (1) gender perception of seriousness of joint and muscle pain in rheumatoid arthritis, (2) gender perception of joint and muscle pain interference with daily life, (3) gender perception of controllability of joint and muscle pain, (4) gender perception of joint and muscle pain cause, (5) gender perception of joint and muscle pain management, (6) gender perception of the effectiveness of joint and muscle pain management strategies, and (7) demographic variables influencing differences between men and women's symptom representation of pain.

Design: Secondary analysis utilizing a cross-sectional design to examine participants representations of joint and muscle pain.

Sample: Two hundred, forty participants experiencing rheumatic illness participated in the primary study. One hundred, twenty-one subjects were included in the secondary analysis if participants reported the presence of joint and/or muscle pain on at least one day in the first week of data collection.

Measures: Scales utilized included a symptom diary and a medical history and demographic form.

Analysis: Means, medians, mode, ranges, standard deviation, t-tests and chi-squared tests were utilized in the secondary analysis.

Results: No statistically significant relationships between gender and perception of rheumatic disease were discovered.

Conclusions: Women and men experience joint and muscle pain due to rheumatic disease similarly.

Implications: Chronic disease perception and management can vary among individuals. Although the current research does not find significant differences between genders with respect to symptom perception and management, health care providers should assess a patient's symptom representation and then develop individualized patient plans of care as many factors can influence overall disease management.

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CHAPTER I

INTRODUCTION TO THE PROBLEM

Rheumatoid arthritis (RA), an autoimmune disease causing inflammation of joints, affects approximately 1.3 million people (1% of the adult population) in the United States (Arthritis Foundation, 2011). According to the Arthritis Foundation (2011), the disease can appear at any age, but typically presents in women between the ages of 30 and 60 and later in life for men. Women are affected approximately three times more often than men with 70% of RA sufferers being female (Arthritis Foundation, 2011). The cause of RA is unknown, however researchers agree that genetics and environmental factors play a role in the onset of disease (Arthritis Foundation, 2011). The clinical course of RA is highly variable and Leeb (1998) states, "Rheumatoid arthritis is anything but a benign disease, potentially leading to disability, chronic pain, morbidity, and even early death" (p. 315).

The presentation of rheumatoid arthritis can include the following symptoms: bilateral warmth of joints, decreased range of motion, morning stiffness, inflammation, swelling, painful joints, fatigue, low-grade fever, decreased appetite, and rheumatoid nodules over affected areas (Arthritis Foundation, 2011; Leeb, 1998). In RA, the individual's immune system attacks joint spaces, specifically the synovial space, or the space in between the joints. This results in fluid accumulation leading to joint deformity and disability due to damaged cartilage, tendons and ligaments (Arthritis Foundation, 2011). No current cure exists for rheumatoid arthritis; however, many forms of treatment are available such as medications (NSAIDS, corticosteroids, disease-modifying antirheumatic drugs, and biologic agents), exercise, diet, etc… (Arthritis Foundation, 2011). Early, effective disease management can slow the progression of rheumatoid arthritis and in a few cases, has even placed the disease into remission (Arthritis Foundation, 2011). The

existing challenge; however, is the development of an effective, individualized disease management plan.

In this chapter, the problem statement, purpose of the research, and research questions are identified in order to better understand the individual management of rheumatoid arthritis.

PROBLEM STATEMENT

Rheumatoid arthritis is a chronic condition with varying degrees of severity. Upon initial diagnosis, individuals are left with a certain level of uncertainty in regard to their future with a chronic, possibly disabling illness. Although the female to male ratio of RA is 3:1, the individual experience of RA differs between patients with both males and females responding differently to the clinical manifestations found throughout the disease process. Examination of gender differences in the clinical management of joint and muscle pain in RA is of particular interest to the researcher. It is well known that individuals of the same gender often respond to situations in similar fashion compared to individuals of the opposite gender. Therefore, the researcher questions whether there are differences in perceptions between genders in RA patients.

Joint and muscle pain is a common complaint among sufferers of rheumatoid arthritis. Pain varies significantly between individuals with some reporting debilitating pain while others noting pain as simply an annoyance. One may question whether individual perception of joint and muscle pain in RA plays a role in actual severity of the chronic condition. Could patient perception of the seriousness of joint and muscle pain affect one's ability to manage the perceived symptom? Are specific groups of individuals more likely to perceive the symptom of joint and muscle pain as greater than others? Throughout history, men have been considered to be stronger with increased endurance and strength. Women, on the other hand, have been viewed as weaker than the opposite gender throughout history. Based on these assumptions, one may

question whether men perceive themselves as stronger and are therefore able to endure increased muscle pain and joint pain while dealing with their chronic illness whereas women experience greater levels of pain.

Clinical manifestations of rheumatoid arthritis have been found to affect activities of daily living (ADL) in individuals suffering from this chronic illness. Joint and muscle pain, depending on severity, have been shown to decrease one's ability to complete many functions previously performed. Changes in functional ability are difficult to accept and many RA sufferers struggle with this both physically and emotionally. The question remains, however, whether patient perception of individual ability to perform activities of daily living despite joint and muscle pain actually influences true functional ability. Additionally, different groups, specifically genders, may consider interference of daily activities on different levels. Arrays of medical professionals work with individuals suffering RA to improve function or at least maintain current functional ability. Understanding individual perceptions of interferences in typical daily activities may assist providers in the development of individualized treatment plans, therefore providing an increasingly effective form of disease management for patients.

In an attempt to manage joint and muscle pain in RA, patient perception of symptom controllability has the ability to affect overall outcomes. Developing a full understanding of patient perception of symptom cause and course of treatment greatly plays a role in effective symptom management. Providers must give excellent education and provide credible resources for further exploration of disease understanding. Patient understanding may differ among separate groups of individuals and providers must approach the patient on an individual level, providing individualized guidance of disease understanding and management.

Across the United States, RA patients utilize many therapies for joint and muscle pain. Medications, diets, exercise programs, and holistic approaches are all used to manage symptoms suffered by RA patients. Specific interest lies in therapies chosen by each gender and the perceived effectiveness of chosen treatments. Perceived effectiveness of certain treatments by differing genders may assist medical providers in guiding patients toward effective RA management strategies.

PRIMARY STUDY

The current study is a secondary analysis of an existing database created by Brauer (2001) for the research study entitled *The Influence of Affect on Coping with Symptoms in Chronic Illness.* Within the database, 220 study participants with chronic rheumatic diseases (i.e. rheumatoid arthritis, systemic lupus, and osteoarthritis) described personal characteristics and symptom experiences of their disease. Of the 220 participants, 200 individuals completed the study and 177 finished the entire data set. "The sample for the original study was selected sequentially from outpatient clinic rosters for a longitudinal (3 week) study of symptom management" (Droegemueller, 2008, p. 21). All study participants were English-speaking adults from two mid-western rheumatology clinics in large teaching medical centers. Original data was collected via a health diary, a multidimensional personality questionnaire (MPQ), and a demographic form including patient gender, age, marital status, income, and education level. The current study does not utilize the MPQ. Data for the secondary analysis was obtained from Brauer's (2001) initial research through an SPSS file.

PURPOSE OF SECONDARY ANALYSIS

The purpose of this secondary analysis was to explore (1) gender perception of seriousness of joint and muscle pain in rheumatoid arthritis, (2) gender perception of joint and

muscle pain interference with daily life, (3) gender perception of controllability of joint and muscle pain, (4) gender perception of joint and muscle pain cause, (5) gender perception of joint and muscle pain management, (6) gender perception of the effectiveness of joint and muscle pain management strategies, and (7) demographic variables influencing differences between men and women's symptom representation of pain.

RESEARCH QUESTIONS

1. What are the differences in gender perception of seriousness of joint and muscle pain in RA?
2. What are the differences in gender perception of symptom (joint and muscle pain) interference in typical daily activities?
3. What are the differences in gender perception of joint and muscle pain controllability?
4. What are the differences in gender perception of joint and muscle pain cause?
5. What forms of symptom management were utilized by each gender for joint and muscle pain?
6. What are the differences in gender perception of disease management effectiveness when considering treatments for joint and muscle pain?
7. Which other demographic variables influence the differences between men and women's symptom representation of pain?

SUMMARY

Rheumatoid arthritis affects 1% of the United States population. Individuals suffering from RA are left with uncertainty due to the widespread affects of this chronic illness. Individual perceptions of the illness in regard to seriousness of symptoms, interference in daily living, symptom controllability and cause, treatment options and treatment effectiveness vary greatly

among individuals. The research is lacking in terms of gender responses to RA and ability to manage symptoms associated with RA. The current research addressed these questions in order to fully understand gender perceptions of rheumatoid arthritis and their effects on the course of disease.

CHAPTER II

REVIEW OF LITERATURE

INTRODUCTION

This chapter provides a review of literature of the following concepts relevant to this secondary analysis including (1) physiological factors: the physiology of pain and gender; (2) situational factors: social environment and physical environment; and (3) psychological factors: reaction to disease, perception of illness, and perception of disease management. Leventhal's common sense model of self-regulation of health and illness was the conceptual framework used to guide this secondary analysis.

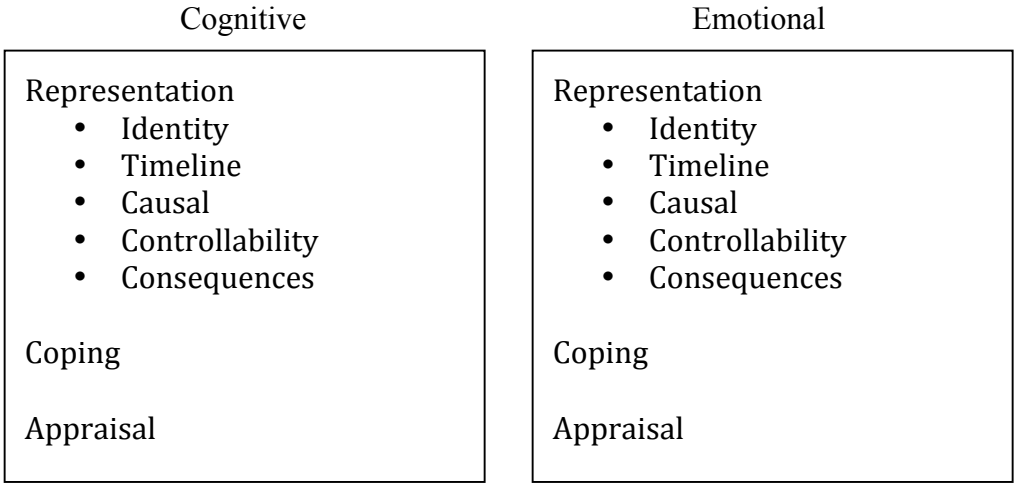
CONCEPTUAL FRAMEWORK

Common Sense Model of Self-Regulation of Health and Illness

Leventhal's common sense model of self-regulation of health and illness examines patient perception of disease and symptoms associated with illness. Disease, which can be acute or chronic in nature, greatly impacts patient quality of life. Patients must become active participants in the regulation and management of symptoms through decision-making, problem solving, researching, and evaluating responsiveness and effectiveness of treatments. Leventhal's model of self-regulation, shown in figure 1, is comprised of two parallel processes or levels: cognitive and emotional, which are both found to influence symptom management. Within each level lie three categories: representation, coping, and appraisal. "According to the model, external and internal stimuli evoke illness representations when they come into contact with and are decoded by schematic structures of prior health and illness experiences" (Diefenbach, 1996, p. 20). These representations include identity of the illness, a timeline for length of disease, the cause or stimuli responsible for the illness, the perceived controllability of the disease and

associated symptoms, and the consequences associated with the identified illness. The coping category includes individualized forms of coping while the appraisal stage evaluates management and coping with the option of new treatment modalities.

Figure 1: Leventhal Self-Regulation Model



Conceptual Framework Significance

According to Leventhal, many levels of the individual can play into patient perception of symptom management. Individual history, the somatic self, personality traits, social experiences, culture, situational factors, etc… influence the cognitive and emotional representation, coping, and appraisal during the self-regulation process of illness. Leventhal's theory can be applied to individuals suffering rheumatoid arthritis in the management of joint and muscle pain. As cited by Droegemueller (2008), "as Leventhal maintains, perceptual processes determine how symptoms are experienced" (p. 20). These perceptions greatly affect physical, situation and psychological factors in RA sufferers.

PHYSIOLOGICAL FACTORS

Physiology of Pain

Pain, acute or chronic, appears to be the most common complaint among individuals presenting for medical services (Safdar, 2009; Taber's Cyclopedic Medical Dictionary, 2001). An unpleasant sensory and emotional encounter, pain is subjective and experienced on an individualized level.

> "Several factors influence the experience of pain. Among these are the nature of the injury or illness causing the symptom; the physical and emotional health of the patient; the acuity or chronicity of the symptom; the social milieu and/or cultural upbringing of the patient; neurochemistry; memory; personality; and other features" (Taber's Cyclopedic Medical Dictionary, 2001, p. 1566).

Acute pain, often described as immediate, lasting no longer than 3 months, is often short-lived, and managed more efficiently. Chronic pain is characterized as pain lasting for greater than 3 months and may be more difficult to control.

Rheumatoid arthritis, a chronic systemic inflammatory joint disorder specifically affecting the synovial joints, is progressive in nature (Leeb, 1998; Dunphy, 2007; Heinegard, 2003; Hornberg, 2007). Chronic pain is a common complaint of individuals suffering from this destructive disease often causing disability, morbidity, and death. A disorder of synovial joints and connective tissues, inflammatory mechanisms are a major influence in the course of the illness. The release of pro-inflammatory mediators, cytokines and proteinase are the primary cause of synovial joint destruction.

The synovium is a thin lining serving as a source of nutrients for cartilage, producing joint lubricants and developing the structural framework of the synovial interstitum

(http://www.hopkins-arthritis.org/arthritis-info/rheumatoid-arthritis/rheum_clin_path.html). Normal synovial tissue is composed of a layer approximately 1-3 cells thick; however in RA, this lining hypertrophies, becoming 8-10 cells thick. As inflammation occurs, cartilage, bone and the synovial cavity are greatly affected. Cartilage, which typically absorbs impact and stress, becomes impaired with RA. Resilience to impact and stress progressively declines, leading to weakness and pain. Bone erodes as the synovium invades spaces causing increased pain, weakness, and potential for fractures/injuries.

Impaired joint and muscle function is often witnessed in the early stages of rheumatoid arthritis (RA) (Hornberg, 2007). "Impaired muscle function might be explained by pain, reflex inhibition, muscle atrophy, limited joint motion, myopathy, medication and psychological factors. Pain, and impairment of joint and muscle function also manifest as a deterioration of balance and co-ordination" (Hornberg, 2007, p. 144). In a study by Hornberg *et al* (2007), 66 patients with suspected RA were examined in regard to joint and muscle function over a two-year period. Significant results indicated impairment of joint and muscle function in the first 2 years of early RA disease. Impaired joint and muscle function leads to increased pain. Progressive in nature, RA leads to severe chronic pain due to debilitating breakdown of cartilage and bone, thus affecting joint and muscle function as illustrated in the Hornberg (2007) study.

Gender

Gender has been found to play a role in the early initiation of medical care for pain, management of pain, and long-term effects of pain. In a recent study by Safdar *et al* (2009), patient gender was examined in terms of pain management in the emergency room. A multicenter, prospective, cohort study was performed with a total of 17 ED sites. Findings indicated that females seek medical care sooner than males, females are treated with analgesics

more frequently than males, and males are less likely to receive opioids for pain management when compared to females. Interestingly, researchers state "findings may be due to the fact that when experiencing severe pain, women are more willing and are better able to fully describe their pain sensations while males tend toward stoicism in similar situations" (Safdar, 2009, p. 370). Researchers also note decreased pain thresholds and pain tolerance in women compared to their male counterparts. "For chronic pain syndromes, women exhibit more sensitivity to pain than men" (Safdar, 2009, p. 370). In another study by Stenberg and Ahlgren (2010), researchers examined gender perspectives on physiotherapy treatments in patients experiencing neck and back pain. Research findings state that women are more likely than men to complain of musculoskeletal pain, seek medical care for their pain, take sick leave, and claim greater disability. In another study examining gender bias in the treatment of neck pain, 239 patients completed surveys on management of chronic neck pain (Hamberg, 2002). Hamberg (2002) concluded that medical providers assessing neck pain were more likely to send men for laboratory testing while women were referred to a physiotherapist and orthopedist and then provided with a prescription for analgesics. "In patients with disabling (neck) pain, women were more often found to be treated with drugs, physical therapy, acupuncture, ergonomics, psychosomatic treatment, information and relaxation therapy, whereas men more often had surgery and joint manipulation" (Stenberg, 2010, p. 35). In a study examining gender presentation and management of low back pain, Chenot and colleagues (2008) followed 1342 participants (58% female) for 12 months, with each individual participating in 3 standardized interviews over the 12-month period. Chenot (2008) found that women tend to have lower functional capacity than men in addition to depressive symptoms secondary to pain. "Findings confirmed that woman are more severely affected by low back pain and have a worse prognosis"

(Chenot, 2008, p. 582). In a study by Chiou (2009), researchers examined disability in Taiwanese arthritic patients. Results found the following:

> "The study found that 31-46% of the total variance of disability was explained by age, gender, marriage, joint pain score, diagnosis, disease activity, depression and pain management. The results indicated that higher disability was explained by older age, female, unmarried, diagnosed with RA, more joint pain, more disease activity, more depression and more use of pain management strategies in arthritic patients." (p. 2213).

Females have been found to have higher muscle endurance capacity (pre-menopausal) than men. According to Heneghan's (2005) study examining gender and skeletal muscle endurance capacity, "complex differences in muscle metabolism during endurance exercise, with women preferentially utilizing oxidative processes of muscle metabolism (aerobic) compared to men (who rely more on glycolytic anaerobic processes) have also been proposed to give females a fatigue-resistant advantage" (p. 175).

Due to the greater ratio of RA in women compared to men, decreased health related quality of life is more prevalent in women. Many studies note that within the general population of RA patients, there is no difference in the level of impairment between genders (Eberhardt, 1995; Hakala, 1996; Kvien, 2006). Hootman (2002) states "women with arthritis averaged 5 more unhealthy days per month than women without arthritis (9.2 vs 4.4 days per month), as did men (7.7 vs. 3.1 days per month)" (p. 410). Yet, other studies find women to be more affected physically than men (Guillemin, 1994; Hootman, 2002; Smedstad, 1996; Young, 2000). Hootman *et al* (2002) examined burdens and impacts on women suffering from arthritis. Results indicted arthritis is the most common chronic condition in women and the most frequent cause of

disability (Hootman, 2002, p. 408). Hornberg (2007) found "men had a higher degree of impairment compared with women during the first 24 months" (p. 148). Overall arthritis pain affects ability to perform work, which leads to disability, a common finding in women suffering from RA.

SITUATIONAL FACTORS

Social Environment

A female subject in a study examining experiences of living with chronic illness stated, "Living with illness meant being different from 'others'. It was not 'normal' to be ill. These feelings of being different corrode self-esteem and contribute to a heightened feeling of insecurity and vulnerability" (Kralik, 2002, p. 149). Upon diagnosis of chronic illness, many individuals describe a world of social withdrawal and heightened awareness of imperfections or undesirable symptoms of disease. Often times, individuals of differing genders face separate concerns when facing their social environment in the context of their chronic disease. In terms of individuals suffering from RA, women tend to be more concerned with deformities and concerns of inability to perform activities of daily living. Kralik (2002) states "women described feeling out of touch with their bodies and developing a heightened awareness of the damaged body part(s)" (p. 149). Men appear to worry about inabilities to perform society's defined masculine tasks due to pain or loss of function.

Chronic illness quickly embraces both physical and emotional disabilities. Stress becomes an aggravating factor in chronic illness, often changing perception of severity of illness and symptoms. In a study evaluating associations between stress and illness perception, findings showed that "Higher levels of life stress were associated with perceptions of worst consequences and less control over the illness. Life conditions possibly put a greater burden on patients and, as

a result, they evaluate and impact of the illness as more severe, and control over it as less feasible" (Karademas, 2009, p. 410).

Physical Environment

The ratio of women to men affected by rheumatoid arthritis is 2:1 to 3:1 (Dunphy, 2007; Hornberg, 2007; Leeb, 1998). Those affected suffer decreased physical function, which greatly affects overall quality of life. In a study conducted by Slatkowski-Christensen (2009), health status and pain were compared between female patients with rheumatoid arthritis and osteoarthritis. Findings indicated "RA patients have a considerable reduction in health related quality of life compared to healthy controls and population norms" (Slatkowski-Christensen, 2009, p. 345). Due to the greater ratio of RA in women compared to men, decreased health related quality of life may be more prevalent in women compared to their male counterparts.

Performance of activities of daily living decreases slowly with the progression of rheumatoid arthritis. Leeb (1998) notes,

> "60-70% of rheumatoid arthritis patients between 18 and 65 years of age at the time of disease onset are expected to be disabled and unemployed within 5-20 years. Indeed, a high degree of functional impairment may even occur within the first 5 years of the disease" (p. 316).

Patients become less independent and require increased assistance in completing previously full functioning roles. As their physical environment changes, patients are required to adapt regardless of willingness to acclimate. Not only does physical function change, but emotional distress can also become readily apparent in these patients. Overall life expectancy in patients with RA depends greatly on physical functioning in addition to emotional health.

PSYCHOLOGICAL FACTORS

Reaction to Disease

Chronic pain affects the individual physically, psychologically, and spiritually. Initial diagnosis of chronic disease influences patients on an individualized level and can greatly impact future management, treatment effectiveness and patient satisfaction of symptom control. Qualitative research by Kralik (2002) examining ordinariness when living with chronic illness, revealed a chronological guide for maneuvering through the initial diagnosis and future management of chronic disease. Women are initially struck with turmoil, grief and distress upon diagnosis of chronic disease while men are left with feelings of dread, anger and denial; an extraordinary phase depicted by Kralik (2002). Moving from the extraordinary phase toward the ordinary phase involves the acceptance and tolerance of chronic illness in daily life (Kralik, 2002, p. 146). Throughout the ordinary phase, patients have incorporated illness into their everyday life. With the new onset of symptoms or the worsening of chronic illness, individual stability is threatened and may cause patients to retreat back toward the extraordinary phase until fully able to embrace and accept the progression of their illness.

According to Slatkowsky-Christensen (2009), "RA patients have a considerable reduction of health-related quality of life compared to healthy controls and population norms" (p. 345). Due to high levels of chronicity of disability in this population, reaction to disease may play a large role in overall effectiveness of management. Health care providers must become tuned in to patients reactions to disease and then provide appropriate education and insight into patient management plans.

> "It is the clinician's responsibility to find out what the patient wants in order to help them find the right information and to support them in the decision-making process;

> if the physician disregards the patient's understanding of the disease, their compliance with the chosen therapy may be at risk" (Linder *et al*, 2009, p. 329).

Management of RA is difficult for patients suffering this particular chronic illness. The provider may assist by providing an individualized plan of care in order to increase patient compliance and willingness to effectively treat their chronic disease. In a study by Bussing *et al* (2010), adaptive coping strategies were examined in individuals suffering from chronic pain conditions. Researchers state "To restore a sense of self-control over pain (and thus congruence with the situation), and the conviction that one is not necessarily disabled by disease, is a major task in patient care. In the context of health services research, apart from effective pain management, a comprehensive approach is needed which enhances the psycho-spiritual well-being of patients" (p. 1). Chronic pain affects the individual physically, psychologically, and spiritually. Developing an emotional management plan in addition to a medical management plan is essential when working with individuals suffering from chronic pain. Bussing *et al* (2010), examined 100 individuals suffering chronic pain conditions. Participants were asked to complete a questionnaire describing adaptive coping strategies such as the following: trust in divine help; trust in medical help; search for information and alternative help; conscious way of living; positive attitudes; reappraisal illness as chance; and escape. Results showed that women were more likely to participate in all methods of adaptation with the exception of trusting in medical help when coping with chronic pain. The researchers state,

> "Apart from effective pain management, a comprehensive approach is needed which enhances the psycho-spiritual well-being, (i.e. self-awareness, coping and adjusting effectively with stress, relationships, sense of faith, sense of empowerment and

confidence, and living with meaning and hope. Also changing negative illness interpretations and depressive or avoidance coping by means of an intervention and encouraging social support by means of patient support groups may at least improve quality of life" (Bussing et al, 2010, p. 8).

Perception of Illness

Numerous individuals perceive illness, a state of bodily disequilibrium, differently. Illness, defined by Taber's Cyclopedic Medical Dictionary (2001) is "sickness, disease or ailment" (p. 1067). Perception is defined as "the awareness of objects or consciousness. The elaboration of a sensory impression; the ideational association of modifying, defining, and usually completing the primary impression or stimulus" (Taber's Cyclopedic Medical Dictionary, 2001, p. 1623). Opinions related to disease cause, consequence, management, duration, and curability varies based on gender, age, education, and life experiences. These patient and family perceptions impact overall quality and quantity of life, thus dictating the course an illness plays on the suffering individual. Therefore, patient perception of illness has the ability to command curability of a state of disequilibrium.

Research indicates that patient perception of illness influences treatment adherence, which inadvertently affects overall health outcomes. Kaptein *et al* (2008) completed a literature review of illness perceptions and COPD. Results indicated a strong correlation between illness perceptions and numerous health outcomes in individuals suffering from COPD. Kaptein *et al* (2008) states, "The results of the review indicate that illness perceptions are associated with various categories of outcomes, i.e., functional status and disability, psychological outcomes (i.e., depression, anxiety), and quality of life" (p. 626). In another study conducted by Scharloo *et al* (2007), 171 individuals suffering from COPD were asked to complete questionnaires

regarding illness perceptions. Findings indicated that overall patient perceptions of illness, regardless of age or severity, largely determined quality of life. "Fewer perceived symptoms, less perceived consequences, a less strong emotional response to illness, and less belief in psychological causes for the illness were consistently associated with better functioning" (Scharloo *et al*, 2007, p. 577).

Kaptein *et al* (2008) recommended "the application of cognitively behaviorally inspired programs where illness perceptions are the core targets of the intervention" (p. 627). Questions identified by Kaptein *et al* (2008) may be posed to patients by providers:

1. What do you think is wrong? (Identify)
2. What do you think will happen in the future? (Consequences)
3. What do you think caused your [illness]? (Cause)
4. How do you think your treatment will affect your [illness]? (Control)
5. How long do you think your [illness] will last? (Timeline)
6. What concerns about your condition do you have? (Emotions/Worry)

Recognition and assessment of patient perceptions i.e., cause, consequence, management, duration, curability, etc… provide moments for educational correction, which may alleviate fears/concerns associated with misunderstanding of illness education.

> "Atkins *et al* 1984, with notable prescience, applied this format already in 1984, with impressive results: Maladaptive illness perceptions ('I can't walk very far without getting short of breath, so what's the use?') were elicited, addressed and changed ('this walking is uncomfortable, but I can handle it. Soon I'll be able to walk farther'), which led to significant improvements in exercise capacity and quality of well-being" (Kaptein *et al*, 2008, p. 627).

Perception of Disease Management

Patient perception of disease management varies among individuals. Thoughts of incomprehensibility, incurability, uncontrollability may control the thoughts and emotions of one individual while optimism, a sense of curability and controllability control the thoughts of another. Patient perception of symptom management plays a psychological role in which treatment consideration and adherence control the management of chronic illness, thus providing an outcome unconsciously determined by the patient. In a study examining perception of disease in individuals suffering from psoriasis, findings indicated that individuals suffering from chronic psoriasis are likely to develop ambiguous attitudes as opposed to those with mild outbreaks (Linder *et al*, 2009, p. 328). "Individuals suffering with a longstanding diagnosis of psoriasis express interest in finding a solution, whatever it may be, but on the other hand, they express some sort of resignation and acceptance of the disease, which has become part of their everyday life" (Linder *et al*, 2009, p. 328). Researchers found "Patients who are continually updated with new information and on the availability of new treatments for psoriasis will be less likely to be affected by feelings of unpredictability and incurability" (Linder *et al*, 2009, p. 328). Therefore, continuous education assists in patient perception of symptom management of chronic illness.

SUMMARY

In research conducted by Brauer (2001), individuals suffering symptoms associated with rheumatoid arthritis were examined. In the current study, an analysis of individuals suffering joint and muscle pain was completed, specifically comparing gender roles in the management of muscle and joint pain. Based on a review of literature the researcher hypothesizes that gender plays a role in the management and controllability of muscle and joint pain in RA patients.

CHAPTER III

RESEARCH METHODS AND DESIGN

A secondary analysis of Brauer's (2001) data exploring symptom representation among persons living with chronic rheumatic diseases was conducted. The purpose of that original study was to examine the influence of temperament (affective and behavioral dispositions) on the management of multiple symptoms over time. The sample included 240 participants selected sequentially from outpatient clinic rosters by a research nurse. All participants had been diagnosed with either rheumatoid arthritis or systemic lupus; some participants had other comorbidities as well. Data was collected via a semi-structured daily symptom diary and self-report of medical and demographic information.

DESIGN

This secondary analysis used a cross-sectional design to examine participants' representations of joint and muscle pain. Data consisted of self-reported perceptions of symptom identity (label or name), perceived seriousness, interference in daily activities, controllability, perceived cause, management strategies and perceived effectiveness of those strategies on a daily basis. That is, the perceptions were reported concurrently with the symptom experience rather than retrospectively. The specific research questions were:

1. What are the differences between women's and men's perception of seriousness of joint and muscle pain?
2. What are the differences between women and men's perception of symptom (joint and muscle pain) interference in daily activities?
3. What are the differences in gender perception of joint and muscle pain controllability?
4. What are the differences in gender perception of joint and muscle pain cause?

5. What forms of symptom management were reported by each gender for joint and muscle pain?
6. What are the differences in gender perception of disease management effectiveness when considering treatments for joint and muscle pain?
7. Which other demographic variables influence the differences between men and women's symptom representation of pain?

SAMPLE

The sample was drawn from Brauer's (2001) existing database described above. Cases (participant data) were included in the secondary analysis if participants reported the presence of joint and/or muscle pain on at least one day in the first week of data collection. Cases, in which most of the study variables were missing, were excluded from the sample.

INSTRUMENTS

Symptom Diary:

The health diary measured the following variables in relation to joint/muscle pain: perceived symptom seriousness, interference with activities of daily living, controllability, perceived symptom cause, management of symptoms, and perceived usefulness of symptom management strategies (Appendix A). The diary contains two pages for each day in a one-week period. Items for each day include:

1. Are you experiencing joint/muscle pain?
2. How serious is it? (1: not at all; 2: possibly; 3: probably; 4: definitely)
3. How much does it interfere with your usual activities? (1: not at all; 2: somewhat; 3: great deal)
4. Is it controllable? (1: can be cured; 2: can be managed; 3: cannot be managed)

5. What caused it? (1: arthritis/lupus; 2: aging; 3: infection; 4: weather; 5: other disease; 6: diet; 7: activity; 8: stress/tension; 9: other)
6. What did you do about it? (1: nothing; 2: took medicine; 3: changed plans for the day; 4: changed diet; 5: exercised; 6: practiced relaxation; 7: rested more; 8: talked to someone; 9: talked to MD/nurse; 10: make clinic appointment; 11: other)
7. Was what you did helpful? (1: yes; 2: no)

Location of the reported joint/muscle pain was not specified.

Medical History and Demographic Data Form:

The medical history and demographic data form measures: diagnosis, number of years with chronic illness, age, gender, marital status, education, and income (Appendix B) (Brauer, 2011). "Marital status categories included never married, married, divorced, separated, and widowed. Educational rankings were: 7 to 9 years, 10 to 11 years, high school graduate, 1 to 4 years of post secondary education, college graduate, or graduate level education. Income was divided into $10,000 dollar increments. Income categories began with income of less than $10,000 per year and concluded with incomes of greater than $70,000 per year" (Brauer, 2011).

ANALYSES

Descriptive statistics in SPSS were used to calculate frequencies and measures of central tendency for each study variable. Means and standard deviations were used for rank ordered and interval scaled variables; medians were used for ordinal demographic variables.

The research questions were examined using inferential statistics, specifically Student's t-test, and chi-squared. T-tests were utilized to test the difference between mean scores of two groups on an item. Chi-squared statistic was used to examine relationships of categorical data with ordinal and interval data:

1. What are the differences between men and women in the perception of seriousness of joint and muscle pain in RA?
    - T-tests were utilized to examine differences between genders.
2. What are the differences in gender perception of symptom (joint and muscle pain) interference in typical daily activities?
    - T-tests were utilized to examine differences between genders.
3. What are the differences in gender perception of joint and muscle pain controllability?
    - T-tests were utilized to examine differences between genders.
4. What are the differences in gender perception of joint and muscle pain cause?
    - Chi-squared tests were utilized to examine differences between genders.
5. What forms of symptom management were utilized by each gender for joint and muscle pain?
    - Chi-squared tests were utilized to examine differences between genders.
6. What are the differences in gender perception of disease management effectiveness when considering treatments for joint and muscle pain?
    - T-tests were utilized to examine differences between genders.

LIMITATIONS

Limitations of this secondary analysis design included sample size and cross-sectional research design. The sample size was small, consisting of 121 participants. Of these participants, 21 were men. This ratio of 5:1 is greater than the 3:1 or 4:1 of most published research on rheumatoid arthritis. A larger, more evenly distributed sample size would have been desirable for the current research.

A second limitation to the current research included the cross sectional sample design. The initial report of joint/muscle pain by participants in the original study was examined in the current research. By simply considering the initial representation of joint and muscle pain, researchers did not examine subsequent reports of pain, which may have involved a different symptom representation. Patients may have found effective management techniques, thus improving quality of life, and decreasing severity of symptoms. Overall, occurrence of symptoms, perceived seriousness, symptom interference in daily activities, symptom controllability, perceived cause of symptoms, symptom management and perceived effectiveness of symptom management may have changed over time. Therefore, by utilizing a cross sectional study design, researchers were unable to examine change in symptom representation over time, which would have been consistent with Leventhal's theory.

CHAPTER IV

RESULTS OF ANALYSIS

SAMPLE DESCRIPTION

From Brauer's (2001) database of existing research on exploring symptom representation among persons living with chronic rheumatic diseases, 121 cases were identified that met the inclusion criteria. Each case represented a participant who reported joint/muscle pain on at least one day in the first week of data collection. These 121 cases constituted the sample for this secondary analysis.

Of the 121 participants, one hundred were female and twenty-one were male. Study participants ranged from the ages of 10 to 83 years with a mean age of 50.58. Mean illness duration was 13.971 years with a range between 0.3 and 51 years. Frequencies of race included the following: 97 Caucasian; 14 Black; 4 Hispanic; 4 American Indian or Alaskan native; and 2 other. Frequencies of marital status include the following: 56 married; 4 separated; 25 divorced; 12 widowed; and 24 never married. Educational level frequencies include: 2 grades 7-9; 8 grades 10-11; 28 high school graduates; 41 individuals with 1-4 years of college; 26 college graduates, and 15 professional or graduate school graduates. And finally, frequencies regarding income include the following: 30, less than $10,000 per year; 19, $10,000 to $19,999; 8, $20,000 to $29,999; 14, $30,000 to $39,999; 8, $40,000 to $49,999; 9, $50,000 to $59,999; 11, $60,000 to $69,999; and 17, greater than $70,000 per year.

DESCRIPTION OF STUDY VARIABLES

As shown in Figure 2 below, out of 113 study participants, the overall mean perceived seriousness of joint and muscle pain on a scale of 1-4 is 2.52 with a standard

deviation of 1.11. The mean of perceived interference in daily activities on a scale of 1-3 was 2.11 with a standard deviation of 0.38 . And the mean perception of symptom controllability on a scale of 1-3 was 2.04 with a standard deviation of 0.38.

TABLE 1

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Seriousness	113	1	4	2.52	1.11
Interference	113	1	3	2.11	.60
Controllability	113	1	3	2.04	.38
Valid N (listwise)	113				

One-hundred and eight individuals responded to the item asking about the cause of the pain. Possible causes of pain included: rheumatoid arthritis/systemic lupus; aging; infection; weather; other disease; diet; activity; and stress/tension. Of those study participants who responded, all of them listed a primary cause of pain; 43 listed a secondary cause of pain; and 18 listed a third cause of pain (Table 1).

TABLE 2

CAUSE OF PAIN

		Primary Cause	2nd Cause	3rd Cause
N	Valid	108	43	16
	Missing	13	78	105

The most frequently perceived cause of pain was reported as rheumatoid arthritis/systemic lupus (Table 2).

TABLE 3

PRIMARY CAUSE OF REPORTED PAIN

		Frequency	Percent	Valid Percent	Cumulative Percent
Missing	System	13	10.7		
Total		121	100.0		
Valid	RA./SLE	93	76.9	86.1	86.1
	aging	1	.8	.9	87.0
	infection	1	.8	.9	88.0
	weather	2	1.7	1.9	89.8
	other disease	3	2.5	2.8	92.6
	diet	1	.8	.9	93.5
	activity	6	5.0	5.6	99.1
	stress/tension	1	.8	.9	100.0
Total		108	89.3	100.0	

The most frequently reported secondary cause of pain was weather, with activity and aging closely following (Table 3).

TABLE 4
SECONDARY CAUSE OF REPORTED PAIN

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	aging	11	9.1	25.6	25.6
	infection	1	.8	2.3	27.9
	weather	13	10.7	30.2	58.1
	other	3	2.5	7.0	65.1
	disease activity	12	9.9	27.9	93.0
	stress/tension	2	1.7	4.7	97.7
	other	1	.8	2.3	100.0
	Total	43	35.5	100.0	
Missing	0	66	54.5		
	System	12	9.9		
	Total	78	64.5		
Total		121	100.0		

The most frequently reported third cause of muscle/joint pain was stress with activity following closely behind (Table 4).

TABLE 5
THIRD CAUSE OF REPORTED PAIN

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	weather	3	2.5	18.8	18.8
	activity	6	5.0	37.5	56.3
	stress/tension	7	5.8	43.8	100.0
	Total	16	13.2	100.0	
Missing	0	92	76.0		
	System	13	10.7		
	Total	105	86.8		
Total		121	100.0		

INFERENTIAL STATISTICS

Research Questions #1, 2, and 3

TABLE 6
PERCEIVED SERIOUSNESS, INTERFERENCE, AND CONTROLLABILTY
BETWEEN GENDERS

	SEX	N	Mean	Std. Deviation	Std. Error Mean
Seriousness	1	21	2.52	1.03	.22
	2	92	2.52	1.13	.12
Interference	1	21	2.00	.55	.12
	2	92	2.13	.62	6.41E-02
Controllability	1	21	2.14	.36	7.82E-02
	2	92	2.01	.38	3.94E-02

1. What are the differences between women's and men's perception of seriousness of joint and muscle pain?
   - As shown in Table 6 above, twenty-one men rated the seriousness of their joint/muscle pain. The mean seriousness was rated as 2.52 with a standard deviation of 1.03.
   - Ninety-two women rated the seriousness of their joint/muscle pain. The mean seriousness among women suffering joint/muscle pain was 2.52 with a standard deviation of 1.13.
   - Overall, data was fairly consistent between men and women when considering perceived seriousness of joint and muscle pain. The t-test showed no difference in mean perceived seriousness ratings between men and women.

2. What are the differences between women and men's perception of symptom (joint and muscle pain) interference in daily activities?
   - Twenty-one men and ninety-two women experiencing joint and muscle pain rated their perceived interference in daily activities due to symptoms (Table 6).

- The mean interference for men was 2 with a standard deviation of 0.55, while the mean interference for women was 2.13 with a standard deviation of 0.62.
- Once again, gender perceptions of daily interference are quite similar. The t-test showed no statistically significantly difference in perceived symptom interference in daily activities between men and women.

3. What are the differences in gender perception of joint and muscle pain controllability?

   In terms of symptom controllability, 21 men and 92 women responded to the questionnaire.

   On a scale of 1-3, the mean for symptom controllability in men was 2.14 with a standard deviation of 0.36. The mean among women was 2.01 with a standard deviation of 0.38.

   Again, each gender is fairly consistent with the other when considering controllability of symptoms. The t-test showed no statistically significant different between men and women in terms of perceived symptom controllability.

<u>Research Questions #4 and 5</u>

4. What are the differences in gender perception of joint and muscle pain cause?

   Study participants had the opportunity to report up to three causes for their perceived joint and muscle pain. The following three tables show the results of the Crosstabs Procedure (SPSS) used to calculate the Chi-squared test of differences between men and women. For all causes no difference in perceived cause of pain was found between genders.

TABLE 7
FIRST CAUSE OF PAIN

			SEX		Total
			1	2	
Cause	RA./SLE	Count	19	74	93
		Expected Count	18.1	74.9	93.0
	aging	Count	0	1	1
		Expected Count	.2	.8	1.0
	infection	Count	0	1	1
		Expected Count	.2	.8	1.0
	weather	Count	0	2	2
		Expected Count	.4	1.6	2.0
	other disease	Count	1	2	3
		Expected Count	.6	2.4	3.0
	diet	Count	0	1	1
		Expected Count	.2	.8	1.0
	activity	Count	1	5	6
		Expected Count	1.2	4.8	6.0
	stress/tension	Count	0	1	1
		Expected Count	.2	.8	1.0
Total		Count	21	87	108
		Expected Count	21.0	87.0	108.0

TABLE 8
SECOND CAUSE OF PAIN

			SEX		Total
			1	2	
2nd Cause	stress/tension	Count	0	2	2
		Expected Count	.4	1.6	2.0
	aging	Count	3	8	11
		Expected Count	2.0	9.0	11.0
	other infection	Count	1	0	1
		Expected Count	.2	.8	1.0
	weather	Count	1	12	13
		Expected Count	2.4	10.6	13.0
	other disease	Count	1	2	3
		Expected Count	.6	2.4	3.0
	activity	Count	2	10	12
		Expected Count	2.2	9.8	12.0
Total		Count	8	35	43
		Expected Count	8.0	35.0	43.0

TABLE 9
THIRD CAUSE OF PAIN

			SEX		Total
			1	2	
3rd Cause	weather	Count	1	2	3
		Expected Count	.4	2.6	3.0
	activity	Count	1	5	6
		Expected Count	.8	5.3	6.0
	stress/tension	Count	0	7	7
		Expected Count	.9	6.1	7.0
Total		Count	2	14	16
		Expected Count	2.0	14.0	16.0

5. What forms of symptom management were reported by each gender for joint and muscle pain?

   Use of medication, exercise, and resting were the most common forms of joint and muscle pain management with 81, 23, and 16 individuals using these forms of treatment respectively. Chi-Square tests showed no statistically significant differences for any of the symptom management strategies.

TABLE 10
SYMPTOM MANAGEMENT STRATEGIES

1. Did Nothing

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no	106	87.6	87.6	87.6
	yes	15	12.4	12.4	100.0
	Total	121	100.0	100.0	

Chi-Square tests produced a non-significant value (p = 0.843)

2. Took Medication

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no	40	33.1	33.1	33.1
	yes	81	66.9	66.9	100.0
	Total	121	100.0	100.0	

3. Changed Plans

	Frequency	Percent	Valid	Cumulativ

				Percent	e Percent
Valid	no	114	94.2	94.2	94.2
	yes	7	5.8	5.8	100.0
	Total	121	100.0	100.0	

4. Diet Change

		Frequency	Percent	Valid Percent	Cumulativ e Percent
Valid	no	120	99.2	99.2	99.2
	yes	1	.8	.8	100.0
	Total	121	100.0	100.0	

5. Exercised

		Frequency	Percent	Valid Percent	Cumulativ e Percent
Valid	no	98	81.0	81.0	81.0
	yes	23	19.0	19.0	100.0
	Total	121	100.0	100.0	

6. relaxation

		Frequency	Percent	Valid Percent	Cumulativ e Percent
Valid	no	105	86.8	86.8	86.8
	yes	16	13.2	13.2	100.0
	Total	121	100.0	100.0	

7. rested

		Frequency	Percent	Valid Percent	Cumulativ e Percent
Valid	no	83	68.6	68.6	68.6
	yes	37	30.6	30.6	99.2
	9	1	.8	.8	100.0
	Total	121	100.0	100.0	

8. talked to someone

		Frequency	Percent	Valid Percent	Cumulativ e Percent
Valid	no	116	95.9	95.9	95.9
	yes	5	4.1	4.1	100.0
	Total	121	100.0	100.0	

9. called MD/RN

		Frequency	Percent	Valid Percent	Cumulativ e Percent
Valid	no	113	93.4	93.4	93.4
	yes	8	6.6	6.6	100.0
	Total	121	100.0	100.0	

10. made appt

		Frequency	Percent	Valid Percent	Cumulativ e Percent
Valid	no	112	92.6	92.6	92.6
	yes	9	7.4	7.4	100.0
	Total	121	100.0	100.0	

6. What are the differences in gender perception of disease management effectiveness when considering treatments for joint and muscle pain?

   Chi-square tests showed no statistically significant differences in perceived helpfulness of management strategies between males and females. The *p* value of Chi-Square, however, approached the 0.1 level. Given that only two-thirds of the participants responded to the "helpfulness" question (n = 83), a larger sample might yield a statistically significant difference.

TABLE 11
CHI-SQUARE TESTS

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.386	1	.122		
Likelihood Ratio	1.855	1	.173		
Fisher's Exact Test				.173	.173
Linear-by-Linear Association	2.357	1	.125		
N of Valid Cases	83				

7. Which other demographic variables influence the differences between men and women's symptom representation of pain?

   Since there were no differences between men and women's symptom representation, it was not possible to answer this question.

CHAPTER V

DISCUSSION AND CONCLUSIONS

DISCUSSION

The purpose of this secondary analysis was to examine:

(1) gender perception of seriousness of joint and muscle pain in rheumatoid arthritis,

(2) gender perception of joint and muscle pain interference with daily life,

(3) gender perception of controllability of joint and muscle pain,

(4) gender perception of joint and muscle pain cause,

(5) gender perception of joint and muscle pain management,

(6) gender perception of the effectiveness of joint and muscle pain management strategies, and

(7) demographic variables influencing differences between men and women's symptom representation of pain.

This chapter provides a discussion of study findings and compares them to the current, relative research. The chapter also addresses implications for future research and practice

Research Question 1: What are the differences between women's and men's perception of seriousness of joint and muscle pain?

The analyses revealed no significant difference between men and women's perception of seriousness of joint and muscle pain. Interestingly, as noted in chapter two, several other authors do note gender differences when considering joint/muscle pain. Safdar (2009) found decreased pain thresholds and pain tolerance in women with greater pain sensitivity than men. Additionally, in another study by Stenberg and Ahlgren (2010), women were, once again, found to experience greater levels of musculoskeletal pain, with an overall

larger incidence of disability. Leventhal's self-regulation model predicts an individualized pattern of representation, coping and appraisal based on prior experiences in addition to internal and external stimuli. In this particular research, gender was not found to be a contributing factor in perceived joint/muscle pain seriousness. Perhaps the low number of men in this study (21 versus 100 women) was insufficient to represent the full range of variability in men's representation of pain..

Research Question 2: What are the differences between women and men's perception of symptom (joint and muscle pain) interference in daily activities?

When considering interference in daily activities due to chronic joint and muscle pain, research found that gender does not play a significant role. Chiou (2009) found that "the total variance of disability (in individuals experiencing arthritic disease) was explained by age, gender, marriage, joint pain score, diagnosis, disease activity, depression and pain management" (p. 2213). Specifically, Chiou (2009) found that women are more likely than men to be disabled due to arthritic disease. However, numerous studies have stated that within the general population of RA patients, there is no evidence showing a decreased level of daily activities between genders (Eberhardt, 1995; Hakala, 1996; Kvien, 2006). Yet, other studies find women to be more affected physically than men (Guillemin, 1994; Hootman, 2002; Smedstad, 1996; Young, 2000). Overall, the current findings are similar to those published studies that found no difference in activities of daily living between genders.

Research Question 3: What are the differences in gender perception of joint and muscle pain controllability?

Leventhal's model of self-regulation describes 5 components of a representation of symptoms or diseases .as perceived by a patient. Symptom controllability is one of those components. This study's findings showed no differences between genders with respect to joint and muscle pain controllability. Other studies have found women seek assistance sooner and receive treatments more quickly than men, and their authors suggest that men find chronic pain to be less controllable than women. The lack of statistically significant differences in symptom controllability between genders in this study might reflect the limited range of choices on the controllability item. "Curable," "Manageable," and "Unmanageable" categories might be too broad to measure accurately more finely nuanced perceptions.

Research Question 4: What are the differences in gender perception of joint and muscle pain cause?

Published research is lacking on the subject of perceived cause of joint and muscle pain in chronic disease. Study examined the first three causes of joint and muscle pain reported by study participants. There were absolutely no significant differences in perceived cause of pain between males and females. Findings did show that the majority of participants identified rheumatoid arthritis or systemic lupus as the primary cause of their joint and muscle pain. The second and third causes were more varied with the majority of participants reporting weather, activity and stress. These causes are not totally unexpected because a close relationship between joint pain and changes in weather are widespread in the lay community, while "overdoing" (activity) and "stress" as factors that might exacerbate pain are emphasized in patient education materials.

Research Question 5: What forms of symptom management were reported by each gender for joint and muscle pain?

Although no statistically significant associations were found between gender and joint/muscle pain symptom management, the findings revealed that overall use of medication, exercise, and resting were the most widely used forms of treatment. Previous research has noted differing forms of chronic pain management between genders by both medical providers and patients. As discussed previously, women tend to seek medical attention soon than their male counterparts, often accepting more options for treatments than men. Interestingly, medical providers have been found to use different treatment strategies based on gender. Hamberg (2002) states "in patient with disabling (neck) pain, women were more often found to be treated with drugs, physical therapy, acupuncture, ergonomics, psychosomatic treatment, information and relaxation therapy, whereas men more often had surgery and joint manipulation" (p. 35). The symptom diary, however, did not ask participants to identify health provider recommendations for pain management.

Research Question 6: What are the differences in gender perception of disease management effectiveness when considering treatments for joint and muscle pain?

No published research was found on the topic of gender perception of symptom management effectiveness for joint and muscle pain. Current findings revealed no statistically significant differences between men and women's perceptions of pain management effectiveness. Again, inadequate measurement might be responsible for this finding. Participants were only give two choices on this item: "yes" or "no". Without a range of possible responses, participants' true perceptions, e.g. "somewhat helpful," might not have been captured.

Research Question 7: Which other demographic variables influence the differences between men and women's symptom representation of pain?

Since there were no differences between men and women on any of the 5 components of symptom representation, this research questions was irrelevant. However, the demographic variables were examined for differences between men and women. Again no statistically significant differences were found. This lack of an association between gender and other demographic variables seems inconsistent with Chou's (2009) findings: ". . . higher disability was explained by older age, female, unmarried, diagnosed with RA, more joint pain, more disease activity, more depression and more use of pain management strategies in arthritic patients" (p. 2213). The relatively small number of men in this study's sample could also lead to insufficient variability in that group to detect real differences with women. Regardless, a larger, more evenly distributed sample size would have been desirable for the current research.

IMPLICATIONS FOR FUTURE RESEARCH

Many sufferers of rheumatoid arthritis experience symptoms other than joint and muscle pain. Some individuals consider joint and muscle weakness or decreased functioning to be of greater concern and more bothersome than actual pain. Future research should determine which symptoms patients find the most concerning and then examine differences in symptom representation.

In addition, a larger range of response options should be used for the controllability and effectiveness items, noted above.

IMPLICATIONS FOR NURSING PRACTICE

Chronic disease perception and management can vary among individuals. Although the current research does not find significant differences between genders with respect to symptom perception and management, health care providers should assess a patient's symptom representation and then develop individualized patient plans of care as many factors can influence overall disease management.

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APPENDIX A.

SYMPTOM DIARY

ID#_____ Day_____ Date_____ ____No Symptom

Symptom _____Joint/Muscle Stiffness	**Symptom** _____Joint/Muscle Pain	**Symptom** _____Fatigue
How serious is it? ___not at all ___possibly ___probably ___definitely	How serious is it? ___not at all ___possibly ___probably ___definitely	How serious is it? ___not at all ___possibly ___probably ___definitely
How much does it interfere with your usual activities? ___not at all ___somewhat ___great deal	How much does it interfere with your usual activities? ___not at all ___somewhat ___great deal	How much does it interfere with your usual activities? ___not at all ___somewhat ___great deal
Is it controllable? ___can be cured ___can be managed ___cannot be managed	Is it controllable? ___can be cured ___can be managed ___cannot be managed	Is it controllable? ___can be cured ___can be managed ___cannot be managed
What caused it? ___arthritis/lupus ___aging ___infection ___weather ___other disease ___diet ___activity ___stress/tension ___other (specify)_____	What caused it? ___arthritis/lupus ___aging ___infection ___weather ___other disease ___diet ___activity ___stress/tension ___other (specify)_____	What caused it? ___arthritis/lupus ___aging ___infection ___weather ___other disease ___diet ___activity ___stress/tension ___other (specify)_____
What did you do about it? ___nothing ___took medicine ___changed plans for the day ___changed diet ___exercised ___practiced relaxation ___rested more ___talked to someone ___talked to MD/nurse ___made clinic appointment ___other (specify)_____	What did you do about it? ___nothing ___took medicine ___changed plans for the day ___changed diet ___exercised ___practiced relaxation ___rested more ___talked to someone ___talked to MD/nurse ___made clinic appointment ___other (specify)_____	What did you do about it? ___nothing ___took medicine ___changed plans for the day ___changed diet ___exercised ___practiced relaxation ___rested more ___talked to someone ___talked to MD/nurse ___made clinic appointment ___other (specify)_____
Was what you did helpful? ___yes___no	Was what you did helpful? ___yes___no	Was what you did helpful? ___yes___no

APPENDIX B.

MEDICAL HISTORY AND DEMOGRAPHIC DATA FORM

Please provide the following information about yourself:

73. What is your age at this time? _____

74. What is your sex?

Male (1) _____
Female (2) _____

75. What is your racial background?

White (1) _____
Black (2) _____
Hispanic (3) _____
Asian or Pacific Islander (4) _____
American Indian or Alaskan Native (5) _____
Other (6) _____

76. What is your current marital status?

Married (1) _____
Separate (2) _____
Divorced (3) _____
Widowed (4) _____
Never married (5) _____

77. What is the highest level of education you received.

Less than seven years of school (1) _____
Grades seven through nine (2) _____
Grades ten through eleven (3) _____
High school graduate (4) _____
One to four years of college (5) _____
College graduate (6) _____
Professional or graduate school (7) _____

78. What is your approximate family income including wages, disability payment, retirement income and welfare?

Less than $10,000 (1) _____
$10,000 - $19,999 (2) _____
$20,000 - $29,999 (3) _____
$30,000 - $39,999 (4) _____
$40,000 - $49,999 (5) _____
$50,000 - $59,999 (6) _____
$60,000 - $69,999 (7) _____
More than $70,000 (8) _____

Thank you for completing this questionnaire.