

Family Functioning and Marital Satisfaction
Reported by Women with Fibromyalgia, their Spouses,
and Control Groups.

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A dissertation submitted to the Faculty of Graduate Studies
in partial fulfilment of requirements for the degree of

DOCTORATE OF PHILOSOPHY

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**FAMILY FUNCTIONING AND MARITAL SATISFACTION REPORTED BY WOMEN
WITH FIBROMYALGIA, THEIR SPOUSES, AND CONTROL GROUPS**

BY

PAMELA J. CHENHALL

**A Thesis/Practicum submitted to the Faculty of Graduate Studies of The University
of Manitoba in partial fulfillment of the requirements of the degree**

of

DOCTOR OF PHILOSOPHY

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Abstract

Fibromyalgia (FM) is a widespread, musculoskeletal pain condition that is diagnosed with greater frequency in women than men. Its history in the research literature is short, although symptoms of the condition have appeared in the written word for centuries. The majority of the existing research has focussed on identifying the origins and pathogenesis of the disorder. To date, relatively little emphasis has been placed on exploring the psychological impact of fibromyalgia. Fifty FM patients and their spouses were compared to 50 matched, chronic pain-free and chronic illness-free couples on family functioning and marital satisfaction. Based on the published literature, three methodological improvements were made to the research design including the use of a control group, increasing the sample size, and attempting to obtain a more representative sample of chronic pain sufferers within the FM group. Based on the published literature one could expect that the FM group's scores on the family functioning measure and the marital satisfaction measure would differ significantly from the control group. However, the FM group is not well understood and therefore the purpose of this research was to explore in what way family functioning and marital satisfaction was reported by women diagnosed with FM and their spouses relative to the control group. It was found that the FM group did not differ from the control group on reported family functioning and marital satisfaction. Possible sources of disparity between the published literature and the current data were explored, including the methodological improvements and the possibility that the FM group is not comparable to other chronic pain groups. Future research expanding on the methodological changes made and focussing on those families who are able to successfully adapt to the challenge of chronic pain was recommended.

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Family Functioning and Marital Satisfaction

Reported by Women with Fibromyalgia, their Spouses,
and Control Groups.

Fibromyalgia (FM) is a chronic pain condition defined by widespread and unpredictable musculoskeletal pain. The pain must be present in 11 of 18 tender point sites on digital palpation (Caudill, 1995). While associated complaints include headache, Irritable Bowel Syndrome, and short-term memory problems, the most common complaint of fibromyalgia patients is disrupted sleep patterns that result in feelings of chronic fatigue. Symptoms of fibromyalgia seem to vary according to environmental stress levels. Fatigue and pain are two of the most commonly identified stressors.

While the majority of medical research has focussed on the underlying causes, symptomatology, and treatment options, scarce research has been dedicated to exploring the psychological impact of FM. The purpose of this research was to contribute to an understanding of whether FM has an impact on a family's ability to function and the couple's marital satisfaction.

Couples with one member diagnosed with FM were compared to a sample of matched, chronic pain-free and illness-free control couples to determine the extent to which reported family functioning and marital satisfaction fared in the presence of fibromyalgia. Reported pain disability and other pain dimensions (such as severity, frequency, and duration) are variables that have been previously identified as being related to family functioning. These variables were included in the information gathered from participants. The literature has suggested that chronic pain patients reported more disruptions to family functioning and more marital dissatisfaction

(e.g., Feinauer & Steele, 1992; Flor, Turk, & Scholz, 1987; Kerns, Haythornthwaite, Southwick, & Giller, 1990; Payne & Norfleet, 1986; Roy & Thomas, 1989; Turk, Flor, & Rudy, 1987). The disruption of family functioning and marital satisfaction appeared to be most strongly related to pain intensity/severity. Other research has suggested increased psychological distress in chronic pain patients as well (e.g., Haley, Turner, & Romano, 1985; Haythornthwaite, Sieber, & Kerns, 1991; VonKorff, LeResche, & Dworkin, 1993). However, it is recognized that estimates of psychological disturbance are not universally severe. Please refer to Appendix A for a discussion of the relationship between depression and chronic pain.

Fibromyalgia

Etiology, Pathogenesis, and Descriptive Characteristics

Fibromyalgia is a relatively new diagnostic term in the history of medicine but the symptoms the term represents have been reported for centuries. Compared to the long history of symptom presentation, only in the early part of this century have research efforts focussed on establishing the etiology, pathogenesis, and diagnostic criteria for this condition. The term, fibromyalgia, is descriptive of a condition manifested as widespread musculoskeletal pain that is of chronic duration. What differentiates FM from other pain conditions is the widespread configuration of pain locations and the presence of a stage four sleep disruption resulting in chronic fatigue (Wolfe, Smythe, Yunus, & Bennett, 1990). The challenge associated with the diagnosis of FM has been defining it as a complex condition within in a biopsychosocial model and moving away from the notion that the pain symptoms are purely psychological in origin. Considerable time and effort has been spent differentiating the pain experienced in FM from that described in psychogenic pain conditions. A complication to these efforts has been the

observation that persons suffering from FM do not look sick but present a history of disability that is as or more devastating than that of persons suffering outwardly from more obvious physical illnesses.

Fibromyalgia was previously known as fibrositis. The term fibrositis was introduced by Gowers in 1904 (Raspe & Croft, 1995). This label was applied to the symptoms of what is now known as FM in the early part of this century. The name, fibrositis, was felt to be an appropriate descriptor for the constellation of symptoms because medical investigations had identified inflammation of fibrous tissues in persons reporting muscle aching (Boissevain & McCain, 1991a). However, evidence continued to mount suggesting that muscle biopsies and the response to medical treatments designed to reduce muscle inflammation did not reflect the consistent existence of an inflammatory condition of the muscles of all sufferers.

FM was also known by several descriptors, like “psychogenic rheumatism,” all of which reflected attempts to categorize and define fibromyalgia within existing pain conditions and/or according to proposed etiologies. The name fibromyalgia was proposed by Hench in 1976 (Boissevain et al., 1991a). While the current feeling is that this name does not accurately describe the condition, the descriptor has remained in place to encourage consistent classification of the symptom cluster. Much of the research on the symptoms and course of fibromyalgia has been inspired by the work of Smythe and Moldofsky who have been inspirational in the pain-sleep disorder relationship and laying the groundwork for the current diagnostic criteria for FM (Anch, Lue, MacLean, & Moldofsky, 1991; Gupta & Moldofsky, 1986; Moldofsky & Scarsbrick, 1976; Moldofsky, Scarsbrick, England, & Smythe, 1975; Moldofsky, Tullis, Lue, Quance, & Davidson, 1984; Moldofsky & Warsh, 1978; Saskin, Moldofsky, & Lue, 1986). The

diagnostic criteria for FM are found in Table 1.

Because the etiology of FM remains obscure, a definitive course of illness can not be predicted. Retrospective reports suggest three forms of onset. The first, and most dramatic, is onset due to some form of physical trauma. Sparse research evidence suggests that FM resulting from an accident can be more disabling than FM that develops "naturally" (Smiley, Cram, Margoles, Romano, & Stiller, 1992). A second form of onset is related to a protracted physical illness, like influenza. The final, and most common, type of onset is described as a gradual increase in symptoms over adulthood. FM patients frequently experience muscle spasms, headache, poor/non restorative sleep, and reactive depression. In addition to the widespread pain that is described as a constant feeling of overexertion, a constellation of accompanying symptoms have been identified. These symptoms include Irritable Bowel Syndrome, sicca symptoms, and Raynaud's phenomenon. It has also been identified that FM patients' pain is affected by changes in the weather, including extreme changes in temperature and humidity, stress, anxiety, and poor sleep (Wolfe et al., 1990).

FM occurs in roughly 2.1% to 5.7% of the population (Vaeroy, 1996; Wolfe, Ross, Anderson, Russell, & Hebert, 1995). Merskey (1996) estimated that FM occurs in women eight to nine times more frequently than in men. Wolfe et al. (1990) in their study of the prevalence and characteristics of FM in a more general population found rates of FM to be two times higher in the 50-69 age group than in other age groups although they did identify the presence of fibromyalgia in all age groups. They also noted that in the general population, aside from age, FM was associated with failure to complete high school and with reduced household income.

Table 1

Diagnostic Criteria for Fibromyalgia Syndrome According to the 1990 Multicenter Criteria Committee ^a

-
- (1) Widespread pain in of at least three months' duration.
- (2) Pain in 11 of the following 18 point sites on digital palpation with a pressure of 4 kg.
- (a) Occiput: at the suboccipital muscle insertions (bilateral)
 - (b) Low cervical: at the anterior aspect of the inter-transverse spaces at C5-C7 (bilateral)
 - (c) Trapezius: at the midpoint of the upper border (bilateral)
 - (d) Supraspinatus: at origins above the scapula spine near the medial border (bilateral)
 - (e) 2nd rib: at the second costo-chondral junctions, just lateral to the junctions on the upper surfaces (bilateral)
 - (f) Lateral epicondyle: 2 cm distal to the epicondyle (bilateral)
 - (g) Gluteal: in upper outer quadrants of buttocks in anterior fold of muscles (bilateral)
 - (h) Greater trochanter: posterior to the trochanteric prominence (bilateral)
 - (I) Knees: at the medial fatpad proximal to the joint line (bilateral)
-

^aTaken from Wolfe et al., 1990

Note: For classification purposes patients will be said to have fibromyalgia if both criteria are satisfied. The presence of a second clinical disorder does not exclude the diagnosis of fibromyalgia. The distinction between 'primary' and 'secondary' fibromyalgia is abolished.

Differential Diagnosis

The search for the etiology of FM has focussed considerable attention on establishing FM

as a distinct diagnostic category. Differentiation between FM and rheumatoid arthritis, a pain condition that has been considered similar to FM in presentation, is relatively easy given each diagnosis' constellation of symptoms. Rheumatoid arthritis is characterized by inflammation of the joints and connective tissues. FM is characterized by nonarticular pain in the muscles. However, because of the similar levels of disability in both conditions, rheumatoid arthritis groups have served as a useful comparison group when assessing disability and quality of life (e.g. Martinez, Ferraz, Sato, & Atra, 1995).

Because of the difficulties encountered in defining the etiology and course of FM in medical terms, most investigative efforts have focussed on finding the psychological origins for the disorder. Clinical studies assessing the psychological characteristics of FM sufferers have found strong correlations between FM and somatization scores (Wolfe, Ross, Anderson, Russell, & Hebert, 1995). Such findings have led researchers to consider the distinct possibility that the pain experienced in FM is a physical manifestation of a psychological disturbance. It is this speculation that has prompted a closer examination of the symptomatology of FM with respect to the diagnostic criteria for psychological disorders like hypochondriasis, somatoform pain disorder, and psychogenic rheumatism. Closer examination of the symptom presentation of the latter psychological disorders suggests vague and physiologically inconsistent pain complaints that are overly dramatic when described or examined. Many of the pains described tend to mimic other more common pain conditions, like angina (Boissevain et al, 1991b). When comparing this symptom constellation with that reported by FM patients, Boissevain et al. note that "FS (*FM*) symptoms are described and located in a predictable and consistent manner; ...Although FS

patients exhibit point tenderness, they may be better able to withstand light punctate¹ pressure than some patients whose pain has a significant psychological component" (p. 230). Further support for the distinction between FM and psychologically based pain conditions is provided by Dunne and Dunne (1995), who compared FM symptom presentation with diagnostic criteria for somatization disorder and found that, generally, FM patients would not meet these criteria.

Attention has also been directed to the relationship between chronic fatigue syndrome (CFS) and FM. Approximately 75% of FM patients also meet the criteria for CFS. Researchers have noted that the two disorders share common features, like headache, muscular weakness, and sleep disturbance (Boissevain et al., 1991a). This has led to the proposal that the two disorders share a common etiologic pathway. However, the etiology of CFS remains as obscure as FM, so the validity of this assumption remains unsubstantiated (Farrar, Locke, & Kantrowitz, 1995).

This brief review of the FM literature suggests that FM is a pain condition that does not meet existing criteria for a psychologically based physical conditions. However, the etiology and pathogenesis of the disorder remain a mystery. Standard diagnostic criteria have been developed that aid in research into the determination of onset and pathogenesis by providing consistency across participant samples. Regardless of the unanswered questions about the origins of this disorder, FM continues to affect millions of people worldwide and its impact, like the impact of any medical disorder, is not localized to the afflicted person. The following section discusses the impact of FM both on the patient and their significant others.

¹Fingertip or other pointed object applying pressure to the skin surface

Impact of FM

Notwithstanding the absence of a clear etiology and course of FM, there is considerable evidence of the impact and disability resulting from the diagnosis. Martinez et al. (1995) concluded that quality of life in FM patients was substantially diminished. Many FM patients have experienced changes in work performance and many are forced to leave full-time employment or to make career changes (MYOPAIN, 1992). Changes in career and employment status often result in downward changes in income levels that are an additional source of stress for patients and families. Not only are income-related duties affected but many persons with FM are forced to give up hobbies, community activities and social activities. Responsibilities in the home also fall prey to the pain of FM. As a healthy or pain-free person, one can only begin to imagine the devastation a person with FM feels when they can no longer engage in the activities that defined them in the community. Naturally, feelings of self-efficacy are affected by this loss of self-definition. Buckelew et al. (1994) noted the presence of a relationship between self-efficacy and pain behaviour which they felt emphasized the importance of self-efficacy in successful pain management.

The most profound impact of FM seems to result from the frustrating search for answers to questions about the symptoms. This has been especially true for the women who comprise 80% of the FM population and who suffer from the discrimination of the medical community when confronted with physical symptoms that do not have a defined pathology - "It's all in your head, dear." "For the women with FM the searching for a diagnosis or moving from health care provider to health care provider was an attempt at finding just the right doctor, hoping that they would finally have something with a name, making their experience legitimate" (Schaefer, 1995,

p. 97). Their frustration is compounded by the fact that FM patients have to convince medical professionals and family members that there is, in fact, something wrong. This occurs because persons with FM do not look sick. "Family members did not believe them because no one was able to find anything wrong, their friends began to fade into their own worlds, children questioned 'Why is mummy always sick?'... (p. 98). Having FM is to feel profoundly alone.

Most FM patients report symptoms that are variable and unpredictable from day to day, resulting in a reluctance to make plans or to look forward to upcoming events (Henriksson, Gundmark, Bengtsson, & Ek, 1992). The process of living with FM involves taking each day as it comes and focussing on getting through each day without pain exacerbation. Schaefer (1995) concluded after interviewing several women about their experience with FM, "As these women reflected on their lives before illness, they struggled with the loss of what was, and what they perceived as a very uncertain present, " (p. 100) and that "'Dancing on the rim of life' became the metaphor used ... to describe the process of struggling to maintain a balance" (p. 101). This unpredictable style of life makes completing tasks associated with familial role definitions challenging. FM patients also report feelings of depression and anxiety associated with the experience of FM. This relationship will be discussed in a following section addressing the relationship between pain in general and symptoms of depression.

Family Functioning

Family functioning is a complex balance influenced by numerous variables. As with any conceptualization of functioning, family functioning ranges from optimal to dysfunctional. All levels of family functioning are defined by a combination of internal factors, such as individual personalities, and external factors, such as a parent's job loss. When an internal or external factor

disrupts the family's natural balance, there is a drive to return to previous functioning levels.

This conceptualization is based upon the work of several family theorists and therapists (Carter & McGoldrick, 1989; Karpel & Strauss, 1983; Minuchin & Fishman, 1981). All of these therapists recognize that stress to the family system results in some form of change in family functioning. This change can manifest itself in a variety of ways (i.e., successful adaptation for some families and severe symptomatology for others). Of greatest relevance to this research is the suggestion that if attempts at adaptation are unsuccessful, the family may experience extensive dysfunction. In order for the family to return to previous levels of functioning, some form of adaptation (i.e. a new balance) must be negotiated by family members.

An extensive review of the literature on family dysfunction indicated that chronic pain is an example of an external disruption challenging the equilibrium of the family system. It was recognized that chronic pain is not so much an event as a process, defined by smaller "events" like, the initial injury, the diagnosis, failed interventions, increasing disability, etc. Moreover, the chronic pain literature suggested that families, of which a chronic pain patient is a member, typically are forced to make adaptations in family functioning. While the literature has not provided evidence of extensive family dysfunction in chronic pain families, adaptation may not fall within theoretical, normal ranges of functioning, and as such may be labelled dysfunctional. Therefore control group families for comparison are essential in understanding the extent of the impact of FM on family functioning.

The following pages will review the literature on family functioning beginning with a description of the model of family functioning upon which the current research and the chosen family functioning measure (the Family Assessment Measure - III) are based. This will be

followed by a review of the chronic pain literature in terms of the role of family in the etiology of pain, the role of the family in the perpetuation of pain and finally the impact of pain on the family and its individual members.

The McMaster Model of Family Functioning

The McMaster Model of Family Functioning evolved from extensive clinical and research contact with families. Its roots can be traced to a conceptual framework designed for research purposes in the early 1960's (Epstein, Bishop, & Levin, 1983). From these early beginnings evolved the current conceptualization of family functioning that covers the full spectrum from health to pathology. The model was based on a systems approach to family functioning that recognizes the dynamic, open nature of the family system. Several essential assumptions underlie the premises of the model. One of the core assumptions proposed that family structure and organization affects the behaviour of family members. This model has demonstrated clinical utility and has been used extensively for research purposes (Epstein et al., 1983; Epstein, Bishop, Ryan, Miller, & Keitner, 1993).

The McMaster Model of Family Functioning (MMFF) is based on six dimensions of family functioning: 1) problem solving, 2) communication, 3) roles, 4) affective responsiveness, 5) affective involvement, and 6) behaviour control. These dimensions do not operate in isolation from one another, rather they are all integrally related to what is conceived as the primary goal of family functioning--task accomplishment (Epstein, Bishop, Keitner, & Miller, 1990; Steinhauer, 1987). The following paragraphs will briefly summarize the six dimensions.²

² While descriptions provided will use average or adaptive functioning as a reference point,

Problem solving. Family problem solving is defined as the family's ability to address problems in a manner that allows for continuous functioning in the effective or adaptive range. Two types of problems are defined as important to family functioning: instrumental and affective. Instrumental problems are mechanical problems like money, food, and clothing, while affective problems are those involving emotion or feeling. Seven stages of the problem solving process are postulated. The first stage is identification of the problem. Once the problem is identified it must be communicated to the appropriate person or persons within the family unit. This communication leads to the generation of alternative solutions to the problem. One of these solutions is selected for action and implemented. The problem solution is monitored by the family members which ensures that appropriate modifications are made to the solution. This monitoring and modifying of the "action" is done to encourage successful problem resolution. Finally, the success of the solution chosen for implementation is or should be evaluated.

Ideally, all seven stages are achieved and each task completely fulfilled. This would be considered effective family functioning. Conversely, an example of ineffective functioning would be the inability of the family to complete step one, defining the problem. Realistically, all seven stages are rarely completed by all families, yet partial completion can be considered as adequate family functioning. A typical family can manage several minor unresolved problems concurrently without compromising effective functioning. The McMaster model has no strict time line during which problems must be resolved, nor is there an efficiency standard. As long as some form of adaptive problem solving occurs, the family is considered to be functioning in

it must be acknowledged that within the categorization of "average" a range of functioning occurs.

the effective range of this dimension.

Communication. The communication issues arising within the family are categorized along the same two dimensions as those in problem solving: instrumental and affective. These two dimensions are considered independent of one another. Clinical evidence has suggested that marked difficulties can occur in the affective dimension while functioning continues unaffected on the instrumental dimension. Communication occurs along two continua that interact to create four styles of communication. The first of these continua is the clear versus masked continuum; the second, direct versus indirect. The four styles of communication arising from the interaction of the two continua are: a) clear and direct, b) clear and indirect, c) masked and direct, and d) masked and indirect.

When assessing functioning on this dimension attention must be paid to both verbal and nonverbal communication. Most effective functioning in this dimension occurs when communication is both clear and direct. Masked and indirect communications are considered to be the least effective form of communication. Caution should be taken when evaluating communication over conflict issues because communication will be less clear and direct on these issues.

Roles. "Family roles are the repetitive patterns of behaviour by which individuals fulfil family functions" (Epstein et al., 1983, p. 79). Role functioning occurs in the instrumental and affective domains as well. However, these two domains are further divided into necessary family functions and other family functions. There are five necessary family functions identified by the MMFF. The first of these is labelled the provision of resources, under the instrumental dimension. The second and third are in the affective dimension: nurturance and support, and

adult sexual gratification. The final two necessary family functions are a mixture of the instrumental and affective dimensions: life skills development, and systems maintenance and management. "Other" family functions are those tasks or activities that are considered unique to individual family units. These "other functions" are considered either adaptive or maladaptive.

Role functioning is assessed based on two concepts. The first, role allocation, considers how families designate responsibilities. The second concept is how the family handles accountability. Effective functioning is defined by the clear allocation of family responsibilities. This method of allocation should include accountability mechanisms. Unaddressed family functions and/or the absence of the maintenance of allocation and accountability define the least effective functioning on this dimension. Two important points with respect to role functioning are: 1) that families who are functioning effectively may experience difficulty with allocation of resources when circumstances are beyond their control and; 2) that role allocation does not have to be equitable to be functional. One family member can be responsible for a disproportionate amount of family functions without conflict provided it is a mutually satisfying situation for all family members.

Affective responsiveness. Affective responsiveness is defined as the family members' ability to respond to a range of situations with appropriate affect. Appropriate affect is defined in terms of both quality and quantity of feelings. Two types of emotions are differentiated under this dimension: "welfare" emotions are described by feelings like love and joy, while sadness and anger are descriptive of "emergency" emotions. The wider the range of responses in terms of quality and quantity, the more effective a family will be considered in terms of this dimension. Conversely, least effective functioning is characterized by a very narrow range of affective

responses and/or a distortion in the amount or quality of those responses.

It is important to acknowledge that not all family members experience the same range of emotional responsiveness. Further it should be recognized that inappropriate responses on occasion do not need to be defined as disruptive.

Affective involvement. This dimension is "defined as the degree to which the family shows interest in and values the activities and interests of family members" (Epstein et al., 1983, p. 82). A range of possible involvement from uninvolved to overinvolved is subdivided into seven levels: a) lack of involvement, b) involvement devoid of feelings, c) narcissistic involvement, d) empathic involvement, e) overinvolvement, and f) symbiotic involvement. Lack of involvement is self-explanatory, as is involvement devoid of feelings. Narcissistic involvement occurs when interest in others is primarily egocentric in nature. This egocentric interest is coupled with a failure to understand the personal importance of a situation to the others involved. Families, where the import of a given situation for others is understood and all emotional investment is characterized by this understanding, are defined as empathically involved. Overinvolvement is easily understood as interest considered intrusive or overprotective. Finally, symbiotic involvement is the label given to pathological states where boundaries between family members cease to exist because of the intensity of the interest and involvement.

Normal families, those in the average range of functioning, are characterized by empathic involvement but fluctuation around this level should not be considered dysfunctional. Affective involvement becomes dysfunctional the further away the family strays from empathic involvement. Variation in levels of involvement by an individual family member are not

inappropriate but rather reflect normal variations in individual functioning.

Behaviour control. The final dimension of family functioning in the McMaster Model is behaviour control. Behaviour control refers to how a particular family manages dangerous situations, situations involving the expression and meeting of psychobiological needs and drives, and interpersonal socializing both within and outside the family unit. All family members' behaviours need to be considered when assessing this dimension.

The pattern a particular family adopts is formally known as style of behaviour control. Observations of families have produced four styles of behaviour control. The first of these styles is "rigid behaviour control". This style is characterized by rules that are constricted and narrow and there is little room for negotiation and change across situations. Flexible behaviour control, the second style, is demonstrated by reasonable rules or standards and reasonable flexibility across situations. Third, laissez-faire behaviour control is defined by total latitude because the context is irrelevant. Finally, random shifts from rigid to flexible to laissez-faire styles and unpredictable standards and latitude defines chaotic behaviour control. The most effective style of control would be flexible behaviour control with chaotic behaviour control descriptive of least effective functioning. Slight inconsistencies should not be considered dysfunctional as long as family members understand the general range of acceptable functioning within their family system.

The concept of task accomplishment comes from the Process Model of Family Functioning that has evolved from the McMaster Model of Family Functioning. The primary difference between the two models is the former's emphasis on treatment. The Process Model is more dynamic in nature, recognizing that families "are neither entirely healthy nor entirely

pathological" and a model "should describe families that function well in some areas but poorly in others and differentiate those coping well from those that cope poorly" (Steinhauer, 1987, p. 86). This model also highlights the interrelatedness of the six dimensions described above. Task accomplishment is equivalent to problem solving in the McMaster Model. An additional dimension for consideration was added to the Process Model. The values and norms dimension was created to acknowledge the effect of both cultural and familial values and norms on family functioning. These values and norms have had consequences for the development of rules and ideals. In turn, the interplay between rules and ideals create norms. Moral and religious values as well as personal and social goals affect norms or behavioural standards. The norms that are created within a family serve to define the rules or standards within which the family lives.

It is probable, given the diverse symptomatology of FM and the day to day unpredictability of the symptom presentation, that many of the family functioning dimensions will be affected within FM families. However, the literature has suggested consistent difficulties in communication and role functioning in chronic pain families and therefore specific predictions can be made concerning these dimensions. Other dimensions of family functioning remain of interest because of the uniqueness of FM as a pain condition when compared to other chronic pain groups, like migraine headache and lower back pain. It is also conceivable that while family functioning may be affected, it may not be dysfunctional. The following sections will review the family functioning and chronic pain literature.

The Role of the Family in Chronic Pain

The role the family plays in the experience of chronic pain has been addressed from several vantage points in the literature, including the role of the family in the etiology and

perpetuation of pain. Chronic pain as a symptom of dysfunction somewhere in the family system, either in the patient themselves or in the family, has been considered. It has been suggested that once a pain symptom is established, it is maintained outside the patient him- or herself by the family unit. The "chosen" symptom of pain appears to be a function of family pain history - chronic pain patients tend to come from families where there is a higher incidence of pain complaints as compared to the general population (Payne & Norfleet, 1986). Another question that has been addressed concerns whether family dysfunction produces the pain symptom or whether the pain creates the problems in the family. This question is not easily answered for the same reason many of the conclusions in the chronic pain literature should be taken with caution - most reports are retrospective and premorbid data is often nonexistent. Therefore, functioning levels prior to the onset of pain are unknown and retrospective reports may overestimate the level of functioning pre-pain.

Despite the problems in clarifying the role the family plays in the onset of pain, considerable research into the family's role in maintaining pain has been completed. The observation has been made that pain is functional to some marriages, distracting the couple from other problems and creating a homeostasis within the marital relationship. The pain can serve to mask other more difficult or threatening issues. Hudgens (1979) found that pain was used in marriages to avoid sex, control others, punish others, and avoid close relationships. Roy (1987a) reported that in 80% of the couples he interviewed, the pain was serving to control the partner's behaviour. The use of pain as a control mechanism is not uncommon in chronic pain families. The patient may not be happy in the relationship or may sense the spouse is unhappy and in order to maintain the relationship, he or she may use the pain to keep the relationship functional.

Pain solicitous behaviour has also received some attention in the literature. In pain solicitous behaviour, the spouse “encourages” pain by certain behaviours. Lousberg, Schmidt, and Goenman (1992) discovered that spouses who were identified as more solicitous had partners who reported an increase in pain, had poor endurance, and exerted less effort in physical activity. Flor, Turk and Rudy (1989) also observed that the responses of significant others influenced pain impact ratings. Pain ratings were related to how solicitous the spouse/partner was. Clearly, spousal responses have an effect on the extent to which the patient is able to or not to function with chronic pain.

The role of the family in the maintenance of pain is an interesting avenue of research. However, given that it is not the focus, only an overview of the questions and conclusions from the research have been provided. This review will turn now to the impact of chronic pain on the family and its members. The impact literature has focussed primarily on the spouse. Some attention has been given to the impact of pain on the children. The following pages will provide an overview of the literature on the impact of chronic pain on the spouse, the children, and the family as a whole.

The Spouse

How chronic pain impacts on the spouse is often a function of how it operates in the marriage. “Pain behaviour is inevitable, but attribution of meaning to pain by the patient and the spouse is likely to be extremely varied” (Roy, 1989; p.17). Three broad areas of impact of chronic pain on the spouse have been identified as emotional distress, marital satisfaction, and sexual adjustment.

Emotional distress. Research has consistently shown that some form of emotional distress

is apparent in the spouse of a chronic pain patient. Of the different forms of emotional distress (i.e., depression, anxiety, etc.), depression seems to be the most frequently reported (Ahern et al., 1985; Chun, Turner, & Romano, 1993; Flor et al., 1987). The latter authors found a strong correlation between depression and pain symptoms in the spouses of chronic pain patients. The relationship between spouses' depression and the patients' coping was sufficiently strong for the authors to suggest that the spouses' reported symptoms may be a consequence of living with a chronic pain patient. In another study, a patient's average pain intensity and anger predicted spouse's depressed mood (Schwartz, Slater, Birchler, & Atkinson, 1991).

Rowat and Knafl (1985) asked 40 spouses of chronic pain patients for their definition and assessment of the chronic pain situation, how it had affected their lives, what factors contributed to these effects, and how they had coped with their partner's chronic pain. Eighty-three percent experienced a health disturbance that they directly attributed to the chronic pain. Sixty-nine percent of these health disturbances were emotional and 22% were physical. Spouses who were highly distressed reported sleep and appetite disturbances. They acknowledged feelings of tension, anxiety, fear, and sadness. Finally, they described family life with expressions like "pure hell" and "just existing." The spouses attributed much of their symptomatology to their partner's chronic pain. Naturally, these feelings and vegetative functioning disturbances would make it difficult to continue to function "normally."

Shanfield, Elliott, Heiman, Cope and Jones (1979) administered the Symptom Checklist - 90 to 44 chronic pain patients and their spouses for the purposes of comparing psychiatric distress levels between the two groups. They found that both pain patients and spouses reported significantly higher scores on the Global Severity Index than nonpatients. The strongest

correlations identified between patients and spouses were on scales measuring somatization, obsessive-compulsive behaviour, depression, and hostility.

Based on these selected studies, one could conclude that spouses' emotional and physical functioning may be affected by the presence of chronic pain in the family. Living with a person who is in a considerable amount of pain and discomfort and whose level of independent activity may be compromised is stressful. The stress and frustration of not being able to change the situation can lead to feelings of helplessness. The emotional distress reported by the spouses may arise from feelings of helplessness and frustration.

Sexual adjustment. As one might expect, sexual functioning may be adversely affected by chronic pain. When exploring chronic pain patients' and spouses' marital and sexual adjustment, Maruta, Osborne, Swanson, and Halling (1981) found that 78% of the patients and 84% of the spouses reported a reduction in sexual activity since the onset of pain. Half of the respondents felt that the quality of their sexual activity had deteriorated. Two thirds of the patients reported exacerbations in the pain they experienced after sexual activity. Seventy-seven percent of patients in another study noted a change in frequency of sexual activity and 67% were dissatisfied with that change (Flor et al., 1989).

Roy (1987b) concluded that spouses of chronic pain patients' sex lives suffer both on a quantitative and qualitative level. The pain impaired the frequency with which sexual interactions occurred. The loss of intimacy and accompanying emotional distress influenced the quality of the sexual encounters that did occur. One could expect, based on this brief review, that chronic pain couples may experience some change in their sexual relationship that, while serving to "reduce" pain, may impact on the satisfaction one or both partners have with the marital

relationship.

Marital satisfaction. Marital satisfaction has been the area of relationship functioning identified as being most profoundly affected by chronic pain. The chronic pain and marital satisfaction research has suggested that couples, in which one member has chronic pain, report lower marital satisfaction and adjustment. Marital dissatisfaction was particularly evident in the spouses of chronic pain patients (e.g., Payne & Norfleet, 1986; Roy, 1987b; Turk et al., 1987).

One study investigated marital and sexual adjustment in a sample of chronic pain patients and their spouses pre- and post-pain (Maruta et al., 1981). The results suggested that post-pain marital satisfaction ratings were lower than pre-pain ratings. This was especially true of the ratings of the pain-free spouse. A second study by Ahern et al. (1985), also addressed the issue of marital disturbance in chronic pain couples. One hundred and seventeen back pain patients attending a chronic pain treatment program and their spouses completed the Locke-Wallace Marital Adjustment Scale. Like Maruta et al., Ahern and colleagues found that pain-free spouses reported more marital discord and lower marital satisfaction than the patients. Kerns and Turk (1984) asked thirty male chronic pain patients and their wives to rate their marital satisfaction post-pain. Average marital satisfaction was found to fall just below the cut-off for marital disturbance. Nine of 30 couples scored in the extreme dissatisfaction range.

Another study examined the impact of chronic pain on the spouse in the marital, emotional, and physical realms (Flor et al., 1987). Fifty-eight patients and their spouses completed a questionnaire package including the Locke-Wallace Marital Adjustment Scale. Sixty-six percent of patients reported lowered marital satisfaction due to pain, but only 39% of the patients' scores were in the dissatisfied range. Fifty-one percent of spouses identified marital

dissatisfaction on their questionnaires. Again, the pain-free spouses were more dissatisfied than the pain patients'.

Block (1981), in a study of the spouses' response to chronic pain, concluded that the magnitude of the spouses' empathic responses to the patients' chronic pain was directly associated with expressed level of marital satisfaction. The more the spouse was able to understand and show genuine caring for the patients's pain experience, the more likely he or she was to feel satisfied in the marital relationship. Block and Boyer (1984) went on to examine the spouses' adjustment to chronic pain. They found that while the spouses' emotional adjustment was not highly distressed, reports of increased symptomatology were associated with poorer marital adjustment. These findings may shed light on why some marriages "survive" the chronic pain experience better than others: spouses who are more accepting and better able to cope with the pain may be better able to adjust to the current marital situation.

Romano, Turner and Clancy (1989) found that in female spouses, lower levels of marital satisfaction were associated with greater patient depression. Conversely, greater levels of depression in female spouses was associated with increased depression and lower marital satisfaction in patients. Depression in male spouses was unrelated to patient depression and marital satisfaction. The greater the physical, psychosocial, and total disability in male patients, the more likely their spouses reported higher levels of depression. Finally, in couples with a male patient, spouses were less satisfied with the relationship but this was not true for couples with a female patient. Kerns et al (1990) reported that global marital satisfaction and depressive symptoms are significantly inversely correlated. Manne and Zautra (1990) concluded that the quality of the marital interaction is predictive of a chronic pain couples' mental health. Schwartz

et al. (1991) felt that marital satisfaction may be an important mediating variable between patient anger and spousal depression. The relationship between emotional distress, marital satisfaction, and gender appears to be rather complex.

This review of the marital satisfaction literature provided support for the conclusion that marital satisfaction may change as a result of chronic pain. However, what remains to be seen is a) whether similar levels of marital dissatisfaction are present in FM families and b) whether the FM group differs significantly from chronic pain and illness-free controls. It is expected that, given the consistency of the results in the area of marital satisfaction, FM patients will report equivalent levels of dissatisfaction in their marriages as other chronic pain groups.

The primary weakness of the studies described above is the absence of a control group with which to compare marital satisfaction ratings. It would be difficult to dispute that many chronic pain couples are dissatisfied with their marriages, but are they any less satisfied than a matched sample from a normal or pain-free population? The current research was designed to address this question by sampling chronic pain couples from a homogeneous pain group and comparing them to a sample drawn from a demographically matched pain-free population. The next section will provide a review of the literature on the impact of chronic pain on the children in the family.

The Children

Seeking evidence of maladjustment has been the focus of the published research addressing the impact of chronic pain on the psychological and social adjustment of children in chronic pain families. The following paragraphs will summarize the findings of this literature.

Dura and Beck (1988) compared children whose mothers were diagnosed with chronic

pain to a group of children whose mothers were insulin-dependent diabetics and to a group of children from illness-free control families. The authors concluded that the chronic pain children were less happy than control group children, but not clinically depressed. Other measures of the children's adjustment did not differ across groups (i.e., anxiety). The authors felt that there was a trend indicative of more problems in the children of chronic pain patients over the two weeks prior to assessment. However, such a trend was weak at best (greatest mean difference was on a measure of social skills).

Mikail and von Baeyer (1990) compared children of chronic pain patients and children from an illness-free control group on measures of pain-related illness and general behavioural disturbance. They concluded that the pain group children differed significantly from the control group children on the degree of somatic concerns reported. The pain group children also scored higher on delinquency and maladjustment subscales and lower on the social skills subscale of a personality inventory than did control children.

Jamison and Walker (1992) found that 69% of children of chronic pain patients had stomach aches and abdominal pain, 66.6% had headaches, and 33% missed one or more weeks of school due to these physical complaints. The children who reported frequent pain complaints had a pain parent with greater functional disability, more pain behaviour, and higher levels of emotional distress.

Another study comparing children of chronic pain patients with control group children found that the former had more behaviour problems and lower social competence than control children (Chun et al., 1993). Furthermore, children of male chronic pain patients showed more deficits in social functioning than children of female chronic pain patients. Patient disability was

the only variable that meaningfully accounted for the variance in child behaviour problems.

A final study compared 21 children of men experiencing low back pain with 21 children of insulin dependent diabetics and with 21 children from a control group on measures of health behaviours and conduct problems (Rickard, 1988). Children of chronic low back pain patients were rated by teachers as more deviant. The teachers indicated that these children were more likely to miss school, cry or whine, complain, and visit the school nurse.

Roy (1989) noted that children are often more affected by pain in their fathers than in their mothers. This same conclusion was made by Chun and colleagues (1993). Fathers tend to withdraw more from children leaving the mother in the middle. Because the mother is overloaded with responsibility due to role disruptions she is often unable to meet the emotional demands of her children. There is a tendency for the child to be either scapegoated or treated overindulgently. Either way the children suffer emotionally.

This brief review of the impact on children indicates the presence of some behavioural problems, emotional distress, and health problems in children from chronic pain families. The problems experienced by these children may vary as a function of the affected parent's gender and his or her level of disability. It may have been interesting to assess the children's perceptions of family functioning in the current research, however given the mean age of chronic pain patients (mid to late 40's) it was felt that getting sufficient numbers of children still living at home would be difficult and that to use children outside the home could potentially contaminate the data (i.e., retrospective reports of family functioning that may be different from the present family functioning without the children present). The next section will review the impact of chronic pain on the family as a unit.

The Family

The majority of the literature that has directly addressed whether family functioning is disrupted by the presence of chronic pain in an adult member has treated the marital unit as representative of the family system (e.g., Roy, 1987a). The published literature has suggested that chronic pain in one parent disrupts all or most theoretical dimensions of family functioning. The literature that addresses the issue of family functioning in chronic pain families is limited in volume and in only one case uses the McMaster Model of Family Functioning as its basis. However, the following examples of the family functioning research suggest areas of family functioning that need further investigation and may be reflective of family functioning in FM families.

The family functioning literature involving FM patients as participants is not extensive and mention of disruptions in functioning is often circumspect rather than objective. Nicassio and Radojevic (1993) compared family functioning in a FM group with that of a rheumatoid arthritis (RA) group. Contrary to expectations, members of the FM group and the RA group were supportive of other family members and encouraged independent behaviour among family members. When disruptions to family cohesiveness were identified in FM families, it was noted that psychological functioning was a contributing factor. At the time of this review, Nicassio et al. (1993) was the only published study to address family functioning in FM families.

Speculations are possible about how FM families will fare in terms of family functioning based on the family functioning and chronic pain literature. Roy's (1987a) research presented data that provided the basis for forays into family functioning within chronic pain families. Roy (1987a) conducted clinical interviews with 20 chronic headache patients and their spouses. The

interviews were based on the McMaster Model of Family Functioning (MMFF). Roy concluded that all interviewed couples reported or demonstrated family functioning in the unhealthy range of all seven domains of functioning defined by the MMFF. Most couples blamed pain for the family's problems. The majority of the remaining research has not found as pervasive levels of dysfunction as Roy identified. This literature will be broken down into smaller sections reflective of the most relevant family functioning dimension. This will be followed by an assessment of methodological weaknesses of the existing literature.

Family communications. Hudgens (1979) completed a family-oriented treatment study with pain patients. She based her conclusions about family functioning on observations of family interactions during counselling sessions. Pretreatment observational assessments of family functioning with 24 patients and family members provided evidence of impaired communication and some enmeshment in 18 of the families.³ Seven of the families studied also provided specific evidence of role conflict.

Family adaptation. Another study focussed on 51 chronic pain patients and their spouses (Thomas & Roy, 1989). The authors measured family functioning with the Family Adaptability, Cohesion, and Expressiveness Scale (FACES-III) and concluded that the families' adaptability scores were in the chaotic range of functioning. However, patients' and spouses' responses on the cohesion dimension placed them in the connected range. This suggested there was some attempt at adaptation. The authors noted that the patients and spouses were in high agreement on responses. While this study does not suggest specific areas of functioning that may be

³ Enmeshment is defined as overinvolvement between family members to the extent that boundaries are significantly blurred.

dysfunctional in the proposed framework, it is valuable in that it points to some difficulties in family functioning (adaptability) that may underlie other reported problems.

Family role performance. While the literature suggests that family functioning is disrupted for most chronic pain families, some studies have found that levels of dysfunction may vary by pain diagnosis. For instance, Roy (1989) compared family functioning between headache and backache families and observed that headache families showed more flexibility in terms of role functioning. Headache patients and their spouses were more effective in the maintenance and management of the family's affairs. There seemed to be little evidence for disruption of role functioning in headache families when compared to backache families in which the well partner assumed all responsibility for the ill partner's role functioning. Thus, disruption of role functioning and the extent of that disruption cannot be uniformly assumed for all types of chronic pain.

Structure and control. Another study that compared migraine headache sufferers, tension headache sufferers, and headache-free controls found evidence for differences in functioning between headache groups (Ehde, Holm, & Metzger, 1991). These comparisons were based on data from the Family Environment Scale, the Family Assessment Device (based on the McMaster Model), and the Parameters of Pain Questionnaire. Migraine headache sufferers emphasized clear organization, structure, rules and overall control, and less encouragement of emotional expression than either tension headache sufferers or headache-free controls. This study suggests that more disabling forms of chronic pain may lend themselves to greater evidence of disrupted family functioning. Because of the diverse symptomatology of FM and its severity in terms of individual functioning, it could be expected that FM families may report

more disruption to functioning when compared to pain-free controls.

Methodological weaknesses. The aforementioned studies generally conclude that family functioning is disrupted by the presence of chronic pain in the family. However, there are three methodological weaknesses that may compromise the conclusions. First, Ehde et al. (1991) were the only ones to utilize a control group to compare the degree of dysfunction in pain families with "normal" or pain-free subjects. The suggestion that chronic pain families experience "more" dysfunction than normal families made in the family functioning literature may not be an accurate representation because a control group has not been used in the majority of studies exploring family functioning. The purpose of a control group is to control for relevant variables that may have an impact on the data under investigation. With respect to the current research, pain, illness and several demographic variables may be related to the functioning variables and therefore the control group can be used in a way the norms cannot when considering the responses.

Second, the pain samples used in the published literature were selected from a narrow population. These samples were drawn from pain clinics and other professional referrals. Such a sample is not representative of all chronic pain sufferers. For instance, Crooks, Tunks, Kalaher, and Roberts (1988) found that a pain clinic sample of pain sufferers differed significantly from a family practice sample of pain sufferers on almost all dimensions measuring adjustment to pain and its effect. The pain clinic sample scored consistently higher on these dimensions signifying maladjustment. Further potential contamination in estimates of family dysfunction may have occurred because many research participants were seeking treatment for family functioning problems related to chronic pain issues. The fact that the samples used have not been

representative of all chronic pain sufferers and have been, in some ways, self-selected might have inflated estimates of family dysfunction. Use of a more representative sample may help to provide a more representative estimate of the distribution of family functioning within FM families.

The last major weakness of the family functioning data in the pain literature has been the small sample sizes (ranging from 29-144 individuals, 16-177 couples, 21-24 families). Sample sizes in the upper range were rare, average sample sizes were 89 individuals, 66 couples, and 22 families. Much of the published literature has used small samples to assess family functioning. The small samples probably were a result of the use of samples of convenience rather than more general samples. A larger sample can provide a stronger estimate of the distribution of family functioning as well as providing more power to any conclusions made. Unfortunately, power estimates were not reported in the published literature making comparison difficult.

In order to address the weaknesses identified in the chronic pain and family functioning studies, the current research a) included a matched chronic pain and illness-free control group for the purposes of comparing them with FM families, b) sampled a broader range of chronic pain sufferers by soliciting participation from the FM Society of Manitoba membership (assuming not all were being treated actively by a pain clinic or attending a mental health clinic) and c) collected data from a larger number of subjects than researchers have typically used in earlier studies. Attempts were also made to control for families who reported being dysfunctional before developing FM by asking about previous counselling or therapy. The research design also incorporated the strengths of published chronic pain and family functioning studies by using a family functioning measure strongly grounded in theory, normed extensively,

and well-validated.

Conclusion

Based on the published literature it may appear safe to assume that the FM group, because FM is considered a chronic pain condition, will generate similar levels of family dysfunction and marital dissatisfaction to those in the published literature. However, FM remains poorly understood and its comparability to other chronic pain conditions, such as arthritis, low back pain, and headaches, is not clear. In addition to this concern is consideration of the differences that may occur as a result of the inclusion of a support group sample instead of a sample of pain sufferers attending a pain clinic (as used in the published literature) must be given. Further to the above, the addition of a matched control group to the research design makes prediction of dissatisfaction and dysfunction uncertain. Therefore, the purpose of this study was to explore in what way the FM group is similar to or different from a matched control group and the published literature on reported family functioning and marital satisfaction.

Method

Participants

One hundred and eighty-one members of the Fibromyalgia Support Group of Winnipeg were randomly selected (with replacement) from the membership list. Of the 181 contacted, 98 or 54% responded to the initial letter requesting their participation. Of this group, 59 agreed to participate, 24 were not eligible (not currently in a relationship), and 15 were not interested. Fifty-one couples returned completed questionnaires. One “couple,” composed of a mother and daughter dyad, was eliminated from further analysis. Fifty couples were included in the FM group. The final number of subjects in the FM group met the pre-analysis criteria for power. The

number of participants was selected based on the number of variables, a medium effect size and significance at the .01 level.

One hundred and forty-seven sets of questionnaires were sent home with students from the introductory subject pool at the University of Manitoba. One hundred and forty-four completed questionnaires were returned. Of these, 130 were found to be usable for the purposes of this research. From this sample, a matched control group was selected. (For information about the selection of this group, please see the results section.)

Procedure

FM participants were contacted by mail with a letter explaining the purpose of the study, potential participants' time commitment to the project, and requesting their consent to have a questionnaire package sent to them (See Appendix B). Each participant was called to confirm his or her participation and to verify his or her address. The questionnaire package (including a demographic questionnaire, the Family Assessment Measure-III, the Locke-Wallace Marital Adjustment Test, the West Haven-Yale Multidimensional Pain Inventory, and the Pain Disability Index) was mailed after this call. Allowing for three to five days mail delivery, the participants were contacted one week later to ensure they had received the package, to answer any questions, and to thank them for their participation. Each participant couple was provided with a self-addressed, stamped envelope in which to return the questionnaires.

If the questionnaires were not returned within two weeks of the first follow-up phone call, participants were again contacted to inquire about the status of the questionnaire package. Any outstanding questionnaires were followed up again after a second two week interval. If the questionnaires were not received after the third reminder phone call, the questionnaire package

was considered lost for purposes of this research.

The pain-free control group was drawn from the introductory psychology subject pool at the University of Manitoba. Students were initially recruited for a concurrent pain-related study. They were offered additional credits if their parents (or guardians) were married, lived in Winnipeg and surrounding areas, and did not report the presence of persistent pain. Students were asked to take home a questionnaire for each of their parents and upon the questionnaires' return were awarded course credit for their participation. Follow-up procedures were similar to those detailed above for the FM patients. The student was contacted one week after taking the package home if the questionnaires had not been returned. Two weeks following this phone call, a second call was made if questionnaires had not been received to determine the estimated return date. As above, a third phone call was made two weeks later and at that time if the questionnaires were not returned, it was considered lost.

Measures

Each questionnaire package contained the following questionnaires in addition to a demographic questionnaire tailored to each group (See Appendix C). Each member of the couple completed a questionnaire package.

Family Assessment Measure III. The FAM-III was designed to assess perceptions of family functioning from three different perspectives (Skinner, Steinhauer & Santa-Barbara, 1983). The first perspective focusses on the family as a system; the second, dyadic relationships within the family system are considered; and the third perspective is individual family member's assessment of his or her functioning within the family. The measure's strength lies in the fact that it is grounded in a comprehensive model of family functioning and each construct upon which

the measure is based is explicitly defined (Halvorsen, 1991).

The General Scale or the perspective that looks at the family as a system was used in the questionnaire package for both groups. It consists of 50 items (See Appendix D). Respondents choose from one of four categories (strongly agree, agree, disagree, and strongly disagree) that best captures how each statement describes their family. The measure produces an overall family functioning score and seven subscale scores that correspond with dimensions of family functioning described in the Process Model of Family Functioning (Task Accomplishment, Role Performance, Communication, Affective Expression, Involvement, Control, and Values and Norms). Internal consistency ranges from .65 to .87 on the General Scale and the General Scale has demonstrated an ability to discriminate healthy and unhealthy families (Clarkin & Glick, 1989; Halvorsen, 1991).

Locke-Wallace Marital Adjustment Test. The Locke-Wallace Marital Adjustment Test (LWMA; included in both group's packages) is composed of 15 items that measure how satisfied each member of a couple is with their marriage (See Appendix E; Locke & Wallace, 1959). Scores on the weighted version range from two to 158 with scores below 100 suggesting marital maladjustment or dissatisfaction. This test has been used extensively with chronic pain couples to assess their level of marital satisfaction (see Ahern et al., 1985; Block & Boyer, 1984; Kerns et al., 1990; Mohamed et al., 1978).

Split-half reliability estimates for the measure are acceptable with a reliability coefficient of .90 (Locke et al., 1959). The measure has demonstrated discriminant validity by correctly identifying couples who provided evidence of marital distress (Haynes, Follingstad, & Sullivan, 1979). These authors also provided evidence for the scales criterion validity with both objective

and observational measures.

West Haven-Yale Multidimensional Pain Inventory. The West Haven-Yale Multidimensional Pain Inventory (WHYMPI; pain package only) consists of 64 items measuring three areas of pain functioning (See Appendix F; Kerns, Turk, & Rudy, 1985). The first area was designed to assess pain severity, pain interference, dissatisfaction with functioning levels, appraisals of support, life control, problem solving, and feelings of competence. The second section allows the pain patient to rate how he or she feels others respond to pain-related behaviours. The final section assesses performance in areas of daily life functioning (Turk & Rudy, 1992). The first and second sections of the WHYMPI were included in the FM group packages. The first section was utilized because of its focus on pain intensity. The second section was included in the hopes of providing a possible explanation for expected difference between the FM and pain-free groups.

The norms upon which the WHYMPI are based tend to be specific to pain subgroups and the scale has good generalizability within those groups (Turk & Melzack, 1992). Internal reliability estimates range from .70 to .90 and test-retest reliabilities over a two week interval are very good ($r = .62$ to $.91$) (Bradley, Haile, & Jaworski, 1992). Validity studies of the WHYMPI scales suggest that the WHYMPI is a valid measure of pain functioning (Kerns et al., 1985; Kerns & Jacob, 1992; VonKorff, 1992).

Pain Disability Index. The Pain Disability Index (PDI) is a seven item inventory designed to assess the extent to which pain interferes with a range of life activities (Appendix G; Pollard, 1984). Respondents rate each item on a scale of zero (no interference) to ten (total interference). An initial investigation of this scale's psychometric properties with 108 subjects

revealed an internal consistency rating of .87 (Tait, Pollard, Margolis, Duckro, & Krause, 1987). A later study with a larger sample confirmed this estimate (Tait, Chibnall, & Krause, 1990).

Test-retest reliability at one week is .91 (Gronblad, et al., 1993). Test-retest reliability after two months pre-admission to a treatment program and post-release was more moderate ($r = .44$, $p < .001$; Tait et al., 1990). The authors felt that this correlation indicated “significant random variation in the PDI scores over a two month period” (p.177). Items on the PDI are significantly intercorrelated (Gronblad et al, 1993; Tait et al, 1987).

Assessments of the validity of the PDI have suggested evidence of good concurrent validity (Tait et al., 1990). Jerome and Gross (1991) concluded that the PDI scores “are related in a consistent manner to other meaningful variables which have been used to assess functional status in chronic pain patients” (p. 921).

Results

Descriptive Statistics

Fibromyalgia group. The fibromyalgia (FM) group consisted of 50 couples. All FM patients were female. The mean age of these couples was 48.53 years ($SD = 10.88$). One couple declared their marital status as “living together,” while the remaining couples were married. The couples had been together for an average of 21.80 years ($SD = 12.48$) and had an average of two children ($M = 1.88$, $SD = 1.09$). Respondents had completed an average of 12.93 years of education ($SD = 2.40$). Forty-eight percent of this group was employed full-time, with 11% employed part-time, 11% homemakers, 12% retired, and 18% unemployed. Sixty-three percent of the couples earned between 21 and 60 thousand dollars a year. Sixty-nine of 100 respondents reported that the family’s income had been affected by FM. That is, their income had been

lowered as a result of the FM patient not being able to be employed on a regular basis (or not at all).

Twenty-three respondents in the FM group reported having received individual counseling or therapy and 33 participants were taking medication for symptoms of depression. Nineteen reported receiving family counseling and, of those 19, 11 completed their treatment before the onset and diagnosis of FM.

FM sufferers' reported a mean pain duration of 8.81 years ($SD = 8.02$) with a range of two to 40 years. They described their pain as "continuous" with "extreme pain and fatigue." Respondents reported a mean pain rating of 4.29 on the WHYMPI ($SD = .95$; possible range of scores from one to six, where one was "no pain" and six was "extreme pain and suffering"). The average rating on the Pain Disability Index (PDI) for the pain patients was 38 out of 70 ($SD = 13.81$; 70 represents extreme disability).

FM group mean scores for the functioning variables, FAM-III and Locke-Wallace Marital Adjustment Test, are found in Table 2. Of the 100 respondents in this group only a small percentage reported scores in the dysfunctional range on any of the FAM's seven main dimensions (> 60) (Task Accomplishment = 20%; Role Performance = 33%; Communication = 26%; Affective Expression = 28%; Affective Involvement = 25%; Control = 19%; Values and Norms = 19%; Overall/Global Functioning = 20%) or in the dissatisfied range of the Locke-Wallace (< 100 ; 31%). Most important is the fact that none of the means scores for the functioning variables were found to be in the dysfunctional range of either measure.

Control group. The mean age of the 260 respondents in the control group was 47.21 years ($SD = 6.20$). All couples were married, had been together for an average of 23.45 years

Table 2

Descriptive Statistics for the Dependent Variables in the Clinical Group and Control Group

Family Functioning Variable	Clinical Group		Control Group	
	Mean	SD	Mean	SD
Task Accomplishment	52.90	14.57	49.55	10.66
Role Performance	54.04	12.90	51.60	9.87
Communication	51.80	11.91	50.42	9.34
Affective Expression	53.86	12.30	50.79	9.15
Involvement	52.48	11.79	49.80	8.59
Control	51.26	11.00	50.15	9.59
Values and Norms	50.16	10.75	49.54	9.42
Global Functioning ^a	52.30	10.59	50.30	7.22
Social Desirability	49.16	11.21	50.22	8.25
Defensiveness	46.82	12.91	49.32	11.00
Locke-Wallace Marital	109.82	29.84	110.83	22.20

Adjustment Test

Note: ^a Global Functioning is calculated as the average score of the first seven subscales of the FAM for each respondent.

(SD = 6.11) and had three children (M = 2.69; SD = 1.20). Most respondents (n = 219) were employed full and/or part-time in the work force and their annual income was between \$41,000 and \$80,000. They had completed an average of 13.86 years of education (SD = 2.66).

Surprisingly, 64 respondents in what was supposed to be a “pain-free” group reported experiencing some form of chronic pain and an additional 30 reported living with a chronic illness. (All of these respondents were excluded from the final pain-free control group.) In

addition to the questions about chronic pain and illness, the PDI was included in the control group questionnaire package as an exclusionary measure. Frequency distributions identified that 144 of 260 respondents had reported a PDI score greater than zero. A score greater than zero means that experienced pain was interfering with daily activities. Seventy-five of these 144 respondents did not report chronic pain or chronic illness, nor did they report any symptoms (on the checklist included in the questionnaire package) indicative of a serious physical condition comparable to chronic pain and illness (e.g., “morning stiffness,” “painful periods”). It was assumed that these persons were responding to the PDI in terms of the daily aches and pains experienced by many people in this age group. The control group reported a mean score of 7.45 out of 70 on this measure (SD = 6.96).

The mean responses on the family functioning and marital satisfaction variables are presented in Table 2. Within the pain-free group, only a small percentage (Task Accomplishment = scored in the dysfunctional or dissatisfied range of functioning on the FAM-III dimensions. Thirty percent reported dissatisfaction in their marriage. Again, it should be noted that all mean scores are in the average range of both measures.

Rationale and Procedure for Matching the Two Groups

Members of the control group were eliminated based on their responses to two questions: “Do you experience any form of pain on a regular basis?” and “Have you been diagnosed with a chronic illness?” Affirmative responses to one or both of these questions resulted in the elimination of the respondent and the spouse. The first level of the elimination process left 65 couples eligible for the final matching procedures. Thus, the distinguishing factor between the two groups was pain.

The group needed to be further reduced to 50 couples. Therefore, FM group pain severity ratings were correlated with selected demographic variables to determine which variables were most strongly related to pain and these variables were used to eliminate the remaining 15 couples. Pain severity was chosen as the defining variable because of its consistent strong showing as a pain descriptor variable in the pain literature. Pearson Correlational analysis revealed that employment status ($r = .50, p < .01$) and income ($r = -.31, p < .05$) were significantly correlated to pain severity. That is, as pain severity increased, full-time employment was less likely and income was reported to be in a lower bracket. However, matching the groups on employment status and income is problematic because the pain-free group is likely to have a higher income as a result of having two able-bodied workers in the family.

Preliminary attempts to match the two groups by eliminating all those persons scoring greater than zero on the PDI within the control group resulted in two groups that were significantly different on income and employment status. Inspection of the mean PDI scores for both the FM ($M = 38.00, SD = 13.81$) and pain-free group ($M = 5.80, SD = 9.11$) revealed a significant difference between groups, $t(359) = 15.54, p < .000$. Even though some members of the control group had responded to the PDI with scores greater than zero without reporting chronic pain or illness, the two groups were significantly different on the pain variable which was considered sufficient to differentiate the groups.

Because the control group tended to report higher income levels and higher employment status, matching included eliminating the top fifteen couples based on their income level.

Frequency distributions for the female members of both groups were used for matching as all

FM patients were females and were less employed than females in the control group. The top fifteen couples who made over \$80,000 were excluded.

Thus, fifty couples were retained in the control group. A profile of this group including the demographic and dependent variables is presented in Table 3. The FM and control group were compared on the two selected matching variables (employment status and income) and the PDI. The groups significantly differed on PDI (FM: $M = 38.00$, $SD = 13.81$, control: $M = 3.64$, $SD = 5.75$), $t(199) = 16.56$, $p < .01$, and employment status (FM: $M = 2.41$, $SD = 1.60$, control $M = 1.62$, $SD = 1.03$), $t(199) = 4.16$, $p < .01$. They did not differ on income. The employment status difference was concerning. Because employment status was significantly correlated with PDI (FM: $r = .45$, $p < .01$; control $r = .12$, $p < .05$), it would have been difficult to match these two groups on this variable regardless of the procedure used. This is likely because of the impact pain disability has on the employment status of the FM group. Independent sample t-tests on the remaining demographic variables were not significant except for the number of children (FM: $M = 1.88$, $SD = 1.08$; control $M = 2.63$, $SD = 2.63$), $t(199) = -4.90$, $p < .01$). Therefore, it is possible that any differences between the groups may be attributable to pain, employment status, or number of children or to membership in a support group and willingness to participate. The impact of the latter two variables remains obscure.

Exploratory Analysis

A 2 x 2 Analysis of Covariance was completed for each of the seven dimensions of the FAM-III, the Global Functioning Scale, two styles of responding scores and the LWMA score. The two groups were pain versus control and male versus female. Refer to Table 4 for a summary of these results. Defensiveness as a style of responding was found to differ

Table 3.

A Profile of the Selected Control Group Couples: Demographic and Dependent Variables

Variable	Mean	Standard
		Deviation
Age	46.56	5.66
Length of Marriage	22.71	3.45
Number of Children	2.63	1.07
Education	13.31	2.53
Income	2.98 ^a	1.14
Employment Status	1.62 ^b	1.03
Pain Disability Index	3.64	5.75
Task Accomplishment	50.12	9.35
Role Performance	52.56	9.19
Communication	50.36	8.98
Affective Expression	51.3	7.51
Involvement	51.62	7.96
Control	51.84	8.86
Values and Norms	51.5	8.58
Social Desirability	49.8	7.78
Defensiveness	50.77	11.24
LWMA	108.66	20.56

Note: ^a Income between 20,000 and 40,000 dollars

^b Employed between full and part time on average

significantly between the pain and control groups. The pain group was less defensive in their responding than the control group. Role performance and control differed between the gender

Table 4.

Summary of Analysis of Variance

Functioning Variables	MS	F	p-value
Task Accomplishment			
Group	421.65	2.79	.096
Sex	2.36	0.02	.901
Group by Sex	56.60	0.38	.541
Role Performance			
Group	110.25	0.90	.344
Sex	771.23	6.29	.013
Group by Sex	100.67	0.82	.366
Communication			
Group	117.61	1.06	.305
Sex	27.82	0.25	.617
Group by Sex	239.97	2.16	.143
Affective Expression			
Group	331.09	3.14	.078
Sex	7.03	0.07	.796
Group by Sex	4.78	0.05	.832

Table 4 (continued)

Functioning Variables	MS	F	p-value
Involvement			
Group	37.87	0.37	.541
Sex	256.34	2.53	.113
Group by Sex	54.89	0.34	.462
Control			
Group	12.03	0.12	.727
Sex	530.97	5.39	.021
Group by Sex	18.87	.19	.662
Values and Norms			
Group	70.35	0.74	.390
Sex	102.31	1.08	.300
Group by Sex	16.33	0.17	.678
Global Functioning			
Group	58.79	0.76	.385
Sex	3.36	0.04	.835
Group by Sex	42.83	0.55	.458
Defensiveness			
Group	794.89	5.53	.020
Sex	516.41	3.59	.060
Group by Sex	319.08	2.22	.138

Table 4 (continued)

Functioning Variables	MS	F	p-value
Social Desirability			
Group	24.47	0.26	.607
Sex	192.39	2.08	.151
Group by Sex	127.49	1.38	.242
LWMA			
Group	56.31	0.09	.771
Sex	705.52	1.07	.302
Group by Sex	56.18	0.09	.771

Note: within + residual df = 196, df for group, sex, and group by sex = 1

groups. Men emphasized control more than women and women were more concerned with role performance. An analysis of covariance considering employment status and number of children differences between the pain and control groups reduced the difference on the defensiveness scale to nonsignificance suggesting that one of the two variables was related to style of responding. Separate analysis of covariance for each variable revealed that employment status was the variable that might have caused the difference. Observed power estimates of these comparisons ranged from .035 to .701. These power estimates are not sufficient to make the definitive conclusion that the absence of differences is in fact true.

Post-Hoc Analyses

The role of pain. Based on the results reported above, one notes the discrepancy between the current research and the published research. The published research has identified clinically

significant levels of dysfunction in chronic pain families and considerable dissatisfaction in the marriage between a pain patient and spouse. The current research has only noted a difference between the pain and control groups that is related to style of responding, not to functioning levels. The question then becomes what role does pain play, if any, in family functioning and marital satisfaction? The PDI correlated significantly with only three of the functioning variables in the pain group. Of most interest is the fact that as PDI scores increased so did scores on the Role Performance dimension suggesting that pain was related to decreased satisfaction with members' maintenance of defined roles. Also noted, as pain disability scores increased, participants became less defensive ($r = -.36, p < .05$) and less socially desirable ($r = -.36, p < .05$) in their responding. Pain severity was unrelated to the functioning variables under consideration. This suggests that the level of perceived pain is less important than the level of perceived disability due to the pain in the maintenance of family functioning.

Independent t-tests comparing a "dysfunctional" group from within the FM group (see Table 5) with a "healthy" group from the same group was completed. The "dysfunctional" group reported scores greater than 60 on one or all of the seven dimensions of the FAM and less than 100 on the LWMA. Once the two groups on each separate dimension were defined their PDI scores were compared. Pain Disability Index scores did not differentiate the two groups. That is, family membership in the group of persons who reported clinically significant problems (scores > 60) on the FAM or scored less than 100 on the LWMA did not differ from the pain group, whose scores were less than 60 on the FAM and greater than 100 on the LWMA, on the level of disability due to pain reported (Refer to Table 6).

When comparing those who reported receiving family counseling with those who did

Table 5.

Descriptive Statistics for Respondents Reporting Scores in the Dysfunctional or Dissatisfied Range on the Dependent Variables.

Functioning Variable	Number of		Standard
	Respondents	Mean	Deviation
Task Accomplishment	20	74.8	12.08
Role Performance	19	73.47	9.73
Communication	16	71.5	8.34
Affective Expression	28	69.71	7.4
Involvement	19	71.05	8.85
Control	19	68.32	6.16
Values and Norms	12	70	5.53
Global Functioning	17	69.41	7.24
Social Desirability	12	69.5	5.27
Defensiveness	17	67.88	6.18
LWMA	31	74.94	23.99

not, within the clinical group, it was found that the groups differed on the Control, Communication, Defensiveness, Global Functioning, Social Desirability, Task Accomplishment, and Values and Norms dimensions. They also differed on marital satisfaction. Refer to Table 7 for a summary of these results.

Gender differences. A close examination of the chronic pain research reveals a considerable number of chronic pain patients to be female. In addition, this researcher has gotten the impression that women may tend to identify more problems than males when it comes to

Table 6

Comparison of Pain Disability Index Scores Between a “Dysfunctional” Group and a “Healthy” Functioning Group

Functioning Variables	Dysfunctional Group		Healthy Group		t
	M	SD	M	SD	
Task Accomplishment	42	10.96	36.67	14.53	1.16
Role Performance	38.6	12.61	37.57	14.82	0.25
Communication	40.27	14.87	36.97	13.41	0.76
Affective Expression	39.35	14	37.26	13.88	0.5
Involvement	39.82	17.01	37.46	12.94	0.49
Control	38.1	10.16	37.97	14.74	0.03
Values and Norms	36.2	16.35	38.47	13.27	-0.46
Global Functioning	39.36	16.06	37.59	13.29	0.37
LWMA	39.86	10.66	37.24	14.99	0.59

Note: all data is from the pain group and mean scores reported are Pain Disability Index scores.

issues like family functioning, marital satisfaction, etc. Preliminary analysis of the FM group suggested gender differences. Correlations between the PDI, the FAM dimensions and the LWMA revealed that Role Performance was significantly correlated with PDI for the female FM patients ($r = .29, p < .05$) but the spouses' responses on the same dimension were not significantly related to the patients' level of pain disability. This suggested that there was a difference between the pain patients and their spouses that could be attributable to either pain or gender. Collapsing the pain-free and FM groups along gender lines and subjecting them to t-tests identified differences on the dimensions of Control and Role Performance. Men ($M = 53.17, SD$

Table 7

Differences in Reported Family Dysfunction between Those who Sought Family Counseling and Those who Did Not

Functioning Variables	Family Therapy		No Family		t
	Group		Therapy		
	M	SD	M	SD	
Task Accomplishment	62.53	16	50.8	13.35	3.31***
Role Performance	58.53	13.15	53.13	12.71	1.65
Communication	58.42	13.12	50.42	11.09	2.73***
Affective Expression	58.42	12.14	52.9	12.2	1.77
Involvement	56.32	11.49	51.75	11.72	1.53
Control	56.53	9.93	50.13	10.96	2.33*
Values and Norms	54.84	9.17	49.07	10.92	2.13*
Global Functioning	57.47	11.15	51.2	10.16	2.37*
Defensiveness	40.53	11.07	48.22	12.99	-2.38*
Social Desirability	42.11	8.55	50.82	11.23	-3.17***
LWMA	93.74	32.76	113.32	28.01	-2.65*
PDI	41.73	11.75	36.89	14.32	1.02
Pain Severity	4.25	0.563	4.31	1.05	-0.18

* $p < .05$

*** $p < .000$

= 9.86) responded to more items that emphasized control than women ($M = 49.90$, $SD = 9.90$), t (199) = -2.34, $p < .05$. Women ($M = 55.24$, $SD = 12.76$) reported more problems in the area of role performance than men ($M = 51.27$, $SD = 9.02$), t (199) = 2.53, $p < .05$. However, all scores

were in the average range of functioning on the FAM.

Even given the absence of differences between groups there was some question as to whether the pain patients (all female) differed from their pain-free counterparts. Independent t-tests found differences between the groups on the extent to which the women were defensive in their responding, $t(99) = -2.69, p < .01$. The women in the FM group ($M = 44.00, SD = 13.10$) were less defensive on the FAM than the women in the pain-free group ($M = 50.53, SD = 11.04$) but still within average ranges.

The next question that arose concerned the pain group alone: "Did the pain patients differ from their spouses on any functioning variables?" Again, Defensiveness was significantly different between the two groups. Although in the average range of responses, the women ($M = 44.00, SD = 13.10$) were less defensive than the men ($M = 49.76, SD = 12.15$), $t(99) = -2.28, p < .05$. They also differed on Role Performance. The women (or pain patients) ($M = 56.67, SD = 14.85$) identified more problems in role performance, approaching the dysfunctional or clinical range ($M = 51.31, SD = 9.93$) $t(99) = 2.13, p < .05$. This naturally leads one to question whether similar differences are found in terms of gender differences in the pain-free group or is this difference unique to the pain group? Only on Role Performance were the women in the pain-free group less satisfied with the family members' maintenance of defined role responsibilities, $t(99) = 3.55, p < .01$.

Discussion

The data collected in this investigation indicates that participants in the Fibromyalgia (FM) chronic pain group did not differ from participants in the control group on the variables of self-reported family functioning and marital satisfaction. This finding contradicts that of the

published literature. The results suggested that while some dysfunction was reported by FM families, the level of this dysfunction was less than levels reported by chronic pain families in previous studies and was not significantly different from levels of dysfunction reported by the control group in this study. Basulo-Kunzer, Diamond, Maiszewski, Weyermann, and Reed (1991) made similar conclusions when comparing pain and pain-free groups on family functioning. Though a substantial percentage of the FM group reported dysfunction on at least one dimension of family functioning, a comparison between FM and control group distributions revealed an equivalent level of family dysfunction and marital dissatisfaction.

The two groups did differ on levels of defensiveness in responding. The pain group was found to be less defensive in their responding, although scores were within the average range. A number of theories could be put forward to explain this difference. First, the pain group may feel that they have nothing to hide about their lives as they already feel their lives are significantly disrupted by the pain. A second theory relates to the fact the FM group was drawn from a support group. Perhaps membership in a support group contributes to a less defensive presentation of problems. Neither of these hypotheses can be addressed by the data.

As well, it was found that when the persons who reported receiving family counseling (within the FM group) were compared to those who had not, significant differences were noted on several dimensions of family functioning. These results are consistent with the published literature in that those participants reported considerable dysfunction and marital dissatisfaction. The participants in the published literature were selected from a population requesting or already receiving support for what they described as pain-related problems. However, the two current groups did not differ on level of reported pain disability suggested in the literature to be

variable responsible for the reported dysfunction. This combined evidence suggests that family dysfunction may not be directly related to the pain reported. Rather, it seems that the family functioning problems reported in Table 7 may have been there premorbidly. Pain may have simply exacerbated already existing problems. There was no difference in family functioning or marital satisfaction between those who has received family counseling before or after the onset of FM.

Several explanations can account for the contradictory results identified by this research. First, the FM group was selected from a different population base than those groups selected in the published literature. Second, the sample size used in this study was much larger than samples studied in the published literature. Third, the published literature does not report comparisons of FM families with control groups. Each of these points will be discussed in turn.

Research with Self-Help Populations

As most of the published chronic pain literature has based its findings on results that have been compiled using pain clinic populations, reports from such patients may not represent the conditions of all people who experience chronic pain. Specifically, previously published literature has drawn its samples primarily from a population of patients who in many cases are being treated for a variety of pain and relationship problems. Therefore, researchers who investigate such populations may be biasing the results of their studies from the outset and may be ignoring the experience of chronic pain patients who do not attend pain clinics. This problem is especially important considering the fact that only a very small number of chronic pain patients recruited from a regional FM support group in the current study reported receiving therapy for relationship problems. Nor did many report receiving any form of intervention at a mental health level (other than medication for depression) or receiving treatment at a pain clinic (the majority of respondents

were self-managing their pain using a variety of physical therapies including exercise and Tai Chi). Basulo-Kunzer et al. (1991) made conclusions similar to the current research when they used a broader sample of subjects in their study comparing couples experiencing chronic headaches to a sample of couples without chronic pain. Such findings suggest that while some persons may experience extensive family functioning difficulties, they may not be representative of the entire chronic pain population. Furthermore, when the reports of such pain patients are embedded in the results of a more heterogenous chronic pain group, the impact of their experience on an entire study's results may be diminished due to the heterogenous nature of that group.

Conversely, it is possible that while the FM support group may differ from a sample selected from a pain clinic population, it is still a self-selecting sample. Therefore, the FM sample used in this study may not truly be representative of all persons suffering with FM.

Research with large sample sizes

Another difficulty with previous research on chronic pain families has been the small sample sizes reported in the literature. This, of course, is a complication that arises when specific populations are requested to participate, for the number of consenting participants is much smaller in this instance. Theoretically, by increasing the sample size the power of conclusions are made stronger. However, despite this relationship, observed power estimates were not strong enough to conclude that the increase in sample size was a significant contributor to the absence of observed differences.

Research with control groups

The most significant factor to have impacted findings in the current study was probably the introduction of a control group. The purpose of the control group was to place the clinical group in a different context, a context relative to other populations, and to compare the highly selected and isolated chronic pain group to a pain-free group. Despite its apparent intuitive value, few researchers have used control groups in the published literature.

Based on what is reported in the literature, it is tempting to conclude that chronic pain families experience considerable family dysfunction. It is also clear that the percentages of families reporting dysfunction have been considerable. It is even more tempting to attribute the family dysfunction reported to "pain" because of the nature of the population that is being studied, how chronic pain families respond to pain, their observed behaviour, and especially the participants' own attributions for their problems (to pain). However, because the data from pain-clinic samples has not been consistently compared to a matched group without chronic pain, the responses of the researched pain group have not been placed in a meaningful context. That is, the published literature has not been able to establish that the dysfunction reported by the chronic pain group is, in fact, greater than that of another population, most importantly, a pain-free group.

There has also been a tendency to use the norms of a research measure as the means to establish evidence of dysfunction. However, this may not be the most effective way to make the desired comparison. The norms are valuable in terms of calculating and identifying clinical levels of dysfunction. However, the norms are subject to a number of factors, including the sociological conditions at the time of developing the norms. They are developed to be as

adequately representative of the population as possible. As such it is difficult to assume that the pain group's scores are being compared to a pain-free group that is as similar to them as possible without the norms. The control group contributes to a more confident assumption of such differences, or in the case of this research, similarities.

In the current study, the chronic pain group, while reporting some functioning problems, did not differ from the matched control group. Ehde et al. (1991) and Basulo-Kunzer et al. (1991) also used control groups in their research. On the variable of family functioning, the former researchers found some small differences between groups and the latter found no differences. In conjunction with the results of the present study, such research suggests that control groups should be a requirement to future methodologies researching differences between pain-free and chronic pain groups. Most importantly, the findings of the current research suggests that researchers who have not used control groups in their methodologies must carefully consider their findings before concluding that differences exist between pain-free and chronic pain groups.

Non-significant Group Differences

There are several arguments that could explain why few significant differences were found between chronic pain and pain-free groups on these variables. First, it is possible that chronic pain families may have attributed their relationship difficulties to the presence of pain. Second, it is possible that the pain experience served to exacerbate pre-existing difficulties. Blaming pain for dysfunction is a common attribution for people who suffer from chronic pain and it is conceivable that pain participants believed pain to be the source of their dysfunction in the absence of premorbid pain estimates for family functioning. Furthermore, any estimates of

premorbid functioning made by chronic pain families could be coloured by the presence of disabling chronic pain (the grass always looks greener on the other side of the fence). Regardless of the speculation, the value of a control group to anchor the responses of the pain group should be clear.

A third factor that may have contributed to the non-discovery of significant differences may be due to a pain-free group that was not “pain free”. The average pain disability rating of the control group was below seven on a scale of zero to 70. This rating could be considered a very low rate of disability, near “not at all disabled” on the Pain Disability Index. All those who reported chronic pain or illness were eliminated from the final analyses. Many of those respondents included in the final sample reported a lower level of disability due to some form of unidentified pain. The literature has repeatedly emphasized that pain is a matter of perception (e.g. Roy, Thomas, & Makarenko, 1989; Thomas, Roy, Cook, & Marykuca, 1992). One need only consult the pain threshold literature to find evidence for the role of perception in pain estimation. Therefore, despite the minimal amount of disability reported by the matched control group, it is conceivable that this disability was related to responses on the dependent variable so as to bring the control group’s scores closer to the pain group’s scores.

However, regardless of the possible impact that the control group’s disability may have had on the results, the differences in disability reported between the groups does suggest that the pain experienced by the two groups was different in some form or quality. It may be likely that the pain experienced by the control group had more to do with typical health rather than injury or illness (e.g., daily aches and pains). The absence of differences between the groups on the functioning variables could have been a function of the fact that there was pain experienced

within the control group, although this is unlikely given the vast differences in reported disability levels. This is especially true given the fact that pain disability was most strongly related to some of the reported dysfunction.

Fourth, it is possible that while the clinical and control families have similar levels of distress in family functioning, the source of the distress is different but of similar magnitude. For the clinical group, pain may be the primary stressor influencing family functioning. The control group may be experiencing individual stressors of a similar magnitude that inflate distress levels and account for the absence of differences.

A final possibility that explains above non-significant differences is the nature of the pain group. FM is a “new “ and controversial pain diagnosis. The nature and quality of the pain and the vast number of accompanying symptoms and syndromes makes this a unique group. Because limited research into the psychosocial impact of FM has been conducted thus far, the present results may be true of FM alone and not reflective of other, more well-understood chronic pain conditions. To date, Nicassio and Radojevic (1993) have been the only authors to compare FM to another pain condition, though unsuccessful in confirming expected differences.

In light of the proposed explanations for the absence of differences resulting from this investigation, how can these results be interpreted? If the above conclusions are confirmed through future research, one must not erroneously conclude that chronic pain has no impact on family dynamics and overall family functioning. Rather, a conversation with a family that experiences pain on a daily basis would continue to reveal that pain affects the dynamics of the marital relationship and the family in a way that creates a systemic imbalance. Previous literature also made this observation (e.g., Kopp et al., 1995; Roy, 1985). Because of the

frustration associated with the course, treatment, intensity and frequency of chronic pain, the imbalance that is created may not be easily resolved. Therefore, a chronic stressor can be created in the system (discussed extensively in the literature (e.g., Woods & Lewis, 1995; Yates, Bensley, Lalonde, Lewis & Woods, 1995)) and can have tremendous impact on family dynamics.

Such chronic stressors can result in many different family experiences. Most commonly, some families fall apart (i.e., divorce or separation), some seek help from mental health professionals and some are able to effectively resolve an imbalance like chronic pain and are not likely to seek treatment for family problems. All three experiences are represented by families in the current study's FM group. Though the first and second experiences are certainly well-represented in the published literature, the latter experience remains poorly researched in the literature. Roy (1990) alluded to this group as "effective" functioners and suggested that some families are able to resolve an imbalance like chronic pain over time and are therefore unlikely to seek treatment for family problems.

The current results suggested that, as a whole group, FM families reported similar levels of functional and dysfunctional behaviour as that of the matched control group. This also suggested that some FM families have successfully negotiated the crisis while others have not. Like many families faced with challenges, a certain proportion of FM families appeared to have adapted to the challenges of FM and have changed roles within the family. Conversely, a certain proportion did not change roles and may have required or will require assistance in managing functioning difficulties. Such a group has performed a prominent role in the conclusions made by pain researchers because these are the persons who have provided the data upon which

chronic pain family functioning estimates are based. It is also important to keep in mind that the families that have sought treatment for functioning difficulties may have had similar problems that predated the onset and diagnosis of FM. The role and level pre-morbid dysfunction has yet to be clearly identified.

Implications of the Findings to Research and Applied Work

The above conclusions inspire a reconsideration of the possible resiliency of chronic pain families. Many researchers have suggested that chronic pain is the “glue” that holds some families together (e.g., Roy, 1985; Turk, Kerns, & Rosenberg, 1992). The results of the current study suggest that pain may not have had a direct relationship to a family’s self-reported dysfunction, yet it does not rule out whether the pain acts as the “glue.” Consequently, the following two questions must be asked: (a) “Is pain in fact what keeps a family together in the event of chronic-pain stressors or does some other variable play a role?” and (b) “What enables some families to withstand the impact of chronic pain when others cannot?”

A review of the FM group data revealed “Role Performance” to be the one family functioning dimension on which participants reported the greatest dysfunction. This dimension refers to the family’s ability to define and perform assigned roles. Reflection on the last time a family member had the flu in one’s own family can illustrate the impact that one person’s absence can have on the fluidity of day-to-day family functioning. Over time, families come to depend on the roles that each family member performs and appear to have difficulty coping when those members do not perform their expected functions. For example, a common critical junction for FM families occurs when one member is no longer able to perform an expected role at all. When such an incident occurs the some or all family members must quickly take on new

roles or else fall apart as the self-same unit.

To extend this concept even further, one could consider a traditional family constellation: father as the primary wage earner and mother as the primary caregiver employed in the home. What is likely to happen when the mother is diagnosed with a chronic pain condition, like FM? Several mothers have reported to the present researcher that they have attempted to maintain as much normality as they can for their children, but much of their regular routine has fallen apart as a consequence of living with FM. The task of providing breakfast and getting the children to school can be entirely exhausting. The end result is the “Mom” spending the morning on the couch recuperating. In the case of the traditional family it would require a monumental reorganization of role functions to ensure that the family continued to operate effectively. Such a task is not easy and it does not happen smoothly or without effort. What happens when some family members refuse to adjust their role responsibilities to accommodate for the reduced role functioning of another member? It is this challenge that is strongly related to the break down of family functioning and this is the area in which mental health professionals often intervene. It is not difficult to understand role performance as the dimension on which chronic pain has its greatest impact. Chronic pain keeps a family member from participating in daily tasks and forces a change in the roles of other members.

To summarize, many chronic pain families do manage to make the necessary adaptations in family functioning. Therefore, professionals in therapeutic contact with such families should remember the following two strategies: (a) one should continue to reinforce how families are successfully adapting in response to the pain and (b) one should not focus exclusively on what adaptation strategies are not working. Similarly, it may be important to learn why some families

adapt better than others. The answers to this question could then be used to develop ways to assist those who do not successfully manage the role performance transition. Perhaps most importantly, once the skills used in successful adaptation are understood, they can be shared with families early in the chronic pain experience (e.g., this is what you can expect within your family as a result of the pain you experience; here are some ways you can address these issues before they become problems). Chronic pain is usually “disempowering” for everybody involved. Not only does the patient lose control of their own body, the family loses the element of predictability that the pain patient provided in the past in terms of behaviour and emotional connections. Consequently, a mental health professional should understand the importance of providing control whenever possible. Such control can be provided by preparing families to address problems that experience and research suggests are likely to arise from the presence of chronic pain. It is important to learn from those who doing well rather than dwell on those who are not.

Limitations

The research design and measures used in this investigation were not selected to help provide insight into the factors and circumstances that may be related to family dysfunction, nor did the research design and measures permit an understanding of the perceived impact of FM on family members. That is, how chronic pain impacts on the family could not be captured by existing objective measures that focus on dimensions of chronic pain.

Self-report measures, like those used in the current research, are notoriously biased in terms of how the respondent wishes their answers to be interpreted. A social desirability and a defensiveness scale on the FAM-III provided an estimate of response bias and allowed the

consideration of such bias when the results were interpreted. However, a self-report measure does not provide as reliable or as discerning data as interview or observation procedures would have.

Given such limitations, it is conceivable that both groups may have been under-reporting the extent of dysfunction they experienced. Conversely, equivalent numbers may have over-reported. Over-reporting is relatively unlikely in the control group as they were offered nothing in return for their participation. The FM group, however, was offered the possibility of selection to a second project based on their responses, a project that involved the provision of family therapy at no charge. If either group was motivated to over-report, it would have been the FM group. As noted above, the FM group did not differ from the control group and thus it is unlikely that this group over-reported. Despite the appearance that data collected from both groups is reliable, the relevance of using self-report measures must still be considered when evaluating the current results and in the design and preparation of future research.

A considerable proportion of potential respondents who were ineligible for participation based on the inclusion criteria of the study reported having been divorced and many blamed their family's breakdown on the pain. Data from these divorced families may have provided a different picture of the impact of pain on family functioning. This data could have allowed comparisons between the families that have remained intact and those who have not. Several participants appeared to be in their second marriage and this subpopulation may have affected the results by inflating normal functioning estimates and forcing the mean scores into the normal range on the measures used or affected the data by some similar mechanism.

Another limitation of this research was those persons who refused to participate or did

not respond to the mailed request. Little is known of who these respondents were and what factors may have entered into their decision to not participate. This group may have differed significantly from those who did choose to participate, may have been in significant distress, may have been falling apart, or may have been functioning effectively. These unknowns may limit the external validity of the current findings. One could conclude that as a whole, FM families reported functioning levels that parallel that of a pain-free group. Because of the broad nature of the sample pool, it would be tempting to suggest that this group represents all FM sufferers who could have been selected for inclusion. However, such a conclusion without caveats regarding those who did not participate would be inappropriate. Therefore, the most important conclusion to make is that, on average, chronic pain families were able to maintain functioning in the normal ranges of two objective family functioning measures.

A final limitation of the current research, and a point made by Kopp et al. (1995), is the fact that a very small unit of family, the couple, responded to the questionnaires. The decision to use only the couple was based on simplicity in terms of comparison to the previously published literature. However, it is well understood, and also suggested by the current data, that marital satisfaction mediates the level of dysfunction identified (e.g., Yates et al., 1995). By only requesting responses from the marital unit, a limited perspective on family functioning is achieved. Therefore, future research should increase the number of family respondents.

Future Directions in Family Functioning and FM Research

The absence of differences between the FM and the matched control group provides several possibilities for future research. First, if the current study could be replicated given the improvements addressed in the discussion section, such results would be valuable to the chronic

pain literature. The most important improvements for future studies should include the use of interviews and observations, inclusion of a divorced group, use of more family members as respondents, and more data describing nonparticipants motivations.

A second direction for future research could focus on what factors enable some families to reorganize in a way that fosters successful functioning. As the current literature seems to focus on those families that do not adapt successfully, very little data explains what factors help many families adapt regardless of chronic pain stressors. Therefore, with a greater focus on families that adapt successfully, the literature could provide considerable insight into necessary treatment conditions for families that are struggling with adaptation strategies. Furthermore, greater focus in this area could provide a better understanding concerning the fit of chronic pain families on the family functioning continuum. To date, most of the literature describes chronic pain families as being poor at adapting to chaos and stress. In light of the current research it is important to reform the current view of chronic pain families on the family functioning continuum.

Finally, a third direction for future research could determine in what way pain impacts on a family's ability to function. For example, is the onset of chronic pain often the final event that precipitates the break up of a family or is it often the source of future family difficulties? Common sense suggests that both perspectives are equally valid. The pain might serve to highlight already existing problems or may provide a challenge to an already tenuous system. This struggling system may be unable to successfully respond to the challenge of pain. Gathering estimates of premorbid functioning has been notoriously fraught with methodological problems and internal validity biases. Rather than depending on the family itself to evaluate its own

functioning prior to the pain, close family and friends may be helpful in providing less biased estimates of functioning. Regardless of how such data collection might be accomplished, an understanding of the role and impact of pain on the family is crucial to the advancement of the literature.

A Final Thought

The results of this study suggest that the current understanding of family functioning in chronic pain families may not be as clear or as simple as suggested by the published literature. The chronic pain population described by the published literature may not present a straightforward picture of how pain affects a family's ability to function from day to day. Clearly, further investigation into the nature of family functioning is necessary.

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Appendix A

Chronic Pain and Depression: An Unresolved Debate

Research published over the past several decades has clearly established a link between pain and depression. Lindsay and Wyckoff (1981) summarized the existing data and concluded that "an overall incidence of depression in chronic pain [is] greater than would occur by chance" (p. 571). For example, Kramlinger, Swanson, and Maruta (1983) assessed 100 chronic pain patients, attending a pain clinic, for depression and found that 25% received a definite diagnosis of depression and a further 39% showed significant evidence of undiagnosed depression. It was also found that for those whose primary diagnosis was depression, a substantial percentage of psychiatric patients with depression also complained of pain (e.g. vonKnorring, Perris, Eisenmann, Eriksson, & Perris, 1983). These two observations are examples of the conflicting literature that has prompted an as yet unresolved debate over the relationship between pain and depression. A number of theoretical positions have been presented to explain the relationship between pain and depression and these positions will be summarized briefly below.

The first of these theoretical positions states that chronic pain is a manifestation of depression, labelled "masked depression" (Blumer and Heilbronn, 1982). Their argument (and others') is based on the assumption that even though many chronic pain patients do not provide sufficient evidence to identify depressed mood, they do meet the criteria for depression as determined by objective measures. Some speculate that depressed mood may be masked by a preoccupation with somatic symptoms. Therefore, "chronic pain is...viewed as neither primary nor secondary to depression, but a synchronous expression of the mood" (p. 384).

Turk, Rudy, and Stieg (1987) argued that the diagnosis of depression by objective

psychological assessment instruments may be inherently flawed when assessing persons with medical disorders. Many of the symptoms of depression like fatigue, weight loss, and somatic preoccupation, are symptoms of many medical conditions. These authors acknowledged the fact that chronic pain and the frustrations associated with this condition can lead to emotional difficulties, demoralization, and significant depressive symptomatology. They did not, however, go so far as to conclude that chronic pain and depression are one and the same. They concluded that given the confounds created by the overlap between the objective measures of depression and the symptoms of chronic pain, this question can not be answered with any measure of satisfaction.

Another research project speculated that a diagnosis of depression may vary as a function of the medical service location (Chapman, Sola, & Bonica, 1979). The authors compared chronic pain patients seen at a well-respected pain center and pain patients seen in private practice. The two groups differed significantly on depression scores. The pain center group reported more symptoms of depression. Even though this patient group reported more symptoms of depression, their depression was classified as mild. The authors concluded that the pain center clients were more likely to be experiencing psychological or sociological complications that were influencing their mood states. They also believed that their results challenged the "masked depression" theory of the origins of chronic pain.

A second position has suggested that pain and depression may share a common pathogenesis. It has been proposed that the shared mechanism between depression and chronic pain is diminished serotonin levels in the brain (Lindsay et al., 1981). This proposal seems to have gained support through the observation that significant numbers of chronic pain patients do

receive some relief from antidepressant medications. Lindsay et al. compared a sample of chronic pain patients with a sample of patients diagnosed with depression and complaining of some form of pain. All patients were prescribed antidepressant medications at a level that precipitated some measurable response. Approximately 60% of the sample experienced complete pain relief and another 40% experienced partial relief. However, even with these results, these authors were hesitant to conclude that depression and pain share a common pathway.

Pilowsky and Bassett (1982) compared chronic pain patients and psychiatric patients to determine whether any specific patient characteristics would help clarify the relationship between pain and depression. They found that pain patients tended to be older than the depressed group. They were more likely to be married, had larger families, and had spouses in a higher socioeconomic group. Pain patients reported much less affective disturbance and were more likely to attribute their pain to the presence of a somatic illness. They determined the salient features of chronic pain to be a "denial of affective disturbance and life problems unrelated to their pain" (p.35). However, the authors were still unable to answer the question of the link between chronic pain and depression.

The largest component of this debate seems to center on the chicken and the egg argument...which came first the pain or the depression? The primary limiting factor in answering this question is the absence of premorbid data. When pain becomes chronic there are reports of depression and when depression becomes problematic reports of pain are more frequent. In fact, some research has suggested that patients experiencing chronic pain are more likely to be diagnosed with psychiatric disorders. Reich, Tupin, and Abramowitz (1983) assessed 43 chronic pain subjects for psychiatric symptoms. They found that 98% had at least one Axis I diagnosis

on the DSM-III, and 37% had at least one Axis II diagnosis. Under the Axis I diagnosis, as one might expect, somatoform disorders were the most common (30%) and affective disorders made up a further 15%. Of the affective disorders, Large (1986) suggested that dysthymic disorder may be more common in a chronic pain group than major depression. He felt that in order to better classify chronic pain patients a diagnostic category called "chronic pain syndrome" should be created. Pain would be diagnosed as a physical disorder not a psychiatric disorder under the Diagnostic and Statistical Manual of the American Psychiatric Association axes system. In support of Large's proposal, Pilowsky, Chapman, and Bonica (1977) found that only 10% of their sample of chronic pain patients reported symptoms of depression that could be classified as a neurotic or psychotic depressive syndrome (neurotic-reactive and endogenous-psychotic under the Levine-Pilowsky depression questionnaire). However, to complicate this finding, von Knorring et al. (1983) found that participants diagnosed with neurotic-reactive depression (depression resulting from environmental precipitants) were more likely to report pain and more severe pain when compared to participants with unipolar or bipolar depression.

Garron and Leavitt (1983) developed their research from the perspective that depression evolved from prolonged experience with chronic pain. They compared three groups of chronic back pain sufferers in terms of the amount of psychopathology reported on the MMPI. The groups were created on the basis of duration of pain. They found that MMPI scores increased the longer a patient lived with pain. This was particularly true for Depression, Hysteria, Paranoia, Psychasthenia, and Mania. They concluded that back pain led to an increase in the vegetative signs of depression but did not result in increased pathological mood states. The authors did not attribute psychopathology solely to the presence of pain, rather they included the caveat that "it

is possible that chronic pain increases apparently psychopathological aspects of personality rather than mood" (p. 491).

The literature that addressed whether depression and FM are related has encountered similar problems. Martinez, Ferraz, Fontana, and Atra (1995) found that 80% of their FM sample reported depression compared to 12% reported in the control group. Buckelew et al. (1994) found that 47% of their FM sample met the criteria for clinical depression on the Center for Epidemiologic Studies - Depression Scale. However, these authors noted that reported symptoms of depression were not related to pain behaviours. Other authors have reported similar results in terms of reported depression in persons suffering from FM (Ahles, Khan, Yunus, Spiegel, & Masi, 1991; Krag, Norregaard, Larsen, & Danneskiold-Samsoe, 1994; Ledingham, Doherty, & Doherty, 1993; Wolfe, Ross, Anderson, Russell, & Hebert, 1995). Alfici, Segal, and Landau (1989) addressed the question of whether FM was simply a variant of depressive disorder. They concluded that while FM patients reported depression on self-rating scales, either in the present or past experiences, their presentation during interviews was not concordant with self-reports. The authors noted that depressed mood was less apparent in FM patients as compared to those persons diagnosed with major depression. They speculated that "pain served as a substitute for the depression, and the somatic preoccupation of the patients protected them from the depression" (p.159). However, they maintained that because their subjects met the remaining criteria for depression, the diagnosis of depression was supported and therefore their assumption that FM was a variant of depressive disorder was supported.

In their review of the literature, Boissevain and McCain (1991b) found little evidence suggesting that FM and depression were one and the same. They noted that in at least one study

comparing depression levels between FM and rheumatoid arthritis patients no differences were noted in depression levels. They concluded that while “it appears that a proportion of FS (*FM*) patients may experience depression...depression may not be unique to FS (*FM*)” (p.241). They reiterated the conclusion that the relationship between chronic pain syndromes and depression continues to be one of the chicken and the egg.

Of what relevance is this clearly unresolved debate to the current research project. Given the widespread physical complaints, the sleep disorder, the change in physical activity and the drastic change in life functioning accompanying a diagnosis of fibromyalgia, it is fairly certain that administration of a standard depression measure, like the Beck Depression Inventory, would produce results suggesting the presence of depression in FM patients. These results would contribute little to the resolution of the above debate and would be of little meaning given the confounds identified above. It is for this reason that the current research did not pursue an assessment of mood.

Appendix B

Dear participant,

This purpose of this letter is to request your participation in a questionnaire survey. As you know the fibromyalgia Society has approved this questionnaire survey. As well the project has received ethical approval from the Human Ethical Review Committee of the Department of Psychology, University of Manitoba. The purpose of the survey is to determine in what way chronic pain has affected your family life. In order to adequately address this purpose we would ask that both you and your spouse (husband or wife) fill out a series of short questionnaires that should take about an hour of each of your time. If you choose to participate you are assured that all responses will be confidential and all identifying information will be removed and replaced with a code number for data entry purposes.

These questionnaires are part of my Ph.D. dissertation work. I hope to gather data from approximately fifty families who have had experience with the effects of chronic pain. I have been involved in research into the experience of chronic pain since my Master's degree and have been trained in therapy with chronic pain patients. This questionnaire package is also part of another larger research project under the direction of Professor Ranjan Roy, Faculty of Social Work, University of Manitoba.

Of what benefit is participation to you? First, you will be contributing information to the published literature on fibromyalgia that will help in further understanding the ramifications of a diagnosis of fibromyalgia to the family system. Second, your responses will provide valuable information that will help guide treatment programs for fibromyalgia families that directly address daily functioning issues and attempt to minimize disruption to family functioning and as such serve to limit the sources of stress in the environment.

Who is eligible to participate? All participants must be in an established relationship and their partners must be willing to participate. If you are willing to participate please sign the attached form and provide your phone number in the designated space. Return the form to the fibromyalgia Society at your next meeting or at your earliest convenience. These forms will be collected and I (or an assistant) will contact each of you to confirm your participation. At the time of confirmation a questionnaire package with instructions and a stamped return envelope will be sent to your home. Under ethical research guidelines you are free to decline participation at any time but it is my hope that you will be interested in contributing to this research project.

At the completion of this study, generalized feedback will be available to participants concerning the results of the study and what was learned from your responses. This will appear in the newsletter of the Support Group.

Thank you for your consideration of this request.

Pamela (Pam) Chenhall, M.A.
Researcher

Michael R. Thomas, Ph.D., C.Psych
Research Supervisor

Appendix C

Chronic Pain Research Project

This letter is to certify that my wife/husband and I agree to participate in the questionnaire survey described in the cover letter. We further agree to be contacted in our home to confirm our participation and to provide our address for mailing purposes.

Chronic Pain Patient
Print Name

Signature

Spouse
Print Name

Signature

Date

Home Phone Number

_____ Not interested in participating

_____ Not eligible to participate

Please return in the enclosed envelope.

**Family Functioning Research Project
Consent Form**

Your son or daughter has asked that you complete these questionnaires as part of a research project at the University of Manitoba. They will receive two research participation credits towards their final grade for your participation. The purpose of this survey is to compare family functioning in chronic pain families with pain-free families. You will be serving as part of the pain-free control group. If you choose to participate you are assured that all responses will be confidential and all identifying information will be removed and replaced with a code number for data entry purposes.

Why should you participate? Other than the very good reason that you will be helping your son or daughter out with their course program, you will also be providing valuable information concerning family functioning under less stressful circumstances when compared to a family living with chronic pain. This information will enable us to determine in what ways chronic pain families are similar or different from pain-free families and to structure treatment to reflect pain families needs.

The questionnaire package consists of several short questionnaires which should take approximately an hour to complete. If you find the questionnaire difficult to complete you are free to withdraw your consent to participate and your son or daughter will not be penalized in any way.

This consent form is to certify that we both agree to participate in the questionnaire survey assessing family functioning. We understand that our participation benefits our son or daughter by the awarding of research participation credit and this credit is included in the calculation of the final grade for introductory psychology.

Participant
Print Name

Signature

Participant
Print Name

Signature

Date

If you have any further questions please contact Pam Chenhall by leaving a message at 474-9338.

DEMOGRAPHIC SURVEY
PAIN PATIENT

Code No. _____

Date of Birth: Day _____ Month _____ Year _____

Sex: (check the appropriate box)

Male _____ Female _____

Length of Marital Relationship (in years): _____

Number of Children: _____

Sex and Ages of Children:

Circle years of education completed:

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 16+

How would you describe your current employment status? (Please check one)

Full time _____
Part time _____
Homemaker _____
Retired _____
Unemployed _____

How would you describe your family's current income? (Please check one)

Less than \$20,000 per annum _____
\$20,000 to \$40,000 _____
\$41,000 to \$60,000 _____
\$61,000 to \$80,000 _____
\$81,000 or greater _____

Do you feel that your family's income has suffered as a result of your pain experience? (please check one and describe)

Yes _____ No _____

Describe your current pain experience:

Has your pain condition been diagnosed? (check the appropriate box)

Yes _____ No _____

If yes, what is the diagnosis? _____

Describe treatment for your pain condition (including any form of therapy and medication):

How would you describe your pain? (Please check one)

- continuous (little or no time that is pain free) _____
- intermittent (frequent or extended pain free periods) _____
- transient (occurring infrequently regardless of intensity) _____

Has your family ever sought family counselling to resolve difficulties within the family?

Yes _____ No _____

If yes, when did you seek help?

- Before the fibromyalgia diagnosis _____
- After the fibromyalgia diagnosis _____

DEMOGRAPHIC SURVEY
SPOUSE

Code No. _____

Date of Birth: Day _____ Month _____ Year _____

Sex: (check the appropriate box)

Male _____ Female _____

Length of Marital Relationship (in years): _____

Number of Children: _____

Sex and Ages of Children:

Circle years of education completed:

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 16+

How would you describe your current employment status? (Please check one)

Full time _____

Part time _____

Homemaker _____

Retired _____

Unemployed _____

How would you describe your family's current income? (Please check one)

Less than \$20,000 per annum _____

\$20,000 to \$40,000 _____

\$41,000 to \$60,000 _____

\$61,000 to \$80,000 _____

\$81,000 or greater _____

Do you feel that your family's income has suffered as a result of your spouse's pain experience?
(please check one and describe)

Yes _____ No _____

Do you experience any form of pain on a regular basis?

Yes _____ No _____

If yes, described the nature and frequency of your pain?

Has your family ever sought family counselling to resolve difficulties within the family?

Yes _____ No _____

If yes, when did you seek help?

Before the fibromyalgia diagnosis _____
After the fibromyalgia diagnosis _____

DEMOGRAPHIC SURVEY

Code No. _____

Date of Birth: Day _____ Month _____ Year _____

Sex: (check the appropriate box)

Male _____ Female _____

Length of Marital Relationship (in years): _____

Number of Children: _____

Sex and Ages of Children:

Circle years of education completed:

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 16+

How would you describe your current employment status? (Please check one)

Full time _____
Part time _____
Homemaker _____
Retired _____
Unemployed _____

How would you describe your family's current income? (Please check one)

Less than \$20,000 per annum _____
\$20,000 to \$40,000 _____
\$41,000 to \$60,000 _____
\$61,000 to \$80,000 _____
\$81,000 or greater _____

Do you experience any form of pain on a regular basis?

Yes _____ No _____

If yes, described the nature and frequency of your pain?

Have you been diagnosed with a chronic illness?

Yes _____ No _____

Has your family ever sought family counselling to resolve difficulties within the family?

Yes _____ No _____

Appendix D

Family Assessment Measure

DIRECTIONS: You will find 50 statements about your family as a whole. Please read each statement carefully and decide how well the statement describes your family. Then, make your response. If you **STRONGLY AGREE** with the statement then write "SA" in the blank in front of the question; if you **AGREE** with the statement then write in "A"; if you **STRONGLY DISAGREE** with the statement then write in "SD" and if you **DISAGREE** then write in "D". Please write in only one answer per question.

SA = STRONGLY AGREE

A = AGREE

SD = STRONGLY DISAGREE

D = DISAGREE

- ___ 1. We spend too much time arguing what our problems are.
- ___ 2. Family duties are fairly shared.
- ___ 3. When I ask someone to explain what they mean, I get a straight answer.
- ___ 4. When someone in our family is upset, we don't know if they are angry, sad, scared, or what.
- ___ 5. We are as well adjusted as any family could possibly be.
- ___ 6. You don't get a chance to be an individual in our family.
- ___ 7. When I ask why we have certain rules, I don't get a good answer.
- ___ 8. We have the same views on what is right and wrong.
- ___ 9. I don't see how any family could get along better than ours.
- ___ 10. Some days we are more easily annoyed than others.
- ___ 11. When problems come up, we try different ways of solving them.
- ___ 12. My family expects me to do more than my share.
- ___ 13. We argue about who said what in our family.
- ___ 14. We tell each other about things that bother us.
- ___ 15. My family could be happier than it is.
- ___ 16. We feel loved in our family.
- ___ 17. When you do something wrong in our family, you don't know what to expect.

- ___ 18. It's hard to tell what the rules are in our family.
- ___ 19. I don't think any family could possibly be happier than mine.
- ___ 20. Sometimes we are unfair to each other.
- ___ 21. We never let things pile up until they are more than we can handle.
- ___ 22. We agree about who should do what in our family.
- ___ 23. I never know what's going on in our family.
- ___ 24. I can let my family know what is bothering me.
- ___ 25. We never get angry in our family.
- ___ 26. My family tries to run my life.
- ___ 27. If we do something wrong, we don't get a chance to explain.
- ___ 28. We argue about how much freedom we should have to make our own decisions.
- ___ 29. My family and I understand each other completely.
- ___ 30. We sometimes hurt each others feelings.
- ___ 31. When things aren't going well it takes too long to work them out.
- ___ 32. We can't rely on family members to do their part.
- ___ 33. We take time to listen to each other.
- ___ 34. When someone is upset, we don't find out until much later.
- ___ 35. Sometimes we avoid each other.
- ___ 36. We feel close to each other.
- ___ 37. Punishments are fair in our family.
- ___ 38. The rules in our family don't make sense.
- ___ 39. Some things about my family don't entirely please me.
- ___ 40. We never get upset with each other.
- ___ 41. We deal with our problems even when they're serious.
- ___ 42. One family member always tries to be the centre of attention.
- ___ 43. My family lets me have my say, even if they disagree.
- ___ 44. When our family gets upset, we take too long to get over it.
- ___ 45. We always admit our mistakes without trying to hide anything.
- ___ 46. We don't really trust each other.

- ___ 47. We hardly ever do what is expected of us without being told.
- ___ 48. We are free to say what we think in our family.
- ___ 49. My family is not a perfect success.
- ___ 50. We have never let down another family member in any way.

Please check one blank only in each of the following questions:

10. When disagreements arise, they result in:
 husband gives in.
 wife giving in.
 agreement by mutual give and take.
11. Do you and your mate engage in outside interests together?
 All of them
 Some of them
 Very few of them
 None of them
12. In leisure time do you generally prefer:
 to be "on the go".
 to stay at home.
- Does your mate generally prefer:
 to be "on the go".
 to stay at home.
13. Do you ever wish you had not married?
 Frequently
 Occasionally
 Rarely
 Never
14. If you had your life to live over, do you think you would:
 marry the same person.
 marry a different person.
 not marry at all.
15. Do you confide in your mate:
 almost never.
 rarely.
 in most things.
 in everything.

Appendix F

West Haven - Yale Multidimensional Pain Inventory

In the following 20 questions, you will be asked to describe your pain and how it affects your life. Under each question is a scale to record your answer. Read each question carefully and then *circle* a number on the scale under that question to indicate how that specific question applies to you.

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

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

2. In general, how much does your pain problem interfere with your day to day activities?

0	1	2	3	4	5	6
No interference						Extreme interference

3. Since the time you developed a pain problem, how much has your pain changes your ability to work?

0	1	2	3	4	5	6
No change						Extreme change

___ Check here, if you have retired for reasons other than your pain problem.

4. How much has your pain changed the amount of satisfaction or enjoyment you get from participating in social and recreational activities?

0	1	2	3	4	5	6
No change						Extreme change

5. How supportive or helpful is your spouse (significant other) to you in relation to your pain?

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

6. Rate your overall mood during the *past week*.

0	1	2	3	4	5	6
Extremely low mood						Extremely high mood

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

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

8. How much has your pain changed your ability to participate in recreational and other social activities?

0	1	2	3	4	5	6
No change						Extreme change

9. How much has your pain changed the amount of satisfaction you get from family-related activities?

0	1	2	3	4	5	6
No change						Extreme change

10. How worried is your spouse (significant other) about you in relation to your pain problems?

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

11. During the *past week* how much control do you feel that you have had over your life?

0	1	2	3	4	5	6
Not at all in control						Extremely in control

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

0	1	2	3	4	5	6
No suffering						Extreme suffering

13. How much has your pain changed your marriage and other family relationships?

0	1	2	3	4	5	6
No change						Extreme change

14. How much has your pain changed the amount of satisfaction or enjoyment you get from work?

0	1	2	3	4	5	6
No change						Extreme change

_____ Check here, if you are not presently working.

15. How attentive is your spouse (significant other) to your pain problem?

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

16. During the *past week* how much do you feel that you've been able to deal with your problems?

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

17. How much has your pain changed your ability to do household chores?

0	1	2	3	4	5	6
No change						Extreme change

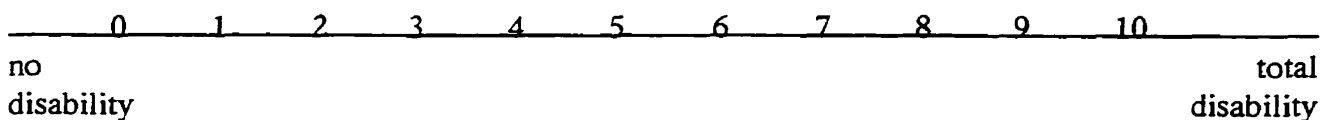
18. During the past week how irritable have you been?

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

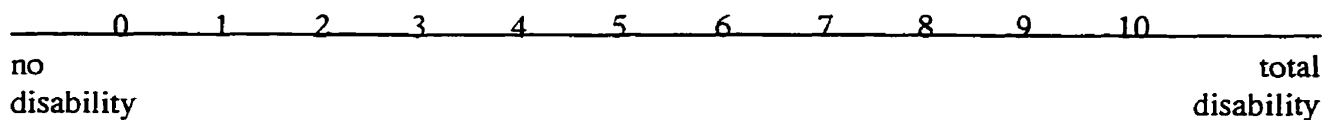
Appendix G

Pain Disability Index*(1) Family / home responsibilities*

This category refers to activities related to the home or family. It includes chores or duties performed around the house (e.g., yard work) and errands or favours for other family members (e.g., driving the children to school)

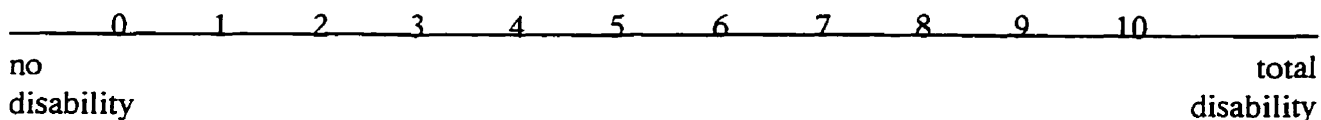
*(2) Recreation*

This category includes hobbies, sports, and other similar leisure time activities.

*(3) Social activity*

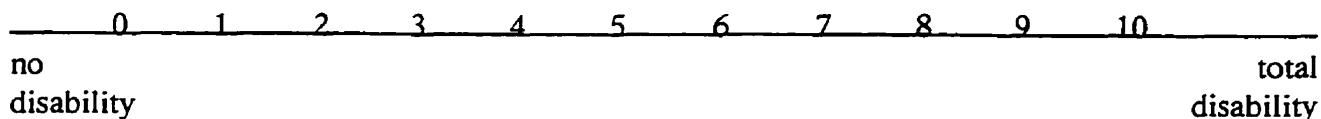
This category refers to activities which involve participation with friends and acquaintances other than family members. It includes parties, theater, concerts, dining out, and other social functions.

This category includes hobbies, sports, and other similar leisure time activities.

*(4) Occupation*

This category refers to activities that are a part of or directly related to one's job. This includes non-paying jobs as well, such as that of housewife or volunteer worker.

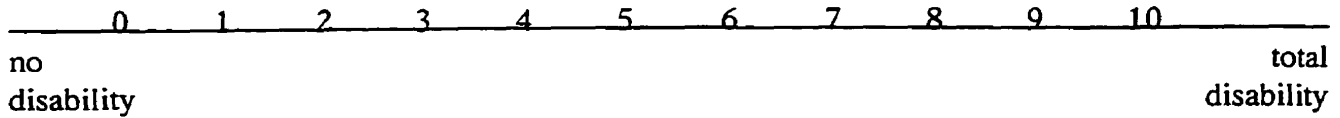
This category includes hobbies, sports, and other similar leisure time activities.



(5) Sexual behaviour

This category refers to the frequency and quality of one's sex life.

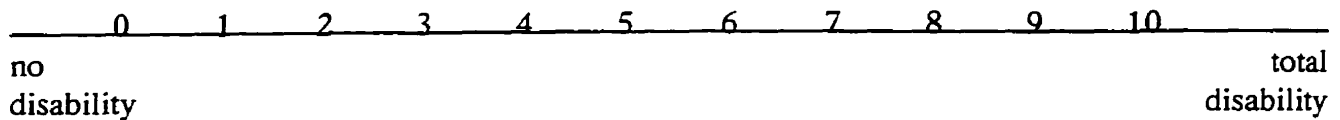
This category includes hobbies, sports, and other similar leisure time activities.



(6) Self-care

This category includes activities which involve personal maintenance and independent daily living (e.g., Taking a shower, driving, getting dressed, etc.).

This category includes hobbies, sports, and other similar leisure time activities.



(7) Life-support activity

This category refers to basic life-supporting behaviours such as eating, sleeping, and breathing.

This category includes hobbies, sports, and other similar leisure time activities.

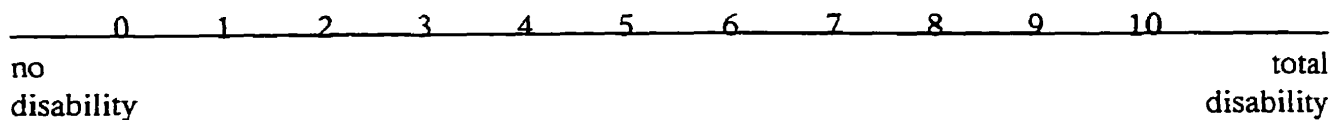
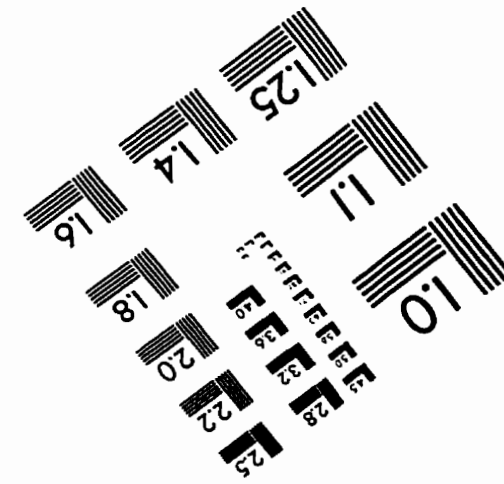
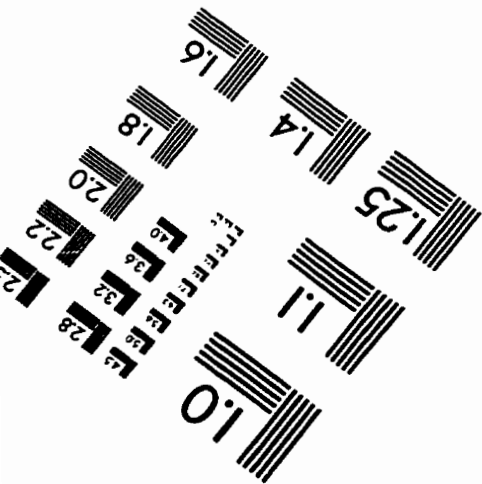
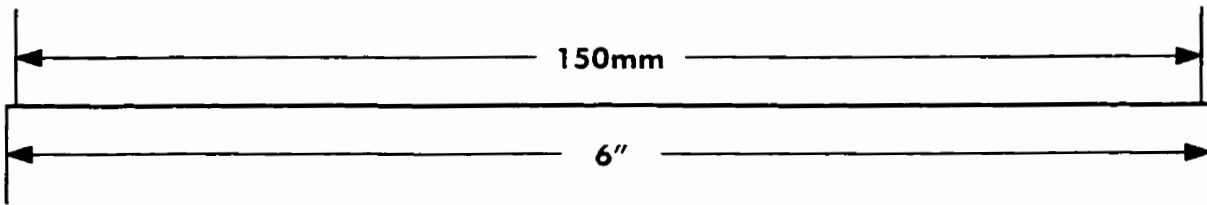
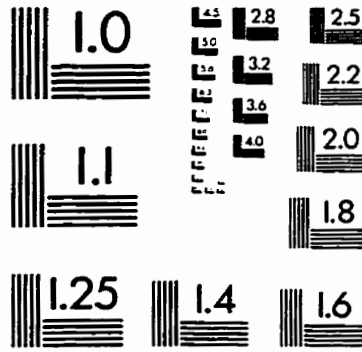
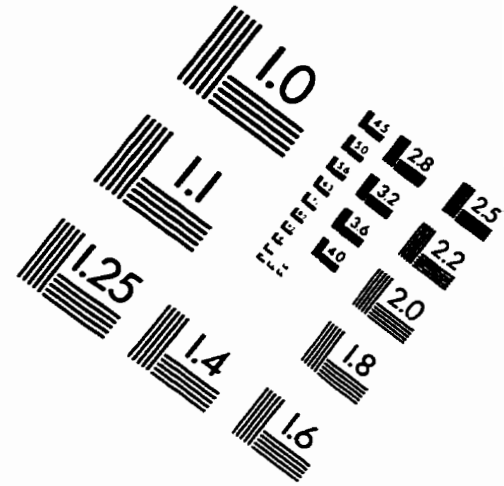
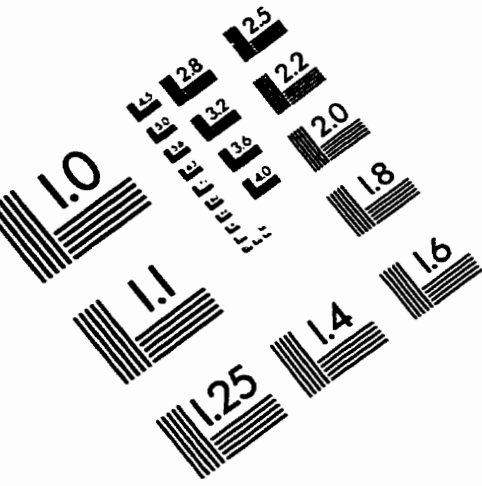


IMAGE EVALUATION TEST TARGET (QA-3)



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