RELATIONSHIPS AMONG HEALTH, STRESS, COPING, AND QUALITY OF LIFE FOR WOMEN WITH FIBROMYALGIA

by

Victoria Inge-Marie Elliot-Gibson

A thesis submitted in conformity with the requirements for the degree of Master of Science in Rehabilitation Science
Graduate Department of Rehabilitation Science
University of Toronto

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ABSTRACT

Relationships Among Health, Stress, Coping, and Quality of Life for Women with Fibromyalgia

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Fibromyalgia (FM) is a chronic pain condition which impacts the biopsychosocial systems of an individual. This study examined the relationships among socio-demographics, mental and physical health, stress, coping, and quality of life for women with FM. The theoretical foundations were Lazarus and Folkman's theory of stress, appraisal, and coping and the Centre for Health Promotion's quality of life framework. Two quality of life models (the QOLP and QOLS) were tested to determine the extent to which quality of life was a function of the major study variables. Results indicate that women with FM experience marginal quality of life. Mental and physical health were significant in both quality of life models evaluated. Employment status, in the QOLS, and problem-focused coping, in the QOLP, were also significantly associated with quality of life. Stress and emotion-focused coping were non-significant for either quality of life model. Recommendations for future research and clinical applications are discussed.
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for psychosocial research in this field. I hope one day that my research will come
to help those in need.

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ABBREVIATIONS

American College of Rheumatology ......................................................... ACR
Beck Depression Inventory - Adjusted ..................................................... BDI-A
Centre for Health Promotion ................................................................. CHP
Fibromyalgia ......................................................................................... FM
Fibromyalgia Impact Questionnaire ....................................................... FIQ
Fibromyalgia Impact Questionnaire - Transformed ................................. FIQ-T
Quality of Life Profile - Adult Version .................................................... QOLP
Quality of Life Scale ............................................................................. QOLS
Rheumatoid Arthritis ............................................................................. RA
Variance Inflation Factor ........................................................................ VIF
Ways of Coping Questionnaire .............................................................. WOCQ
CHAPTER ONE

Introduction

(1.1) Overview

Research investigating fibromyalgia (FM) has grown enormously over the past decade. It has been demonstrated that FM is a chronic pain condition that has multiple, fluctuating biopsychosocial consequences for those who have the disorder, and that individual responses to such consequences vary immensely (Masi, 1994; Henriksson, 1995a, 1995b; 1995c). Potential consequences at the intra-personal level include a decrease in self-esteem, self-confidence, and self-efficacy, and an increased level of depression and anxiety (Yunus, Masi, Calabro, Miller, & Feigenbaum, 1981; Gaston-Johansson, Gustafsson, Felldin, & Sanne, 1990; Pastor et al., 1993; Masi, 1994; Buckelew, Murray, Hewett, Johnson, & Huyser, 1995). At the socio-environmental level, people with FM have a borderline quality of life, a lack of adequate social support, and must cope with numerous stressors, alienation and scepticism about their condition on the part of friends, family and society (Burckhardt, Clark & Bennett, 1992; Burckhardt, Archenholtz, Mannerkorpi, & Bjelle, 1993; Bolwijn, van Santen-Hoeufft, Baars, & van der Linden, 1994; Burckhardt, Clark, O'Reilly, & Bennett, 1997). Yet, the individual biological, psychological, and social processes of FM are only beginning to be understood. Thus, it is important to identify and comprehend the
complex relationships among these factors which affect the lives of people with FM.

Over three million people in Canada have arthritis and related disorders, which includes FM (Badley, Rasooly, & Webster, 1994). These people are likely to be concerned with daily living, specifically, coping with their particular disorder in their day-to-day lives. Learning to live with FM can be difficult as the number and severity of symptoms can fluctuate rapidly, resulting in a perceived lack of control over one's life. Further, it is a considerable challenge to develop an adaptive lifestyle and regain a satisfying quality of life in the face of such uncertainty.
CHAPTER TWO

Literature Review

Fibromyalgia

(2.1) Etiology

FM is a controversial condition that has been variously described as a disorder created by society which is only a "reflection of an inability to cope" (A. J. Russell, 1995, p. 44) and as a "complex spectrum illness with multifactorial biomechanical, neuroendocrine, psychobehavioural and socio-environmental determinants" (Masi, 1994, p. 9). Although the cause of FM is still unknown, numerous speculative theories have been advanced regarding the etiology of FM.

FM, previously known as fibrositis, was first mentioned in the medical literature by Sir William Gowers in 1904. In this article he describes fibrositis "as a form of inflammation of the fibrous tissue of the muscles" (p. 118). However, this theory was later discounted due to lack of evidence. The next wave of research attempted to account for the symptoms of FM by defining the condition as a form of a psychiatric disorder (Payne et al., 1982; Wolfe et al., 1984; Ahles, Yunus, Riley, Bradley & Masi, 1984; Goldenberg, 1989). Serious methodological flaws, in these studies, have been identified by Smythe (1984) and Boissevain and McCain (1991). Such flaws include the use of non-standardized subjective assessment tools, and the lack of a diagnostic criteria for FM. In addition, many research studies have failed to demonstrate that FM is a psychiatric disorder, and
Current research indicates that psychiatric disorders such as depression differ biologically from FM (Smythe, 1984; Clark, Campbell, Forehand, Tindall, & Bennett 1985; Hudson, Hudson, Pliner, Goldenberg, & Pope, 1985; Goldenberg, 1992; Masi, 1994; Sletvold, Stiles, & Landro, 1995).

This does not negate the fact that people with FM, like people with other diseases and disorders, may have an increased risk of psychological problems, such as depression and anxiety (Rodin & Voshart, 1986; Turner & Beiser, 1990). In fact, it is not debated that "psychological factors may be the most important determinant of syndrome expression" (Wolfe, 1995, p. 10). However, it has been recently demonstrated that the psychological distress experienced by people with FM is associated with pain and fatigue and that psychiatric disorders were not related to symptom generation (Aaron et al., 1996). In addition, it is also plausible that the psychological problems encountered by those with FM are moderated by other variables such as personality, hormonal imbalances, inadequate social support, and ineffective coping behaviours (Turk & Rudy, 1985).

Researchers are currently investigating numerous biochemical and neurohormonal imbalances and muscular dysfunction as precursors to the development of FM in controlled clinical trials (Moldofsky, 1995; Yunus, Aldag, Dailey, & Jobe, 1995; Bennett, 1996; I. Russell, 1996). To date, psychiatric approaches (Goldenberg, 1989), neurological approaches (I. Russell, 1995; Moldofsky, 1995), and biomechanical approaches (Smythe, 1996), have not
identified the cause of FM. However, it is generally acknowledged that "the pervasive eclectic symptomatology of the typical patient cannot be due to a single pathophysiological aberration" (Bennett, 1996, p. 51).

(2.2) Diagnostic Criteria

Controversy has not only surrounded identification of the etiology of FM, but it has also been associated with the development of diagnostic criteria for FM. Prior to the establishment of the diagnostic criteria for FM in 1990, common diagnoses of FM included tension rheumatism, depression, bursitis, tendinitis, costochondritis, psychoneurosis, reflex dystrophy, and psychogenic rheumatism (Smythe, 1986; Hadler, 1986). This debate can be attributed to the vast number of rheumatic as well as non-rheumatic symptoms reported as part of this syndrome. Such symptoms include diffuse muscular pain, sleep disturbance, extreme fatigue, cognitive-emotional distress, depression, anxiety, headaches, irritable bowel syndrome, subjective swelling, and morning stiffness. The number of symptoms and their severity vary for each person diagnosed with FM. Thus, the condition can be viewed as a syndrome which exists on a continuum from minimal pain with less severity and a fewer number of symptoms, to intense pain, with more severity and a higher number of symptoms (Wolfe, 1995). Consequently, which factors to include in establishing diagnostic criteria for FM has challenged researchers for many years.

An initial diagnostic criterion for FM was reported on the basis of a clinical
trial by Yunus et al. (1981) in which people who were thought to have FM were compared to matched healthy controls. Today, however, the widely accepted and used diagnostic criteria is that of the American College of Rheumatology (ACR) (see Table 1), which was developed by 25 principal investigators of FM (Wolfe et al., 1990). The two basic elements of the ACR criteria are widespread chronic pain lasting more than three months and pain in 11 of 18 specific tender point sites upon palpation. The diagnostic specificity is 81% for the ACR criteria and 77% for the primary FM criteria suggested by Yunus et al. in 1981 (Wolfe et al., 1990).

(2.3) **Prevalence**

FM can be considered a pervasive condition in North America and Europe. A review of prevalence studies by Wolfe (1993) concluded that the prevalence of FM, in the general population, to be about 2% to 4%. However, in the female general population, the prevalence of FM increases with age, and it is estimated that 7.4% of women aged 70 and over have the condition (Wolfe, Ross, Anderson, Russell & Hebert, 1995). In Canada, The Arthritis Society estimates the prevalence of FM as approximately 3% of the population, or over 800,000 people (Arthroscope, 1994). In rheumatology clinics across Canada, FM is ranked as the third most common disorder seen by rheumatologists, after rheumatoid arthritis (RA) and osteoarthritis (White, Speechley, Harth, & Ostbye, 1995). In addition, White et al. (1995) reported that 23.4% of new patients assessed in the rheumatology clinics in Canada are being diagnosed with FM. This represents an
Table 1

The American College of Rheumatology 1990 Criteria for the Classification of Fibromyalgia

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<td>History of widespread pain</td>
<td>Pain is considered widespread when all of the following are present: pain in both sides of the body, and below the waist. In addition, axial skeletal pain (cervical spine, anterior chest, thoracic spine or low back) must be present. Low back pain is considered lower segment pain.</td>
</tr>
<tr>
<td>Pain in 11 of 18 tender on digital palpation</td>
<td><strong>Occiput:</strong> at the suboccipital muscle sites point insertions.</td>
</tr>
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<td></td>
<td><strong>Low cervical:</strong> at the anterior aspects of the intertransverse spaces at C5-C7.</td>
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<tr>
<td></td>
<td><strong>Trapezius:</strong> at the midpoint of the upper border.</td>
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<td></td>
<td><strong>Supraspinatus:</strong> at origins, above the scapula spine near the medial border.</td>
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<tr>
<td></td>
<td><strong>Second Rib:</strong> upper lateral to the second costochondral junction.</td>
</tr>
<tr>
<td></td>
<td><strong>Lateral Epicondyle:</strong> 2 cm. distal to the epicondyles.</td>
</tr>
<tr>
<td></td>
<td><strong>Gluteal:</strong> in upper outer quadrants of buttocks in anterior fold of muscle.</td>
</tr>
<tr>
<td></td>
<td><strong>Greater Trochanter:</strong> posterior to the trochanteric prominence.</td>
</tr>
<tr>
<td></td>
<td><strong>Knee:</strong> at the medial fat pad proximal to the joint line.</td>
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Digital palpation should be performed with an approximate force of 4 kg. For a tender point to be considered "positive" the subject must state that the palpitation was painful. "Tender" is not to be considered "painful".

astonishing number considering that there are over 130 rheumatic diseases. The large increase in those with an FM diagnosis is due to the growing recognition of the disorder by physicians as well as the development of clear, specific, and easily applied diagnostic criteria.

Beyond being quite a pervasive condition, FM has also been demonstrated to be a chronic condition. Granges, Zilko, and Littlejohn (1994) conducted a study on FM severity two years after diagnosis. They found that many participants no longer fulfilled the criteria of FM. However, a 10 year follow-up study of people with FM demonstrated that all participants still alive reported symptoms of FM, although 66% reported feeling somewhat better than in 1986 (Kennedy & Felson, 1996).

(2.4) Biopsychosocial Aspects of FM

Although there is no known etiology of FM, various biopsychosocial consequences of the disorder have been identified. However, according to the FM literature, the majority of persons studied were recruited from out-patient rheumatology clinics. Thus, results may not be able to be applied generally to the thousands of people with FM who do not utilize such clinics. Further, the apparent consequences of FM on their lives is not understood as well as researchers would like.

There are two models that recognize the biopsychosocial interrelations in FM (Masi, 1994; Bennett, 1996). Both Bennett and Masi recognize the person-specific
conditions and consequences of FM. Masi's model (see Figure 1), however, provides greater detail about the psycho-behavioural, constitutional-heredity, and socio-environmental variables which may, in turn, influence the development and persistence of dysfunctional disorders such as FM. Studies investigating such biopsychosocial interrelations have yet to be conducted, as a thorough understanding of the individual factors of this condition is required before assessing their interrelations and correlations.

There are numerous biological, physical and neurohormonal abnormalities which may influence the symptoms and consequences of FM. Bennett's (1996) review of studies on muscle function found that people with FM have decreased high energy phosphate levels (ATP and Pcr), low VO₂ max, low exercising muscle blood flow, low isometric and isokinetic muscle strength, low static and dynamic muscle endurance, and a decreased ability to relax shoulder flexor muscles.

Neurohormonal findings by Demitrack and Crofford (1995) demonstrate a dysregulation of the hypothalamic-pituitary-adrenal (HPA) axis, which is "considered to be the prototypical hormonal stress system of the body" (p. 68). Russell's (1995) review of neurohormonal studies also demonstrates abnormalities such as an increased level of substance P and a decreased level of serotonin and other amino acids such as alanine, histidine, lysine, proline, serine and threonine.

Sleep physiology studies have demonstrated an "alpha (7.5 - 11 Hz) rhythm physiologic arousal disturbance in the electroencephalogram (EEG) during
Constitutional- Heredity
  Age, sex, race

Circulatory
  Musculoskeletal
  Physical status

Immunological
  Neuroendocrine
  Physiological function

Socio-Environmental
  Climate
  Economic
  Geography
  Noxious agents
    (e.g. viruses)
  Nutrition
  Occupation
  Social function
  Trauma
  experience

Psycho-Behavioural
  Anxiety levels
  Behaviours
  Perceptions
  Psyche
  Sleep
  Stresses
  Successes

Greater function
No symptoms

PERSONA

"Box"

Suffering, e.g. FMS
Less function

Figure 1
Masi's Factors Contributing to Health Versus Disease

nonrapid eye movement (NREM) sleep that accompanies increased nocturnal vigilance and the light unrefreshing sleep" (Moldofsky, 1995, p. 75).

Those with FM also demonstrate a heightened sensitivity to experimentally induced pain (Rollman & Lautenbacher, 1993). Rollman and Lautenbacher call this sensitivity to aversive events the hypervigilance model, and they hypothesize that those means used to manage aversive stimuli are not effective or are dysfunctional in people with chronic pain conditions such as FM. The above findings may influence the number and severity of symptoms found in people with FM and also influence the psychosocial consequences of the disorder.

The psychosocial effects of any given illness seem to be the last area to be explored. Research into the psychosocial issues of FM lags behind the extensive research on the biochemical, neurohormonal, musculoskeletal and other pathogenic factors. Clearly, the discovery of the pathogenesis of the disorder and ultimately the cure are of foremost concern to medical researchers. Just as vital as the etiology and physical consequences of a disease, however, are the psychological and socio-economic consequences of that disease. It is apparent that there are people in society who may not be living to their fullest potential because such psychosocial aspects are being ignored and/or disregarded.

How one copes with the consequences of FM has been under-studied to date. In the literature on coping with chronic pain, it has been discovered that a relationship exists between the use of active coping strategies and decreased pain,
mood disturbance, and disability (Brown & Nicassio, 1987). An active coping strategy is defined as direct engagement in cognitive and/or behavioural mechanisms to control pain directly. Two examples of active coping strategies are exercising and distraction. However, Nicassio, Schoenfeld-Smith, Radojevic, and Schuman (1995) found that in FM, "active coping, if not appropriately paced and cautiously executed, may aggravate FM symptoms and disability" (p. 1558). This study also found that younger subjects reported more pain and higher depression scores than older subjects. The duration of FM was not correlated with pain and depression in this study. Thus, the question arises whether older people who have had the syndrome longer and have had more life experiences related to coping with pain, have been better able to come to terms with FM than younger people who have not had the syndrome as long.

However, a study by Burckhardt et al. (1997) on pain coping by women with FM did not conclude that the use of active coping resulted in higher concurrent pain after treatment as Nicassio et al. (1995) found. It did discover that people with FM used a variety of techniques to cope with their pain. Strategies which resulted in better functioning and fewer symptoms included reinterpretation and ignoring pain sensations, coping self-statements, increasing behavioural activity, diverting attention and praying/hoping. Those factors predicting increased pain and fatigue were depression, catastrophizing, and an inability to control and decrease pain.
The study by Uveges et al. (1990) on psychological symptoms in people with FM and RA utilized the Ways of Coping - Revised (Felton, Revenson, & Hinrichsen, 1984) to compare coping strategies between the two groups. However, the specific stressful situations investigated were not identified and since group differences were not found, additional investigation into coping processes was not done. What this study did discover was that people with FM had a higher level of life stress as well as psychological stress, a greater amount of pain, and more sleep disturbances than those with RA. Dailey, Bishop, Russell, and Fletcher (1990) also found that higher levels of daily stress were found among people with FM when compared with people with RA.

Self-efficacy "may be an important mediating variable in effectively coping with chronic pain and its associated disability" (Buckelew et al., 1994, p. 378). Buckelew et al. (1994) found that those with a higher self-efficacy score, meaning that they perceived they could manage the pain, had a lower pain behaviour score. Similar results for self-efficacy, pain and physical activity among people with FM were found by Buckelew et al. (1995), who reported that "self-efficacy significantly predicted self-reported pain and physical activity scores over and above the impact of demographic variables, disease severity, or psychological distress" (p. 48). Thus, people with low self-efficacy may not be able to cope with the pain and various other symptoms of FM as well as people who have high self-efficacy.
The inability to manage and control pain was also investigated by Pastor et al. (1993) and Burckhardt and Bjelle (1996). Pastor et al. (1993) discovered that people with FM felt that their pain was controlled by external factors, such as health professionals, luck and fate, rather than by internal factors. Moreover, Pastor et al. believe that this lack of perceived control "may be an appropriate response to their situation" (p. 487), due to the fluctuating symptoms and lack of illness validation from society and their personal social support systems. Burckhardt and Bjelle (1996) concluded that people with FM had a low sense of control over their condition, had higher pain levels, were more depressed and anxious, and perceived a higher level of uncertainty about their condition than people with RA and systemic lupus erythematosus.

The perception that one cannot manage or cope with pain can result in negative feelings towards one's self, roles, identity, and ability to be in control of one's body. In fact, people with FM seem to have more negative feelings towards themselves and about their work situations than those without FM (Gaston-Johansson et al., 1990). In addition, compared to people with RA, people with FM felt that they were more helpless, weaker, ill more often, more preoccupied with their aches and pains, and were more pessimistic about their future. Moreover, they felt mistrusted by others regarding the authenticity of their condition, required assistance to complete activities of daily life from family and friends due to their own functional limitations and were less active. These results, when compared to
findings of other research on chronic pain patients, indicate that such negative feelings can create a cycle of declining self-esteem and self-confidence, feelings of alienation and mistrust from society and difficulty in coping with life (Gaston-Johansson et al., 1990).

Such biopsychosocial factors, as mentioned above, can also affect a person's quality of life. There have been several studies of FM and quality of life (Burckhardt, Clark & Bennett, 1993; Burckhardt, Archenholtz, et al., 1993; Martinez, Ferraz, Sato & Atra, 1995; Burckhardt et al., 1997; Neumann & Buskila, 1997). Burckhardt, Clark, and Bennett (1993) concluded that people with FM have low quality of life scores, when compared to people who were insulin-dependent, had chronic obstructive pulmonary disease, or had other rheumatic diseases. Specifically, scores on the items of health, learning, self-understanding, work and active recreation were significantly different from the grand mean for the other illnesses. Similar results were also found by Burckhardt, Archenholtz, et al. (1993) where people with FM were compared to people with RA and systemic lupus erythematosus. The FM group had significantly lower quality of life scores for health, interactions with relatives and close friends, participation in organizations, learning, socializing and passive recreation. Neumann and Buskila (1997) found that their sample of individuals with FM had significantly lower quality of life scores when compared to the participants relatives (with and without FM) and a healthy control group.
A recent study by Burckhardt et al. (1997) on pain coping strategies and the relationship to pain, fatigue, and quality of life discovered that the level of depression was the strongest predictor of quality of life. Moreover, catastrophizing, perceived inability to control and decrease pain were also significant factors which negatively affected quality of life.

The quantitative psychosocial literature on FM has characterized people with FM as depressed and anxious as well as having a poor quality of life and decreased functional ability. However, it is also important to examine how people with FM describe their own lives. Schaefer's (1995) qualitative study portrayed life with FM as being on a continuum ranging from 'simple annoyance' to 'absolute devastation'. The women in her study stated that they searched for years for a diagnosis, as well as for legitimization from physicians, family, and friends. This long search left many women with feeling loss of control, fear of the worst, and a depletion of financial, physical, psychological, and social resources. Receiving a diagnostic label provided validation and fostered hope for the future. However, no matter what the perception, life with FM was always a struggle to maintain a balance (see Table 2).

Henriksson's (1995a, 1995b) two-part study on living with continuous muscular pain focused on the individuals' encounters with family, friends, and health professionals, as well as on the consequences of having the disorder and strategies for daily life. The purpose of this research "was to explore how women
<table>
<thead>
<tr>
<th>Thematic Area</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Recalling perceived normality:</strong></td>
<td>Is the process of reflecting and talking about the life the women lived prior to beginning their illness</td>
</tr>
<tr>
<td><strong>Searching for a diagnosis:</strong></td>
<td>Making sense out of ambiguity</td>
</tr>
<tr>
<td></td>
<td>Noticing something is wrong</td>
</tr>
<tr>
<td></td>
<td>Fearing the worst</td>
</tr>
<tr>
<td></td>
<td>Convincing others: health care workers, friends, family &amp; co-workers</td>
</tr>
<tr>
<td></td>
<td>Losing my marbles</td>
</tr>
<tr>
<td></td>
<td>Depleting resources: financial, physical, psychological and social</td>
</tr>
<tr>
<td></td>
<td>Taking forever to find out</td>
</tr>
<tr>
<td><strong>Finding Out:</strong></td>
<td>Making attributions</td>
</tr>
<tr>
<td></td>
<td>Denying</td>
</tr>
<tr>
<td></td>
<td>Trying everything: home remedies, non-traditional approaches, allergies, avoiding toxins</td>
</tr>
<tr>
<td><strong>Moving On:</strong></td>
<td>Finding meaning: occurred when the women were able to find some good in their own suffering.</td>
</tr>
<tr>
<td></td>
<td>Living day by day: is the process of managing the illness by</td>
</tr>
<tr>
<td></td>
<td>making choices about one's lifestyle</td>
</tr>
<tr>
<td></td>
<td>Creating a safe environment</td>
</tr>
<tr>
<td></td>
<td>Transcending the illness</td>
</tr>
<tr>
<td><strong>Relinquishing the struggle:</strong></td>
<td>Give up the struggle to maintain a balance.</td>
</tr>
</tbody>
</table>

with fibromyalgia, living in two different countries, perceived and described their situation" (Henriksson, 1995a, p. 68). Her participants consisted of 40 outpatients, 20 from Sweden and 20 from the United States. This study was not a purely qualitative study, as it used a semi-structured interview based on a combination of questions from the English and Swedish versions of the Occupational Case Analysis Interview and Rating scale (OCAIRS) (Kaplan & Kielhofner, 1989; Haglund & Henriksson, 1994) and open-ended questions specifically related to FM. The questions from OCAIRS measured factors such as roles, habits, skills, physical and social environment, motivation factors and life history. The conclusions of Henriksson's study (1995b) were that:

[a person with FM has a] general outlook on life, shaped by earlier experiences and the surrounding sociocultural environment, [and this] will have a decisive influence on the person's ability to adjust to the new situation, accept disabilities and rearrange life. The attitude of the person to the situation will also decide how the person perceives the quality of life that can be obtained. (p. 85)

The lack of a diagnosis is a barrier to living constructively with the disorder and caused anxiety and depression in the subjects. Moreover, the disrupted routines, the lack of information on effective treatments, feeling compelled to take on the "sick role", and a lack of social support contributed to a decrease in psychological and
physical health status.

Living with FM is an individual experience, yet these two studies demonstrated several themes which are common to persons living with this disorder. The main conclusion is that living with FM is a life of living with uncertainty. It is evident that the psychosocial impacts of FM are enormous, affecting every aspect of life from psychological disposition to maintain the ability to work, participate in leisure and recreational activities, maintain family roles and obtain a satisfying quality of life.

(2.5) Interventions

To date, there has been no single treatment which completely resolves the symptoms of FM. While some treatments may alleviate symptoms for one person, they may not for another. In addition, since the impact and symptoms of FM are as multifactorial and individual as the proposed mechanisms which influence the disorder, so are the treatments. Another problem with the treatment of FM is that there have been only a few dozen controlled, randomized trials with an adequate number of participants (Carrette, 1995).

McCain's (1996) review of treatments found that there are numerous medicinal and non-medicinal treatments for FM; however, the long-term effects of these interventions are still under investigation (see Table 3). The lack of adequate interventions to alleviate the physical, psychological and social distress created by this condition is costing society an enormous amount. In order to estimate the
Table 3

Treatment Options in FM

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Proven</th>
<th>Unproven</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medicinal</td>
<td>1. Amitriptyline</td>
<td>1. Imipramine</td>
</tr>
<tr>
<td></td>
<td>2. Cyclobenzaprine</td>
<td>2. Fenfluramine</td>
</tr>
<tr>
<td></td>
<td>3. Alprazolam</td>
<td>3. Fluoxetine</td>
</tr>
<tr>
<td></td>
<td>5. Maprotiline</td>
<td>5. Prednisone</td>
</tr>
<tr>
<td></td>
<td>6. Zopiclone</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7. Dothiepin</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8. S-adenosyl-methionine</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9. Kentaserin</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10. Regional sympathetic block</td>
<td></td>
</tr>
<tr>
<td>Non-medicinal</td>
<td>1. Cardiovascular fitness</td>
<td>1. Ice/Heat</td>
</tr>
<tr>
<td></td>
<td>training</td>
<td>2. Transcutaneous nerve</td>
</tr>
<tr>
<td></td>
<td>2. EMG biofeedback</td>
<td>stimulation</td>
</tr>
<tr>
<td></td>
<td>3. Cognitive behavioural</td>
<td>3. Interferential current</td>
</tr>
<tr>
<td></td>
<td>therapy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Hypnotherapy</td>
<td>4. Iontopheresis</td>
</tr>
<tr>
<td></td>
<td>5. Electroacupuncture</td>
<td>5. Postisometric relaxation</td>
</tr>
<tr>
<td></td>
<td>6. Myofascial release</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7. Laser therapy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8. Massage</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9. Local injection/dry needling</td>
<td></td>
</tr>
</tbody>
</table>

annual expenditure on people with FM and related disabilities claimed from insurance companies across Canada, Cameron (1995) reviewed a sample of active disability claims from London Life Insurance Company, and projected these results over the total caseload across the insurance industry. His results estimated yearly payments of over $2 million dollars for people on long term disability due to FM for London Life Insurance Company alone, and an annual expenditure of over $100 million dollars distributed to people with FM, repetitive strain injury, and chronic fatigue across the industry. With the chronic nature of FM, and more people depending on long term disability as a source of income due to a lack of effective interventions, the individual and social costs of FM will continue to increase.

In conclusion, there is still a great need for further randomized controlled trials to evaluate the treatments for FM, particularly in alternative treatments as their use in on the increase for those discouraged by the lack of effective clinical treatments and therapies (Pioro-Boiset, Esdaile, & Fitzcharles, 1996). Moreover, it is necessary to pursue research which identifies those in greatest need of intervention in the clinical and community populations and distribution of such information in lay terms to individuals with FM.
CHAPTER THREE

Theoretical Framework

(3.1) **Overview**

The previous chapter demonstrated that FM is a chronic, multidimensional, and dynamic disorder that impact several domains of life. However, research concerning this population on the effects of stress, how one copes with stress, and overall quality of life is limited. Thus, it is necessary and appropriate to employ a theoretical framework which emphasizes stress, coping, and quality of life and acknowledges these factors. The stress and coping aspects are conceptualized using Lazarus and Folkman's (1984) cognitive theory of stress, appraisal, and coping which account for the individual complex transactional, biopsychosocial factors involved in the perception and stress and coping in healthy and ill populations (Folkman & Lazarus, 1986; Folkman, Chesney, Pollack & Coates, 1993; Mishel & Sorenson, 1993; Wineman, Durand & Steiner, 1994; Downe-Wamboldt & Melanson, 1995). The quality of life model chosen was the Centre for Health Promotion (CHP) conceptual approach to quality of life (Renwick & Brown, 1996). This model recognizes the multidimensional aspects of perceived quality of life, which encompasses physical, psychological, spiritual, social, occupational, and self-development factors.

(3.2) **Definitions**

Definitions for the major factors under investigation in this study are as
follows:

<table>
<thead>
<tr>
<th>Stressor</th>
<th>&quot;A particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being&quot; (Lazarus &amp; Folkman, 1984, p. 19).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive Appraisal</td>
<td>&quot;Is an evaluative process that determines why and to what extent a particular transaction or series of transactions between the person and the environment is stressful&quot; (Lazarus &amp; Folkman, 1984, p. 19).</td>
</tr>
<tr>
<td>Primary Appraisal</td>
<td>Is the process of perceiving an event outcome as irrelevant, benign-positive, or stressful to the person's well-being (Lazarus &amp; Folkman, 1984).</td>
</tr>
<tr>
<td>Secondary Appraisal</td>
<td>&quot;Is a complex evaluative process that takes into account which coping options are available, the likelihood that a given coping option will accomplish what it is supposed to, and the likelihood that one can apply a particular strategy or set of strategies effectively&quot; (Lazarus &amp; Folkman, 1984, p. 35).</td>
</tr>
<tr>
<td>Coping</td>
<td>&quot;Constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person&quot; (Lazarus &amp; Folkman, 1984, p.141).</td>
</tr>
<tr>
<td>Quality of Life</td>
<td>&quot;The degree to which the person enjoys the important possibilities of his/her life&quot; (Renwick &amp; Brown, 1996, p. 80).</td>
</tr>
</tbody>
</table>

(3.3) **Stress, Appraisal & Coping**

Lazarus and Folkman's (1984) theory maintains that what is considered to be a stressor for one person may or may not be a stressor for another person. For example, stressors in the lives of people with FM may include pain, fatigue, side
effects of medication, financial loss, loss of social support, or a combination of these factors. However, one person with FM may perceive pain as a salient stressor, whereas another person may perceive the loss of close friendships as the prevalent stressor. Yet it should be remembered that stressors in the lives of those with FM may not necessarily be a consequence of the disorder.

Perception of a stressor, such as pain or loss of friendship, as stressful occurs in two phases. The two processes involved are cognitive appraisal (both primary and secondary) and coping. Understanding the cognitive appraisal process illuminates individual and group variations of perceptions and responses to a similar event. Cognitive appraisal and coping are influenced by the individual's personal and situational factors. In summary, the factors which influence a person's appraisal of stress and their chosen methods of coping include: past experiences, values, beliefs, commitments, styles of perceiving or thinking about their environment, health status, timing of the event in one's life cycle, and the novelty, predictability, controllability, imminence, duration, temporal uncertainty, and ambiguity of the stressful situation. (Lazarus & Folkman, 1984). Other influences, as noted by Sternbach (1978) and Krohne (1989), include personality and socio-economic status (Weisenberg, Kreindler, Schachat & Werboff, 1975).

The two interdependent processes of cognitive appraisal are primary and secondary appraisal. This thesis is concerned with those events which have been primarily appraised as changeable, manageable, or having to be accepted, and the
ways in which one manages the stressor. Collectively, the potential management
techniques of the stressful event are referred to as secondary appraisal. The
situation and the options available to manage the situation are unique to the
individual and his/her experiences. Therefore, different people can cope with a
similar experience in different ways, and the same individual can cope with a
similar stressor in different ways. Once these processes of primary and secondary
appraisal have taken place, and new information has been gathered regarding the
perceptions and coping behaviours, Lazarus and Folkman state that the individual
reappraises the event and modifies the primary and secondary processes as needed.

These cognitive processes influence the specific actions and behaviours
which one will take to cope with the stressful event. The two major types of
coping that a person uses have been labelled problem-focused coping and emotion-
focused coping. Problem-focused coping is an analytical process aimed at the
environment. It involves defining the stressful situation, generating potential
solutions, evaluating the solutions on their merits, and then choosing and acting
upon the chosen strategy. Seeking social support (e.g., talking to someone) and
planful problem solving (e.g., making a plan of action and following it) can be
considered problem-focused techniques. Emotion-focused coping is a cognitive
process that can reduce or increase emotional distress caused by a stressful
encounter. Cognitions and/or behaviours which can be considered to be emotion-
focused include distancing (e.g., avoiding being with people) and wishful thinking
The way an individual appraises and copes with an event will affect the outcome, be this a favourable resolution, unfavourable resolution, or no resolution (see Figure 2). A favourable outcome normally leads to the cessation of a coping behaviour. An unfavourable outcome or no resolution may lead to distress and additional coping, or "positive psychological states that are the result of meaning-based processes that individuals use to cope with the stress itself" (Folkman, 1996, p. 21). In conclusion, it is important to understand the social, psychological, and physical outcomes that certain degrees and types of stress and coping efforts produce, as these factors are not only interdependent, but independent (Lazarus & Folkman, 1984) and may influence a person's quality of life.

(3.4) **Quality of Life**

Many conceptual models of quality of life have been developed (Milbrath, 1982; MacFarlane, Brown, & Bayer, 1989; Goode, 1990; Zhan, 1992). However, these models were not completely satisfactory in addressing all the issues of concern to this project.

The CHP quality of life conceptual approach was developed through literature reviews, consultation with experts, and input by consumers with and without disabilities from various cultures and socio-demographic backgrounds. It recognizes the complex transactions between the person and environment which contribute to perceived quality of life. The model also emphasizes that quality of
Figure 2

Lazarus and Folkman's Stress, Appraisal, and Coping Theory - Revised Model

life is dynamic and, therefore, has the potential to be changed. This model shares common ground with Lazarus and Folkman's cognitive theory of stress, appraisal, and coping in that it acknowledges that quality of life is affected by many factors and individual perceptions. For instance, under similar circumstances, what is perceived to be a good quality of life for one person, may not be perceived to be a good quality of life for another, just as similar events may or may not be perceived as stressful for different people.

The CHP approach views quality of life as "the degree to which the person enjoys the important possibilities of his/her life" (Renwick & Brown, 1996, p. 80). The two key words in this phrase are 'enjoys' and 'possibilities'. Enjoyment involves the possession or attainment of things or goals meaningful to the individual and the satisfaction or pleasure derived from them. Possibilities include the net balance of physical, psychological, social, occupational, spiritual, and self-growth opportunities and constraints in a person's life, which may or may not be under the direct control of the individual. For instance, being born with a disability or into a deprived environment, or acquiring a disease may not be under control of the individual. Yet these factors may hinder or assist the development or maintenance of possibilities in another area (see Figure 3).

There are three domains of a person's life on which this approach focuses: Being, Belonging, and Becoming (see Table 4). The "Being" aspect of this approach focuses on who is the individual in terms of his/her physical,
Degree to which a person enjoys the important possibilities of his/her life

Opportunities & Constraints

By Chance  ↔  By Choice

Person  ↔  Environment

Components of QOL:
Being
Belonging
Becoming

Figure 3
Relationship of Definition to Conceptual Framework

### Table 4

**Quality of Life: Major Components and Sub-components**

<table>
<thead>
<tr>
<th>COMPONENTS and Sub-Components</th>
<th>Aspects of Life Included in Sub-Components</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BEING</strong></td>
<td></td>
</tr>
<tr>
<td>Physical Being</td>
<td>Physical health, mobility/agility, fitness, appearance, nutrition</td>
</tr>
<tr>
<td>Psychological Being</td>
<td>Feeling about self, self-confidence, self-control, initiating positive behaviours, coping with anxiety</td>
</tr>
<tr>
<td>Spiritual Being</td>
<td>Having values to live by (e.g., sense of right and wrong), transcending daily life experiences (e.g., through music, nature), celebrating special life events (e.g., birthdays, Thanksgiving and other cultural or religious holidays/events)</td>
</tr>
<tr>
<td><strong>BELONGING</strong></td>
<td></td>
</tr>
<tr>
<td>Physical Belonging</td>
<td>Feeling &quot;at home&quot; with one's physical environment, having and displaying personal possessions, having safety and privacy.</td>
</tr>
<tr>
<td>Social Belonging</td>
<td>Having meaningful relationships with others (e.g., partner or close other, friends, family, co-workers, neighbours)</td>
</tr>
<tr>
<td>Community Belonging</td>
<td>Having access to public events/resources available to members of one's community (e.g., work, education, money, services)</td>
</tr>
<tr>
<td><strong>BECOMING</strong></td>
<td></td>
</tr>
<tr>
<td>Practical Becoming</td>
<td>Doing practical, purposeful activities (e.g., household chores, paid or volunteer work, school or other programs, self-care)</td>
</tr>
<tr>
<td>Leisure Becoming</td>
<td>Doing leisure/planned recreation/social activities, doing hobbies, having breaks from daily routines, going on vacations</td>
</tr>
<tr>
<td>Growth Becoming</td>
<td>Learning new information, improving existing skills, learning new skills, adapting to changes in one's life.</td>
</tr>
</tbody>
</table>

psychological and spiritual being, and is "experienced in a particular context, a certain time, place and culture" (Raphael, Brown, Renwick, & Rootman, 1994, p. 37). These areas are influenced by many variables, such as experience, culture, values, ethics, self-confidence, and coping (Raphael et al., 1994; Renwick & Brown, 1996).

The "Belonging" aspect encompasses physical, social, and community factors, and how people think and feel about these aspects of their environment. The "Becoming" domain encompasses practical, leisure, and personal growth activities in peoples' lives. The activities that one partakes in this domain are related to what a person does to achieve hopes, goals, and aspirations. For an in-depth discussion of these nine dimensions, please refer to Renwick and Brown (1996). All in all, there are four factors which determine and influence quality of life. The determining factors are the relative importance of each domain in the person's life and the degree of satisfaction one has within those domains in one's life. The influencing or moderating factors are the amount of control one has over the nine domains and the opportunities available for the individual to change improve in these nine areas of life (Renwick, Brown, & Raphael, 1994).

Taken together, Lazarus and Folkman's theory of stress, appraisal and coping, and the CHP quality of life model provide a foundation for this thesis from which to gain a meaningful view of the situation experienced by individuals with FM. Research to date has seemed to ignore the fact that FM is only one aspect of
the individual; it is not the only defining quality of the person. Finally, FM may affect various areas of a person's life, but various aspects of a person's life may also affect FM.

(3.5) **FM, Stress, Coping & Quality of Life**

According to Seta, Seta, and Erber (1991) experiencing numerous negative stressful events will pose a negative effect on an individual's physical and psychological well-being. Thus, coping with numerous stressors may be very difficult at times, even if an individual has appropriate coping resources. People with FM are likely to have to cope with numerous sources of stress such as the following: limitations in motor function, reduced energy, pain, loss of abilities, decreased fitness level, threats to self-esteem, self-confidence and self-efficacy, and relational and socio-economic difficulties (Henriksson, Gundmark, Bengtsson, & Ek, 1992; Henriksson, 1994, 1995a, 1995b, 1995c; Schaefer, 1995). These stressors, and consequences, have also been found to be common among individuals with other rheumatic and chronic disorders such as RA and chronic fatigue syndrome (Abbey, 1995; Downe-Wamboldt & Melanson, 1995).

This information does not assume that an "ill person" does not cope with stress effectively and that a healthy person does, because with so many variables involved in appraising a stressful situation and coping, the very opposite may be true. But it must be recognized that someone with a serious illness may have different, and possibly more, stressors than persons without a serious illness.
(Taylor, 1995). No doubt, people with FM are continually challenged to make adjustments and acquire functional behavioural patterns to cope with their chronic condition and general biopsychosocial demands.

How a person with FM perceives and copes with the stress in their life has not been investigated to date. Therefore, findings from studies of other populations must serve as a foundation for this inquiry. It has been demonstrated that the context and perception of controlling the outcome of a stressful event were related to the type of coping one uses. For instance, Folkman and Lazarus' (1980) study of a middle-aged community sample, found that health-related stressors and lack of control over the outcome was associated with the use of emotion-focused coping. Whereas, work-related stressors and the perception of control over the outcome were connected to the use of problem-focused strategies.

Moreover, studies on controllability have also concluded that perceived control over a stressful event affects an individual’s ability to cope with stress (Taylor, 1983; Taylor, Helgeson, Reed, & Skokan, 1991). In the literature on RA, having greater perceived control was related to a greater functional outcome (Affleck, Tennen, Pfeiffer, & Fifield, 1988). Research on FM has indicated that people with this condition lack personal control over health-related issues. Thus, investigating stress controllability and coping will be significant.

In addition to perceived control over a stressful event being associated with various outcomes, the particular strategies that individuals use to cope with stress
has been associated with differing outcomes. Whether the use of specific strategies is more adaptive than the use of others has been debated. However, specific strategies are not inherently adaptive or maladaptive because a strategy that helps reduce stress in one context may be counterproductive in another (Lazarus & Folkman, 1984; Lazarus, 1985; Tunks & Bellissimo, 1988). For example,

cross-sectional studies have shown that emotion-focused coping that involves avoidance is positively related to psychological symptoms, whereas problem-focused coping that involves selective attention (such as focusing on those aspects of a situation that might promote personal growth) is negatively related to symptoms (Folkman et al., 1993, p. 410).

But some strategies may be related to various levels of adjustment and psychological problems (Rosentiel & Keefe, 1983; Folkman et al., 1993).

Greater psychological well-being has been attributed to: the use of optimistic coping strategies, information seeking, and cognitive restructuring in people with RA (Parker et al., 1988; Manne & Zautra, 1989; Downe-Wamboldt & Melanson, 1995); the use of cognitive strategies such as information seeking in people with chronic illnesses (Felton et al., 1984); and the use of problem solving techniques in people with depression (Billings & Moos, 1984).

Lower psychological well-being has been associated with: the use of emotive coping strategies, self-blame, and wishful thinking in RA (Parker et al.,
1988; Manne & Zautra, 1989; Downe-Wamboldt & Melanson, 1995); the use of emotional strategies such as avoidance and blame in chronically ill adults (Felton et al., 1984); and the use of emotional-discharge in people with unipolar depression (Billings & Moos, 1984). Also found in Folkman et al. (1993) study of people with HIV was that managing stress by means of detachment coping strategies such as self-controlling coping, distancing, and cognitive escape-avoidance was associated with an increase in depressive mood scores.

In addition to certain strategies having an impact on psychological adjustment, the mental health of an individual and the amount of stress experienced are also related to the types of strategies used. For instance, depressed people perceive and cope with stress differently (Folkman & Lazarus, 1986). Specifically, people with depression felt they had greater stakes in certain encounters, used more hostile measures to cope with their stress (e.g., confrontive coping), and responded to stress with more anger, fear, and worry than non-depressed people. Parker et al. (1988) found that people with RA who had high depression scores used wishful thinking techniques at a significantly higher level than cognitive restructuring techniques. This group also had higher helplessness scores, more daily hassles and greater severity of those daily hassles. Aldwin and Revenson's (1987) longitudinal study of a community sample found that those with poor mental health and high levels of stress were more prone to use less adaptive techniques such as escapism. However, coping efforts affected mental health
independent of prior symptom levels and degree of stress. Depression in the FM population has been established in the literature. Thus, it is essential that depression be assessed in this thesis as it may have consequences for the perception of stress and the way that an individual copes with the stress. Moreover, depression is also important to assess for people with FM because it also affects perceptions of quality of life (Burckhardt et al., 1997).

Coping with stress can also impact quality of life. Renwick and Friedland's (1996) study of quality of life for adults with HIV, found that different types of coping affected various aspects of quality of life in different ways. Specifically, behavioural quality of life was positively affiliated with the use of problem-oriented coping and health-related quality of life was positively associated with perception-oriented coping (e.g., positive reappraisal of one's situation). However, emotion-focused coping was negatively associated with behavioural quality of life. Behavioural quality of life assumes that "certain actions or behaviors of an individual in response to particular environmental domains can be considered to represent a good quality of life" (Evans & Brown, cited in, Renwick & Friedland, 1996, p. 177).

In summary, this literature review has demonstrated that stress, stress appraisal, coping, and mental and physical health all affect an individual's adjustment to an illness and overall quality of life (Burckhardt et al, 1997). However, since there is limited knowledge regarding how certain variables, such
as coping and stress, do influence quality of life, more research in this area is required.
CHAPTER FOUR
Research Questions

(4.1) Research Questions

The general goal of this study was to gain information on current perceived stressors in the lives of people with FM, understand how they cope with such stressors and the implications for quality of life. The objectives of this study are listed below. The instruments used to address the research questions appear in parentheses.

1. To describe socio-demographic characteristics of a sample of women with FM (socio-demographics questionnaire).

2. To describe the physical and psychological health of the participants (Fibromyalgia Impact Questionnaire, the History and Symptoms of FM Questionnaire, and the Beck Depression Inventory).

3. To identify current perceived stressors and determine an overall stress score for the individual participants and the entire sample (Stressors Questionnaire).

4. (a) To determine an appropriate factor solution for the WOCQ for this sample; (b) to identify the extent to which problem-focused and emotion-focused coping are used to manage a stressful situation; and, (c) to evaluate the difference in the identified coping factors due to stress appraisal (Ways of Coping Questionnaire).
5. To assess the perceived quality of life of women with FM (Quality of Life Profile - Adult Version and the Quality of Life Scale by Flanagan).

6. To develop and test a model to determine the extent to which quality of life is a function of stress and coping as well as socio-demographic and health factors (see Figure 4).

The relationships between the socio-demographic, health, stress, coping and quality of life variables as presented in Figure 4 are based on the research findings detailed in the literature review in Chapter 3. It is hypothesized from these findings that:

(1) Individuals who are experiencing moderate to severe levels of depression would report higher functional impairment and stress scores, use more emotion-focused coping, and report lower quality of life scores (Uveges et al., 1990; Folkman & Lazarus, 1986; Burckhardt et al., 1997).

(2) Persons with greater functional difficulties would experience more stress, use more emotion-focused coping, and also report lower levels of quality of life (Folkman & Lazarus, 1980; Burckhardt et al., 1997; Neumann & Buskila, 1997).

(3) Participants with high levels of stress would report lower quality of life scores (Seta et al., 1991).

(4) Using more problem-focused coping would result in the reporting of higher quality of life scores and using more emotion-focused coping would result in the reporting of lower quality of life scores (Renwick & Friedland, 1996).
(5) Those who perceived their stress as controllable would use more problem-focused coping and those who perceived their stress as uncontrollable would use more emotion-focused coping (Lazarus & Folkman, 1984).
Socio-demographics
Health Status

Problem-Focused Coping
Emotion-Focused Coping

Stress

QUALITY OF LIFE

Figure 4

General Model to be Tested in the Study
CHAPTER FIVE

Methodology

(5.1) Design

A cross-sectional, ex-post facto design with no manipulation of independent variables or assignment of participants to an experimental condition was used.

This study examines a model to assess the extent to which quality of life is a function of stress, and coping, as well as socio-demographic and health-related factors.

(5.2) Sample

A sample of 92 females was recruited through the office of Dr. W. J. Reynolds, a rheumatologist at The Toronto Hospital, Western Division, over a 4-month period. This out-patient clinic is a major site to which people with FM are referred for diagnosis and treatment.

Women who met the following criteria were included in the study: diagnosis of FM using the ACR diagnostic criteria for FM (Wolfe et al., 1990), female, between the ages of 25 to 75 years, and English-speaking. Individuals with other life-threatening or serious physical and/or psychiatric disorders were excluded from the study. Individuals with other diagnosed diseases/conditions which also excluded potential participants were lupus, RA, cancer, heart disease, or any other conditions which, in Dr. Reynolds' clinical judgement, would bias or confound the study results.
(5.3) **Procedures**

Dr. Reynolds provided eligible patients with an information letter about this study after their appointment. Those who wished to participate after reading the information letter, obtained a consent form, questionnaire package, and FM educational package from Dr. Reynolds' secretary after their scheduled appointment. The educational package on FM included information on managing stress and pain, and treatment programs in the Toronto area. See Appendix A for the information letter and consent form.

(5.4) **Instruments**

Several measures were used in this study. The questionnaire package appears in Appendix B.

**Socio-demographics and History of FM Symptoms Questionnaire.**

The questionnaire on socio-demographics and the history of FM symptoms questionnaire were developed based on questions used in Goldenberg, Mossey, and Schmid's (1995) work on a model to assess severity and impact of FM, the Arthritis Impact Measurement Scales (Meenan, Gertman, & Mason, 1980) and the Quality of Life Profile: Adult Version (QOLP) developed by the CHP (1996). The socio-demographic questionnaire provided information on age, living situation, marital status, ethnicity, income, and education. The history of FM symptoms questionnaire provided information on disease duration, health care professionals consulted, medications used to treat the condition, and current symptoms.
**Functional Impact.**

The functional impact of FM was assessed using the Fibromyalgia Impact Questionnaire (FIQ) (Burckhardt, Clark & Bennett, 1991). The FIQ is a self-administered questionnaire which takes approximately five minutes to complete. The purpose of the FIQ is to measure the participant's status, progress and outcome. The FIQ contains 19 items which are intended to measure the potential functional implications of FM in a person's life. The first 10 items are based on a four-point Likert-type scale and measure physical functioning. The next two questions ask respondents to mark the number of days they felt well and number of days they missed work because of their FM symptoms. The last seven questions ask respondents to rate the difficulty in doing their job, pain, fatigue, feelings on arising, stiffness, anxiety and depression along a 100 millimetre visual analog scale. Scores are then normalized on a range from zero to 10, with zero indicating no functional impairment and 10 indicating maximum impairment in that domain. Normalized scores are then summed to create a total score on a scale ranging from zero to 100.

"Test-retest reliability correlations (Pearson r) for each item of the FIQ ranged from an average of 0.56 for pain to 0.95 for physical function over the 6 1-week intervals" (Burckhardt et al., 1991, p. 730). Moreover, this measure demonstrated both content validity and construct validity and is now widely used in research on FM in North America and Europe (Kaplan, Goldenberg, & Galvin-
Depression.

Depression was assessed using the Beck Depression Inventory - Adjusted (BDI-A) version as developed by Burckhardt et al. (1994). This version of the BDI is more appropriate to use in the FM population because it deletes three questions which are classified as FM symptoms and consequences, as judged by eight rheumatologists. There was 75% percent agreement on which questions to delete. The three questions deleted concerned energy and effort required to complete tasks, difficulty sleeping and sense of tiredness. Therefore, this questionnaire consists of 18 questions based on a four-point Likert-type scale. Individual scores are then summed to create a total depression score. The potential range of scores for the BDI-A is from zero to 54.

The results from the preliminary study using this disease-free version of the BDI demonstrated that this measure was more specific but had fewer true positive results than the original BDI. This study found that 29% of the participants were depressed using the BDI-A; whereas, 55% were considered depressed using the BDI. Thus, "although the BDI-A had a specificity of 96% at a cutoff point of twenty-one or greater, its sensitivity at that cutoff point was only 45%" (Burckhardt et al., 1994, p. 37). The conclusion was that the BDI-A is a better
alternative for assessing depression in people with FM, but that the clinician should be wary of potentially missing the diagnosis of depression in a patient. As in the study conducted by Burckhardt et al. (1994), a cutoff point of 21 was used for assessing moderate to severe depression with this sample.

**Stressors Questionnaire.**

The stressors questionnaire was adapted from Folkman et al. (1993) in their study on stress, control, coping, and depressive mood in males with and without HIV. This measure was used because of its relation to the stress, appraisal, and coping theory developed by Lazarus and Folkman (1984), and assesses many of the variables being examined in this study.

The questionnaire consists of a 10 items and asks participants to indicate on a four-point Likert scale (ranging from zero, meaning no stress to three, meaning a great deal of stress) the amount of stress experienced in each domain over the past month. Scores are then summed to create a total stress score. The total score can range from zero to 30. The 10 stress domains are: relationships with friends, relationships with family, primary relationships, work, finances, illness of people close to them, death of someone close to them, their own health, political issues and another event (to be described) if applicable.

The participant is then asked to identify the most stressful situation, as listed above, and to describe the specific situation. For instance, if work was the most stressful event, the specific event at work could be the loss of a co-worker, an
argument with the individual's employer, or a pay freeze. The reason for choosing this approach, instead of asking participants to list stressors, was to allow for easy categorization of the stressors and to obtain a total stress score.

**Coping.**

How one copes with one perceived stressor was accomplished using the Ways of Coping (Revised) (WOCQ) by Folkman and Lazarus (1985) which is based on their cognitive theory of stress, appraisal and coping. This is a self-administered process measure with 66 items which include a variety of thoughts and actions that people may use to cope with a situation which they have deemed stressful. This stressful situation was identified in the stressors questionnaire and is again to be restated before answering the questionnaire. This stressful situation must be deemed as a situation which was challenging, harmful or threatening, and must have taken place in the past month.

Participants indicate the types of coping strategies used to manage the stressor on a four-point scale (ranging, zero indicating that the strategy was not used, to three, indicating the strategy was used a great deal). Scores for each factor are then summed to create a total score.

Validity and reliability studies for this questionnaire were originally with using a group of college students (Folkman & Lazarus, 1985) and a community sample of middle-aged, married couples (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986), and resulted in an eight-factor solution model.
However, Mishel and Sorenson (1993) could not replicate the eight-factors solution in their clinical population. Wineman, Durand, and McCulloch (1994) also determined that the eight-factor coping model was inadequate for measuring the stressful aspects of living with a disability or chronic illness for a sample of people with multiple sclerosis and spinal cord injuries. Wineman et al. (1994) stated that "the coping strategies in the WCQ have different meanings and measure different constructs depending on the study population" (p. 272), and concluded that "construct validity may not be generalizable across study groups" (p. 268). Therefore, a factor analysis on the WOCQ was run to determine an appropriate factor solution for this clinical sample women with FM.

**Stress Appraisal.**

Perceived control over stress was assessed in the WOCQ (Folkman & Lazarus, 1985). Participants were asked to indicate how much control they had over their reported stress. The four types of control that the participants could choose from included: could change or do something about the problem, had to accept or get used to the problem, needed to know more about the situation before they could act, or had to hold themselves back from acting on the situation. As reported earlier in this paper, appraisal of controllability over the outcome of the stressor had an impact on the types of coping strategies used and, eventually, the outcome.
QOLP.

The QOLP is based on the research conducted at the Quality of Life Research Unit at the CHP at the University of Toronto. It examines how important and how satisfied one is with nine dimensions of their life, and how much control and opportunity there is for change/enhancement in these areas. These nine areas are clustered in three major themes - Being, Belonging and Becoming. This approach to quality of life has mainly been influenced by research concerning persons with disabilities; however, all areas being measured are known to be important to people with or without disabilities (Renwick, Rudman, Raphael, & Brown, 1994; Renwick & Brown, 1996)

The QOLP is a self-administered questionnaire which takes between 15 and 20 minutes to complete. The QOLP consists of 108 questions in two sections. The two sections are the "importance section" and "satisfaction section". Each section consists of the same 54 questions, six questions in each of nine sub-domains. The nine sub-domains are titled "My Body and My Health", "My Thoughts and Feelings", "My Beliefs and Values", Where I Live and Spend My Time", The People Around Me", "My Access to Things", My Daily Activities", "What I Do For Enjoyment", and "What I Do To Improve or Change". The respondents indicate the importance of each question in their lives and their satisfaction with each question on a five-point scale. Thus, they are rating the same aspect of their lives two times. A score of one indicates not
important/satisfied at all and a score of five indicates extremely
important/satisfied.

The scores for the items ruled for importance are used to weight the
associated satisfaction scores to yield a total quality of life score. The formula for
this conversion is: (Importance Score/3) x (Satisfaction Score - 3). Thus, for
example, if an individual rates an item as high in both the importance section and
satisfaction section, then the resulting quality of life score will be high. However,
if an individual rates an item as high in the importance section and low is the
satisfaction section, then the resulting quality of life score will be low. Final
quality of life scores can range from -3.33 to +3.33.

Reliability and validity testing for this instrument is currently being done in
other studies as well as this one. However, there have been other versions of this
measure developed for use in the senior population (Raphael et al., 1995),
persons with developmental disabilities (Raphael, Brown, Renwick & Rootman,
1996), physical disabilities (Renwick et al., 1994), and adolescents (Raphael,
Rukholm, Brown, Hill-Bailey, & Donato, 1996). These measures have had their
reliability and validity assessed. For example, The Quality of Life Profile:
Seniors Version (Raphael et al., 1995) reliability results demonstrated that all
domains of the instrument surpassed standard acceptability with internal
consistency coefficients (Cronbach alpha) ranging from .82 to .98.
The QOLS developed by Flanagan (1978) for use in the general adult population is a self-administered 15-item questionnaire which takes approximately five minutes to complete, and has been used with the FM population (Burckhardt et al., 1993). This study used the 16-item version after qualitative research indicated that the scale needed an item to reflect the need for a person with a disability to remain independent and able to care for themselves (Burckhardt, Woods, Schultz, & Ziebarth, 1989; Burckhardt et al., 1993). The areas measured were physical and material well-being, relations with others, social, community and civic activities, personal development, and fulfilment and recreation. These domains were constructed after surveying 5,000 people of various ages, races and backgrounds from the United States and sorting 6,500 critical incidents into similar categories of behaviours and experiences. The items are judged on a seven-point Likert scale from "delighted" to "terrible", and all scores are then summed to create a total quality of life score which can range from seven to 112. Although correlation coefficients with overall quality of life were not presented in his article, Flanagan (1978) stated there was high correlation among material comforts, health, work, active recreation, learning and creative expression.

(5.5) **Statistical Analyses**

Chi-square and t-tests were performed to compare differences between non-respondents and respondents on main independent variables. Descriptive
analyses were carried out for the socio-demographic and medical history of the participants, and the main instruments used in the questionnaire package (i.e., FIQ, BDI-A, QOLS, QOLP, Stressors, and the WOCQ). The Kolmogorov-Smirnov test of normality was done for each questionnaire to ensure that data for each measure had a normal distribution. A factor analysis was run to assess a factor solution for the WOCQ. Univariate regressions were done between the criterion variables (i.e., QOLP and the QOLS) and independent variables, and correlations (Pearson r) were performed among all of the variables being investigated. A forward stepwise selection procedure was done to determine which subset of socio-demographic and health-related variables should be included in the hierarchical regression model. Finally, two hierarchical regression analyses were performed on the two criterion variables (i.e., QOLS and QOLP) and the independent variables. The computer program used for the analysis was SPSS 6.5.1 and 7.5.2.
CHAPTER SIX

Results

(6.1) Characteristics of the Sample

The socio-demographic characteristics of the sample and their medical history are reported for all of those respondents who returned their questionnaire packages. Table 5 summarizes information about these characteristics of the sample.

Participants ranged in age from 25 to 73 years ($M = 45.9, SD = 9.3$). Fifty-five participants (60.4%) were married, and 81 (89.0%) lived with one or more people, who included spouses, parents, children, relatives, and others not related to them.

Sixty-nine women (75.8%) in the sample were unemployed and 22 (24.2%) were employed at the time they completed the questionnaire package. Of those who were working, the mean number of hours worked weekly was 31.0 hours ($SD = 15.4$). Eighty-six (94.5%) participants felt that having FM affected their ability to work, whereas 5 (5.5%) felt that FM did not affect their ability to work. Fifty-three (58.2%) participants who were not working indicated that they were disabled; 13 (14.3%) stated that they were homemakers; 10 (11%) were volunteering; four (4.4%) were unable to find work; three (3.3%) were retired; three (3.3%) were unemployed by choice; and three (3.3%) attending school. Fourteen (15.4%) unemployed participants indicated that they engaged in more
Table 5

Socio-demographic Characteristics of the Sample (N = 92)

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 - 29</td>
<td>2</td>
<td>2.2</td>
</tr>
<tr>
<td>30 - 39</td>
<td>19</td>
<td>20.9</td>
</tr>
<tr>
<td>40 - 49</td>
<td>30</td>
<td>33.0</td>
</tr>
<tr>
<td>50 - 59</td>
<td>38</td>
<td>41.7</td>
</tr>
<tr>
<td>60 +</td>
<td>2</td>
<td>2.2</td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
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<td></td>
</tr>
<tr>
<td>Single</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>Married</td>
<td>55</td>
<td>60.4</td>
</tr>
<tr>
<td>Common-Law</td>
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<td>8.8</td>
</tr>
<tr>
<td>Separated</td>
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<td>6.6</td>
</tr>
<tr>
<td>Divorced</td>
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<td>12.1</td>
</tr>
<tr>
<td>Widowed</td>
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<td>1.1</td>
</tr>
<tr>
<td><strong>Living Situation</strong></td>
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<tr>
<td>Alone</td>
<td>10</td>
<td>11.0</td>
</tr>
<tr>
<td>With Others</td>
<td>81</td>
<td>29.0</td>
</tr>
<tr>
<td><strong>Employment Status</strong></td>
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<td></td>
</tr>
<tr>
<td>Employed</td>
<td>22</td>
<td>24.2</td>
</tr>
<tr>
<td>Unemployed</td>
<td>69</td>
<td>75.8</td>
</tr>
<tr>
<td><strong>Income</strong></td>
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<td></td>
</tr>
<tr>
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<td>27.5</td>
</tr>
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<td>$20,000 - $29,999</td>
<td>21</td>
<td>23.1</td>
</tr>
<tr>
<td>$30,000 - $39,999</td>
<td>9</td>
<td>9.9</td>
</tr>
<tr>
<td>$40,000 - $49,999</td>
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<tr>
<td>$50,000 +</td>
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<td>22.0</td>
</tr>
<tr>
<td><strong>Education</strong></td>
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<td></td>
</tr>
<tr>
<td>Elementary</td>
<td>6</td>
<td>6.6</td>
</tr>
<tr>
<td>High School</td>
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<td>15.4</td>
</tr>
<tr>
<td>College</td>
<td>35</td>
<td>38.5</td>
</tr>
<tr>
<td>University</td>
<td>21</td>
<td>23.1</td>
</tr>
<tr>
<td>Graduate/Professional</td>
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<td>14.3</td>
</tr>
<tr>
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<td></td>
</tr>
<tr>
<td>Canada</td>
<td>64</td>
<td>70.3</td>
</tr>
<tr>
<td>Other</td>
<td>27</td>
<td>29.7</td>
</tr>
</tbody>
</table>
than one activity (e.g., homemaker and volunteering or volunteering and student). Those who were unemployed received income from one or more of the following sources: unemployment insurance, disability insurance, family benefits, welfare, savings, spouse, Canada Pension Plan, Workman Compensation, pension, retraining allowance, and inheritance. One participant indicated no source of income. Sixty-nine participants (77.5%) had post-secondary education and 20 participants (22.5%) had a high school education or less.

Most participants (70.3%) were born in Canada. Some of the countries of origin included: United States of America (4.4%), Scotland (3.3%), Italy (4.4%), England (2.2%), Jamaica (2.2%), and India (2.2%). For those born elsewhere, the mean number of years in Canada was 28.4 (SD = 10.4). Ethnic backgrounds reported by participants included: English Canadian, French Canadian, British, Scottish, Irish, Italian, German, Dutch, Ukrainian, Hungarian, American, Polish, Jewish, Guyanese, Portuguese, East Indian, North American Indian, Metis, Philippino, Spanish, Lebanese, West Indian, Czechoslovakian, Persian, and Croatian. Forty-eight participants (52.7%) indicated one ethnic background, 16 (17.6%) indicated two ethnic backgrounds, 18 (19.8%) indicated three ethnic backgrounds, 7 (7.7%) indicated four ethnic backgrounds and 2 (2.2%) indicated five or more ethnic backgrounds.

(6.2) **Participants Medical History with FM**

The mean length of time since receiving a diagnosis of FM was 4.1 years
(SD = 3.2); however, the mean number of years since first experiencing symptoms of FM was 7.9 years (SD = 6.3). The mean difference between first noticing the symptoms of FM and receiving a diagnosis of FM was 3.8 years (SD = 5.6).

Forty-nine participants (53.3%) were diagnosed with FM by a rheumatologist, 17 (18.5%) were diagnosed by both their family physician and rheumatologist, 5 (5.4%) were diagnosed by their family physician, 4 (4.3%) were diagnosed by a rheumatologist and physical therapist, 2 (2.2%) were diagnosed by a rheumatologist and psychologist, and 2 (2.2%) were diagnosed by a psychologist. Other health professionals who detected FM in this sample included the following: occupational therapist, neurologist, chiropractor, haematologist, physiatrist, orthopaedic surgeon and a pain specialist.

Thirty-nine women (42.4%) reported that their FM developed through a physical trauma, 4 (4.3%) through a viral illness, 3 (3.3%) through emotional trauma, 15 (16.3%) through both emotional and physical trauma, 7 (7.6%) through both a viral illness and physical trauma, 6 (6.5%) through both a viral illness and emotional trauma, 7 (7.6%) reported an unknown cause, and 11 (11.9%) either reported other causes or causes were unreported.

Participants reported consulting with a variety of health professionals for treatment of their FM. These professionals included: rheumatologist (100%), family physician (94.6%), physical therapist (85.9%), massage therapist (64.1%), chiropractor (63.0%), support group (58.7%), acupuncturist (37.0%), fitness club
worker (37.0%), naturopath (28.3%), social worker (26.1%), occupational therapist (26.1%), psychiatrist (4.3%), and psychologist (3.3%). Six (6.5%) reported consulting with between one and three health professionals, 46 (50%) between four and six health professionals, 36 (39%) between seven and nine health professionals and 4 (4.3%) saw more than 10 health professionals for treatment of their FM.

Participants reported using a variety of medications for treatment of their FM. The most frequently reported medications were: acetaminophen (19.6%), amitriptyline (18.5%), cyclobenzaprine (17.4%), zopiclone (9.8%), paroxetine (8.7%), fluoxetine (6.5%), ibuprofen (6.5%), and lorazepam (6.5%). Thirty-five participants (38%) were not taking any medication, 31 (33.7%) took only one medication, 23 (25%) took two medications, and 3 (3.3%) took three or more medications.

Symptoms reported included pain (100%), fatigue (96.7%), weakness (92.4%), headache (84.4%), diarrhea/constipation (78.3%), swollen sensations (76.1%), numbness (73.9%), dry eyes (57.6%), sore throat (55.4%), cramps (54.3%), and fever (37.0%). Twenty-one participants (22.8%) reported experiencing between 4 and 6 symptoms, 51 (55.4%) between 7 and 9 symptoms and 20 (21.7%) more than 10 symptoms.

(6.3) Differences Between Respondents and Non-Respondents

Ninety-two of the 107 questionnaires distributed were completed and
return. Eleven of these participants were excluded from the descriptive analyses of the questionnaires, correlational, and regression analyses due to missing data on main variables under investigation. Therefore, the descriptive, correlational, and regression data analyses are based on data for 81 participants.

Significant differences were examined for all variables under study. For purposes of this analysis and the regression analysis, the categorical socio-demographic variables, such as, marital status, education and income were dichotomized. Those who were single, separated, divorced or widowed were categorized as zero, and those who were married or in common-law relationships were categorized as one. Participants who had education levels of high-school or below were categorized as zero, and those with college or above education levels were categorized as one. Respondents with incomes below $30,000 were categorized as zero, and those with income levels $30,000 and above were categorized as one.

The 11 respondents who did not send in complete data did not differ significantly from the 81 respondents on employment status ($\chi^2 = 3.582, df = 1, p = .110$), marital status ($\chi^2 = .662, df = 1, p = .718$), education ($\chi^2 = 3.269, df = 1, p = .089$), age ($t(89) = .139, p = .890$), FM impact (FIQ-T) ($t(90) = .236, p = .814$), depression (BDI-A) ($t(90) = -1.356, p = .179$), problem-focused coping ($t(88) = .591, p = .556$), emotion-focused coping ($t(88) = -1.113, p = .269$), QOLS ($t(90) = -.061, p = .951$), or the QOLP ($t(90) = -.349, p = .728$). However, these 11
respondents were significantly different with regard to stress level ($t(86)= 2.580$, $p = .012$), and income ($t(82) = -8.408$, $p = .000$). These individuals perceived significantly less stress ($M = 2.72$, $SD = .45$). With respect to income, eight of the 11 respondents with missing data did not report their income, therefore, the comparison was based on the income of only three participants' data, thus, this result is not representative.

(6.4) Tests of Normality

The Kolmogorov-Smirnov test of normality rejected the idea that two of the measures used came from a normal distribution. Specifically, the FIQ (statistic = .105, $df = 81$, $p = .029$), and the Stressors Questionnaire (statistic = .102, $df = 81$, $p = .038$). Examination of the histogram for the FIQ indicated that the lack of normality stemmed from excessive negative skewness. To correct for this, the distribution of the scores were reflected by subtracting the original FIQ scores from the closest integer greater than their maximum which was 79. This reflected distribution was then skewed to the right and the square root was calculated. This transformation procedure reduced this measure to acceptable normality (statistic = .062, $df = 81$, $p = .200$). The new label for the transformed FIQ measure is transformed FIQ-T. FIQ-T scores increase as the original FIQ scores decrease. Therefore, a low positive transformed FIQ-T score and a high positive original FIQ score indicate high levels of functional impact.

Examination of the histogram for the Stressors Questionnaire indicated
positive skewness. The square root of the stress scores were taken to correct for this problem. The new label for the transformed Stressor measure is Stress-T.

After transformation, this measure was then found to be normally distributed (statistic = .083, df = 81, p = .200).

All other measures, namely the QOLP, QOLS, BDI-A, problem-focused coping and emotion-focused coping were accepted as coming from a normal distribution (see Table 6 for normality statistics).

(6.5) **Descriptive Analysis of Measures**

Table 7 provides a complete summary of means, standard deviations, and ranges of the measures used in this thesis. All descriptive statistics were based on 81 respondents except for the descriptive statistics and alpha levels of the original WOCQ scales as proposed by Folkman and Lazarus (1985), and the factor analysis of the WOCQ. These analyses were based on the 90 respondents who completed the questionnaire. This was done in order to maintain a respectable N : p ratio for the factor analysis.

**FM Functional Impact.**

The functional impact that FM had on the participants' lives, as indicated by the FIQ-T results (Burckhardt et al., 1991), was comparable to those scores reported in other studies on FM (Henriksson & Burckhardt, 1995; Burckhardt et al., 1997). The average FIQ-T score was 4.55 (SD = 1.36), and the average, raw untransformed FIQ score was 57.99 (SD = 12.39).
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Pages 72-75

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Table 9

Ways of Coping Questionnaire Scales (n = 90)

<table>
<thead>
<tr>
<th>Factor</th>
<th>M</th>
<th>SD</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Control</td>
<td>8.49</td>
<td>3.99</td>
<td>.67</td>
</tr>
<tr>
<td>Planful Problem-Solving</td>
<td>8.00</td>
<td>4.13</td>
<td>.79</td>
</tr>
<tr>
<td>Escape-Avoidance</td>
<td>7.99</td>
<td>4.68</td>
<td>.72</td>
</tr>
<tr>
<td>Seeking Social Support</td>
<td>7.92</td>
<td>4.21</td>
<td>.79</td>
</tr>
<tr>
<td>Positive Reappraisal</td>
<td>7.87</td>
<td>4.90</td>
<td>.81</td>
</tr>
<tr>
<td>Confrontive Coping</td>
<td>5.38</td>
<td>3.48</td>
<td>.69</td>
</tr>
<tr>
<td>Distancing</td>
<td>5.42</td>
<td>3.36</td>
<td>.68</td>
</tr>
<tr>
<td>Accepting Responsibility</td>
<td>2.64</td>
<td>2.18</td>
<td>.53</td>
</tr>
</tbody>
</table>
WOCQ due to the low internal consistencies and because it has been found that the factor structures of the WOCQ vary across different populations (Folkman & Lazarus, 1985; Folkman et al., 1986; Mishel & Sorenson, 1993; Wineman et al., 1994).

On the basis of Lazarus and Folkman's (1984) primary modes of coping, problem-focused coping, and emotion-focused coping, two factors were extracted in the factor analysis of the WOCQ. This approach of extracting two factors has been used in clinical medical populations, such as persons with cancer (Mishel and Sorenson, 1993) and multiple sclerosis and spinal cord injury (Wineman et al., 1994). Principal components analysis with orthogonal rotation (varimax) was used for this analysis. Questions having communalities of less than .3 were eliminated from the final factor analysis on the basis that they were not sufficiently interrelated with other items from the WOCQ. After the items with low communalities were deleted, the statistical computer program was then programmed to force an extraction of two factors. The final two factors consisted of 26 items out of the 66 items on the original questionnaire.

The subject-to-variable ratio for this analysis was 3.5:1. Stevens (1996) recommends a N:p ratio of 5:1; however, Arrindel and van der Ende (1985) reported that recommended N:p ratios in the literature are inconsistent. For this principal components analysis, a N:p ratio of 3.5:1 was used, as this ratio was deemed adequate for Mishel and Sorenson's (1993) two factor component analysis.
of the WOCQ for a clinical cancer sample. In addition, Guadagnoli and Velicer (1988) state that regardless of sample size, components with greater than three loadings of .60 or above in absolute value are reliable, a condition satisfied in this factor analysis. Table 10 presents the two factors, their alphas, and the items corresponding to each factor.

Eighteen questions had a standardized loading of more than .5 on the problem-focused coping factor. A local estimate of internal consistency for these 18 questions as measured by Cronbach's alpha was .91. Eight questions had a standardized loading of more than .4 on the emotion-focused coping factor. A local estimate of internal consistency for these eight questions as measured by Cronbach's alpha was .82. The problem-focused coping factor explained 29.9% of the total variance and the emotion-focused coping factor explained 14.3% of the variance, leading to a cumulative explanation of 44.2% of the variance in the responses of the WOCQ. The relatively low variance accounted for by these two factors indicate that those items which did not load on either factor did contribute to coping. Wineman et al. (1994) and Mishel and Sorenson (cited in Wineman et al., 1994) also reported low actual cumulative percent of variance accounted for by their two factors.

The two factors extracted, (i.e., problem-focused coping and emotion-focused coping), and their corresponding variables in this factor analysis, were comparable to those presented by Mishel and Sorenson (1993) who utilized a
Table 10

Factor Structure of the Ways of Coping Questionnaire for the FM Population (n = 90)

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Problem-Focused Coping (α = .91)</th>
<th>Emotion Focused Coping (α = .82)</th>
</tr>
</thead>
<tbody>
<tr>
<td>39.</td>
<td>Changed something so things would turn out all right.</td>
<td>.75</td>
</tr>
<tr>
<td>23.</td>
<td>Changed or grew as a person in a good way.</td>
<td>.74</td>
</tr>
<tr>
<td>30.</td>
<td>I came out of the experience better than when I went in.</td>
<td>.69</td>
</tr>
<tr>
<td>26.</td>
<td>I made a plan of action and followed it.</td>
<td>.69</td>
</tr>
<tr>
<td>52.</td>
<td>Came up with a couple of different solutions.</td>
<td>.68</td>
</tr>
<tr>
<td>19.</td>
<td>I told myself things that helped me feel better.</td>
<td>.65</td>
</tr>
<tr>
<td>56.</td>
<td>I changed something about myself.</td>
<td>.64</td>
</tr>
<tr>
<td>49.</td>
<td>I knew what had to be done, so I doubled my efforts to make things work.</td>
<td>.64</td>
</tr>
<tr>
<td>20.</td>
<td>I was inspired to do something creative.</td>
<td>.63</td>
</tr>
<tr>
<td>64.</td>
<td>I tried to see things from the other person’s point of view.</td>
<td>.61</td>
</tr>
<tr>
<td>63.</td>
<td>I thought about how a person I admire would handle this situation and used that as a model.</td>
<td>.61</td>
</tr>
<tr>
<td>34.</td>
<td>Took a big chance or did something very risky.</td>
<td>.60</td>
</tr>
<tr>
<td>38.</td>
<td>Rediscovered what is important in life.</td>
<td>.58</td>
</tr>
<tr>
<td>51.</td>
<td>I made a promise to myself that things would be different next time.</td>
<td>.58</td>
</tr>
<tr>
<td>35.</td>
<td>I tried not to act too hastily or follow my first hunch.</td>
<td>.54</td>
</tr>
<tr>
<td>15.</td>
<td>Looked for the silver lining, so to speak; tried to look on the bright side of things.</td>
<td>.52</td>
</tr>
<tr>
<td>36.</td>
<td>Found new faith.</td>
<td>.51</td>
</tr>
<tr>
<td>6.</td>
<td>I did something which I didn’t think would work, but at least I was doing something.</td>
<td>.50</td>
</tr>
<tr>
<td>59.</td>
<td>Had fantasies or wished about how things might turn out.</td>
<td>.78</td>
</tr>
<tr>
<td>58.</td>
<td>Wished that the situation would go away or somehow be over with.</td>
<td>.77</td>
</tr>
<tr>
<td>57.</td>
<td>I daydreamed or imagined a better time or place than the one I was in.</td>
<td>.75</td>
</tr>
<tr>
<td>11.</td>
<td>Hoped a miracle would happen.</td>
<td>.68</td>
</tr>
<tr>
<td>55.</td>
<td>Wished that I could change what had happened or how I felt.</td>
<td>.68</td>
</tr>
<tr>
<td>60.</td>
<td>I prayed.</td>
<td>.65</td>
</tr>
<tr>
<td>61.</td>
<td>I prepared myself for the worst.</td>
<td>.46</td>
</tr>
<tr>
<td>37.</td>
<td>Maintained my pride and kept a stiff upper lip.</td>
<td>.41</td>
</tr>
</tbody>
</table>

(All loadings below .30 were suppressed)
similar two-factor model with a clinical cancer population.

Stress Appraisal.

Stress appraisal, as measured by the WOCQ (Folkman and Lazarus, 1985) indicated that 27% of the sample perceived their stress as changeable, 20% felt they needed more information on the situation before they could act, 46% stated they had to accept the problem, and 7% felt they had to hold themselves back from acting.

Games-Howell post-hoc analysis was conducted to determine the relationship between the use of problem-focused coping and the amount of perceived control one felt they had over their stress (see Table 11). This specific procedure was done because there were unequal n's between the groups, and the problem-focused coping factor had unequal variances (Levene statistic = 2.810, \( p = .044 \)). Results indicated that there were no differences between the groups (\( F(3,87) = 1.37, p = .258 \)).

Dunnett T3 post-hoc analysis was conducted to determine the relationship between the use of emotion-focused coping factor and the amount of perceived control one felt they had over their stress (see Table 12). This procedure was done due to unequal n's between the groups and because the emotion-focused coping factor had equal variances (Levene statistic = 1.320, \( p = .273 \)). Results indicate that there were significant differences between the groups (\( F(3,87) = 6.14, p = .001 \)). Those who perceived they could do something about their stress used
Table 11

**Differences in Problem-Focused Coping due to Stress Appraisal**

<table>
<thead>
<tr>
<th>Category</th>
<th>Mean Difference</th>
<th>SD</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Must Accept Situation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Could do Something About Situation</td>
<td>.1680</td>
<td>.156</td>
<td>.633</td>
</tr>
<tr>
<td>Needed More Information</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Could do Something About Situation</td>
<td>.3076</td>
<td>.188</td>
<td>.168</td>
</tr>
<tr>
<td>Had to Hold Back</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Needed More Information</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Must Accept Situation</td>
<td>-.1399</td>
<td>.272</td>
<td>.863</td>
</tr>
<tr>
<td>Needed More Information</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Must Accept Situation</td>
<td>.1396</td>
<td>.167</td>
<td>.820</td>
</tr>
<tr>
<td>Had to Hold Back</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Needed More Information</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Had to Hold Back</td>
<td>-.3080</td>
<td>.258</td>
<td>.418</td>
</tr>
<tr>
<td></td>
<td>-.4475</td>
<td>.279</td>
<td>.161</td>
</tr>
</tbody>
</table>
Table 12

**Differences in Emotion-Focused Coping due to Stress Appraisal**

<table>
<thead>
<tr>
<th>Category</th>
<th>Mean Difference</th>
<th>SD</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Could do Something About Situation</td>
<td>.7459</td>
<td>.176</td>
<td>.000</td>
</tr>
<tr>
<td>Must Accept Situation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Could do Something About Situation</td>
<td>-.5594</td>
<td>.213</td>
<td>.028</td>
</tr>
<tr>
<td>Needed More Information</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Could do Something About Situation</td>
<td>-.6775</td>
<td>.309</td>
<td>.349</td>
</tr>
<tr>
<td>Had to Hold Back</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Must Accept Situation</td>
<td>.1865</td>
<td>.189</td>
<td>.898</td>
</tr>
<tr>
<td>Needed More Information</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Must Accept Situation</td>
<td>.0684</td>
<td>.292</td>
<td>1.000</td>
</tr>
<tr>
<td>Had to Hold Back</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Needed More Information</td>
<td>-.1181</td>
<td>.316</td>
<td>.999</td>
</tr>
<tr>
<td>Had to Hold Back</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
emotion-focused coping strategies less than those who perceived they must accept their situation. In addition, those who perceived they could do something about their stress used fewer emotion-focused coping strategies than those who needed more information before they could act upon their stress.

Quality of Life.

Quality of life was measured using two instruments, the QOLP (CHP, 1996) and the QOLS (Flanagan, 1978). The majority of this sample reported a borderline quality of life, as measured by the QOLP and the QOLS. Table 13 reports the alphas, means, and standard means and standard deviations for the QOLP three domains and nine sub-domains, and Table 14 reports the means and standard deviations for the QOLS domains.

(6.6) Correlational Analysis of the Major Study Variables

Table 15 presents the correlation matrix (Pearson r) between the major variables under investigation in this study.

Criterion 1: QOLS.

There were moderate, significant and negative correlations between the QOLS and depression, stress, and emotion-focused coping at the p = .01 level. Thus, higher levels of depression and perceived stress and the use of emotion-focused coping to manage stress are associated with a lower quality of life.

There were three measures which were positively correlated with the QOLS at the p = .05 level. These were employment status, income, and FIQ-T. Having a
Table 13

QOLP Alphas, Means and Standard Deviations (N = 81)

<table>
<thead>
<tr>
<th>Quality of Life Domains (α for QOLP Scores)</th>
<th>QOLP</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Being Items (.97)</td>
<td></td>
<td>.11</td>
<td>.47</td>
</tr>
<tr>
<td>Physical Being (.99)</td>
<td></td>
<td>-.30</td>
<td>.03</td>
</tr>
<tr>
<td>Psychological Being (.99)</td>
<td></td>
<td>-.12</td>
<td>.03</td>
</tr>
<tr>
<td>Spiritual Being (.99)</td>
<td></td>
<td>.74</td>
<td>.05</td>
</tr>
<tr>
<td>Belonging Items (.93)</td>
<td></td>
<td>1.74</td>
<td>1.08</td>
</tr>
<tr>
<td>Physical Belonging (.98)</td>
<td></td>
<td>1.24</td>
<td>.15</td>
</tr>
<tr>
<td>Social Belonging (.98)</td>
<td></td>
<td>.82</td>
<td>.12</td>
</tr>
<tr>
<td>Community Belonging (.99)</td>
<td></td>
<td>.24</td>
<td>.03</td>
</tr>
<tr>
<td>Becoming Items (.97)</td>
<td></td>
<td>.14</td>
<td>.03</td>
</tr>
<tr>
<td>Practical Becoming (.99)</td>
<td></td>
<td>.14</td>
<td>.03</td>
</tr>
<tr>
<td>Leisure Becoming (.99)</td>
<td></td>
<td>.14</td>
<td>.03</td>
</tr>
<tr>
<td>Growth Becoming (.99)</td>
<td></td>
<td>.14</td>
<td>.02</td>
</tr>
<tr>
<td>All Items (.98)</td>
<td></td>
<td>.34</td>
<td>.76</td>
</tr>
</tbody>
</table>
Table 14

**QOLS Means and Standard Deviations (N = 81)**

<table>
<thead>
<tr>
<th>Quality of Life Domains</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material Comforts</td>
<td>4.27</td>
<td>1.43</td>
</tr>
<tr>
<td>Health</td>
<td>2.57</td>
<td>1.11</td>
</tr>
<tr>
<td>Relationships</td>
<td>4.49</td>
<td>1.26</td>
</tr>
<tr>
<td>Having and Rearing Children</td>
<td>5.08</td>
<td>1.48</td>
</tr>
<tr>
<td>Relationships with Spouse</td>
<td>4.89</td>
<td>1.57</td>
</tr>
<tr>
<td>Close Friends</td>
<td>5.28</td>
<td>1.22</td>
</tr>
<tr>
<td>Helping Others</td>
<td>4.75</td>
<td>1.47</td>
</tr>
<tr>
<td>Community Participation</td>
<td>3.83</td>
<td>1.53</td>
</tr>
<tr>
<td>Learning</td>
<td>4.10</td>
<td>1.68</td>
</tr>
<tr>
<td>Understanding Yourself</td>
<td>4.91</td>
<td>1.30</td>
</tr>
<tr>
<td>Work</td>
<td>3.48</td>
<td>1.44</td>
</tr>
<tr>
<td>Expressing Yourself Creatively</td>
<td>4.04</td>
<td>1.30</td>
</tr>
<tr>
<td>Socializing</td>
<td>3.90</td>
<td>1.31</td>
</tr>
<tr>
<td>Reading/Entertainment</td>
<td>4.92</td>
<td>1.17</td>
</tr>
<tr>
<td>Participating in Recreation</td>
<td>3.13</td>
<td>1.38</td>
</tr>
<tr>
<td>Independence</td>
<td>4.08</td>
<td>1.35</td>
</tr>
<tr>
<td><strong>OVERALL QOLS SCORE</strong></td>
<td>67.78</td>
<td>13.35</td>
</tr>
<tr>
<td>Measure</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>1. QOLS</td>
<td>1.00</td>
<td>.870**</td>
</tr>
<tr>
<td>2. QOLP</td>
<td>1.00</td>
<td>.178</td>
</tr>
<tr>
<td>3. Income</td>
<td>1.00</td>
<td>.097</td>
</tr>
<tr>
<td>4. Age</td>
<td>1.00</td>
<td>-.146</td>
</tr>
<tr>
<td>5. Employment Status</td>
<td>1.00</td>
<td>.004</td>
</tr>
<tr>
<td>6. Marital Status</td>
<td>1.00</td>
<td>-.048</td>
</tr>
<tr>
<td>7. Education</td>
<td>1.00</td>
<td>-.266*</td>
</tr>
<tr>
<td>8. BDI-A</td>
<td>1.00</td>
<td>-.513**</td>
</tr>
<tr>
<td>9. FIQ-T</td>
<td>1.00</td>
<td>.435**</td>
</tr>
<tr>
<td>10. Stress-T</td>
<td>1.00</td>
<td>.017</td>
</tr>
<tr>
<td>11. Problem-Focused Coping</td>
<td>1.00</td>
<td>.270*</td>
</tr>
<tr>
<td>12. Emotion-Focused Coping</td>
<td>1.00</td>
<td></td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.05 level (2-tailed)
** Correlation is significant at the 0.01 level (2-tailed)
job and a high income were associated with a better quality of life, whereas a high level of functional impact by FM was associated with a poorer quality of life. There were no significant correlations between the QOLS and age, marital status, education, and problem-focused coping factors.

**Criterion 2: QOLP.**

As with the QOLS criterion, there were moderate, significant, negative correlations at the $p = .01$ level between the QOLP and depression, stress, and emotion-focused coping. Again, higher levels of depression and perceived amount of stress, and the use of emotion-focused coping were associated with lower quality of life scores.

There were two measures which correlated positively with the QOLP. These were problem-focused coping and the FIQ-T. Using problem-focused coping methods to manage stress increased one's quality of life, and high levels of functional impairment caused by FM decreased one's quality of life.

There were no significant correlations between any of the socio-demographic variables and the QOLP.

**Intercorrelations Between Variables.**

There were several significant correlations between the major study variables. First, the two criterion factors, QOLS and the QOLP were highly correlated. This strong correlation between the two quality of life measures was expected and indicates that both measures are related to the same concept.
Significant, positive correlations were discovered between income and marital status, employment and education, depression and emotion-focused coping, stress and depression, stress and FIQ-T, and emotion-focused coping and problem-focused coping. Significant, negative correlations were noted between income and depression, income and emotion-focused coping, education and depression, depression and FIQ-T, and FIQ-T and emotion-focused coping.

(6.7) **Univariate Regression Analysis Between the Quality of Life Scales and Independent Variables**

Table 16 presents the betas, standard errors, *t*-statistics and *p*-values between the independent and criterion variables. Only those independent variables with a *p* level of <.05 were considered significant.

**Criterion 1: QOLS:** Age, marital status, education, and problem-focused coping were not significantly related to the QOLS score. However, there was a significant positive relationship between the QOLS and income, employment status, and FIQ-T. There was also a significant negative relationship between one's level of depression, stress, and emotion-focused coping and the QOLS score.

**Criterion 2: QOLP.**

Income, age, employment status, age, marital status, and education were not significantly related to the QOLP score. There were significant positive relationships between the FIQ-T and problem-focused coping and the QOLP. There were significant negative relationships between the QOLP and depression
Table 16

Univariate Relationships Between the Quality of Life Scales and the Independent Variables (N = 81)

<table>
<thead>
<tr>
<th>Variables</th>
<th>QOLS</th>
<th></th>
<th>QOLP</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>β</td>
<td>SE β</td>
<td>t</td>
<td>p</td>
</tr>
<tr>
<td>Income</td>
<td>.228</td>
<td>.10</td>
<td>2.078</td>
<td>.041</td>
</tr>
<tr>
<td>Age</td>
<td>-.075</td>
<td>.11</td>
<td>-.670</td>
<td>.505</td>
</tr>
<tr>
<td>Employment Status</td>
<td>.270</td>
<td>.10</td>
<td>2.496</td>
<td>.000</td>
</tr>
<tr>
<td>Marital Status</td>
<td>.115</td>
<td>.11</td>
<td>1.029</td>
<td>.307</td>
</tr>
<tr>
<td>Education</td>
<td>.173</td>
<td>.11</td>
<td>.643</td>
<td>.520</td>
</tr>
<tr>
<td>BDI-A</td>
<td>-.667</td>
<td>.08</td>
<td>-7.964</td>
<td>.000</td>
</tr>
<tr>
<td>FIQ-T</td>
<td>.517</td>
<td>.09</td>
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<td>-3.440</td>
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level and emotion-focused coping.

(6.8) **Selection of Model Variables**

Theoretical considerations and forward stepwise regressions were the two methods used in selecting the independent variables for the hierarchical regression model. This thesis is based on two theoretical foundations, Lazarus and Folkman's (1984) stress, appraisal and coping theory and the CHP approach to quality of life. These two theories and an extensive literature review in these areas assisted in the selection of independent variables which were judged to influence quality of life. A general model question was then postulated: To what extent is quality of life a function of socio-demographics, health-related factors, stress and coping?

Stevens (1996) states that those variables which have predicted the dependent variable in previous research should be entered in the regression equation first (as control variables), in order to determine if any of the other predictors "add anything significant to predicting y above and beyond the proven predictors" (p. 103). With this knowledge, the socio-demographic variables were entered in step one because earlier studies demonstrated that socio-demographic factors influence health, stress, coping, and perceived quality of life (Flanagan, 1978; Lazarus & Folkman, 1984; Romney, Brown, & Fry, 1994).

Step two, which consisted of the health-related factors, was entered to determine their incremental value above and beyond the socio-demographic
facts. Mental and physical health factors have the potential to influence types and levels of stress, which in turn influences coping. In addition, health factors have also been found to be correlated with quality of life in studies of persons with FM and other clinical medical samples (Padilla, Mishel & Grant, 1992; Burckhardt et al., 1997).

Step three contained the stress variable, and step four contained problem-focused coping and emotion-focused coping. The incremental values that these factors have over the socio-demographic and health-related factors in determining quality of life in this population has not been determined. However, these psychological factors have been demonstrated to be associated with quality of life and coincide with the theoretical premises of this thesis (Lazarus & Folkman, 1984; Folkman et al., 1986; Renwick & Friedland, 1996; Renwick & Brown, 1996).

Forward stepwise regressions were conducted to prevent problems related to multicollinearity, and to maintain a respectable n/k ratio for the hierarchical regression. This approach was also used because some of the socio-demographic and health-related variables were correlated with each other, and there was a small sample size. A minimum of six to 10 cases per variable is recommended (Neter, Wasserman & Kutner, 1990). Only those socio-demographic and health-related variables with a p-value of .20 or less in the univariate regression analysis were entered to the forward stepwise regressions. A p-value of .05 or less to enter was
used in the forward stepwise method.

For the QOLS, the two socio-demographic variables entered were employment status and income. Income was found to be the only significant socio-demographic variable ($R^2 = .073, F(1,79) = 6.23, p < .015$), and was entered into step one. Both health-related variables, depression (as measured by the BDI-A) and FM impact (as indicated by the FIQ-T) had significantly predicted the QOLS score ($R^2 = .529, F(3,77) = 28.82, p < .0000$) and were entered into step two.

For the QOLP, the only significant socio-demographic variable in the univariate analysis was employment status and this variable was not entered into the hierarchical regression model. The two health-related variables, the BDI-A and FIQ-T, were significantly associated with the QOLP score ($R^2 = .443, F(2,78) = 30.99, p < .0000$) and were entered into step one.

Using the two methods of model selection noted previously, the following six variables were included in the hierarchical regression model for the QOLS: employment status (working or not), BDI-A, FIQ-T, Stress-T, problem-focused coping, and emotion-focused coping. For the hierarchical regression model for the QOLP, the following five variables were selected: BDI-A, FIQ-T, Stress-T, problem-focused coping and emotion-focused coping.

These two models may or may not explain the most variance as measured by $R^2$. Indeed it is possible that there are several other potential models which are
as good as, or even better than, the ones presented. However, such models may not be relevant to the theories underpinning this study.

(6.9) **Hierarchical Regression Analyses**

Hierarchical regression analyses were conducted to evaluate two models with quality of life as the dependent variable, as measured by the QOLS and the QOLP, respectively. The purpose of this regression analysis was to determine the extent to which quality of life is a function of stress, coping, socio-demographic, and health-related factors. The QOLS model included six variables, while the QOLP model consisted of five variables.

**Model A: QOLS**

The results for this model are presented in Table 17. The employment status variable alone resulted in a significant model ($F(1, 79) = 6.23, p = .015$). This block explained 7% of the variance in the QOLS score. The addition of the health factors, depression, and FM impact, in the second block resulted in a significant improvement in the fit of the model ($\Delta F(2, 77) = 37.26, p < .01$). Both level of depression ($\beta = - .518, p = .000$) and FM impact ($\beta = .246, p = .009$) were significant variables. Together with block one, this block explained almost 53% of the variance in the QOLS score. The addition of the perceived stress level variable ($\beta = -.144, p = .114$) in the third block did not result in a significant improvement of the fit of the model over block two. The first three blocks explained 54% of the variance in the QOLS. The addition of the problem-focused
Table 17
Hierarchical Regression Analysis for the QOLS (N = 81)

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<tr>
<th>Variable</th>
<th>Model 1</th>
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<th>Model 2</th>
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<td>.000</td>
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*p < .05; ** p < .01
coping (beta = .127, p = .132) and emotion-focused coping (beta = .005, p = .962) variables in the fourth block also did not result in a significant improvement of the fit of the model over block three. In total, the four blocks explained 56% of the variance in the QOLS. the final model for the QOLS included depression (beta = -.469, SE β = .11, p = .000), employment status (beta = .220, SE β = .09, p = .007), and FIQ-T (beta = .207, SE β = .10, p = .037). Examination of the VIF scores demonstrated no multicollinearity in this model, as all VIF scores were below 2.5 (minimum = 1.046, maximum = 1.868).

Model B: QOLP.

The results for this model are presented in Table 18. The health-related factors, depression and FM impact in the first block resulted in a significant model (F (2,78) = 30.99, p = .0000). Both level of depression (beta = -.496, p = .000) and FIQ-T (beta = .256, p = .011) were significant and this block explained 44% of the variance in the QOLP score. The addition of the perceived stress level variable (beta = -.122, p = .211) in the second block did not result in a significant improvement of the fit of the model over block one (ΔF (1,77) = 1.59, p > .05). The first two blocks explained 45% of the variance in the QOLP. The addition of the coping variables in the third block did result in a significant improvement of the fit of the model over block two (ΔF (2,75) = 4.07, p < .025). However, problem-focused coping (beta = .237, p = .009) was the only significant variable in this block. Together, all three blocks explained almost 51% of the variance in the
Table 18

Hierarchical Regression Analysis for the QOLP (N = 81)

<table>
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<th>Variable</th>
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<tr>
<td>( F )</td>
<td>30.99**</td>
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<td>21.35**</td>
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<td>15.46**</td>
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<td>( \Delta F )</td>
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<td>4.07*</td>
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* \( p < .05 \); ** \( p < .01 \)
QOLP score. The final model for the QOLP included depression (beta = -.434, SE β = .11, p = .000), problem-focused coping (beta = .237, SE β = .09, p = .0086), and FIQ-T (beta = .216, SE β = .10, p = .038). Examination of the VIF scores demonstrated no multicollinearity in this model (minimum VIF = 1.181, maximum VIF = 1.960).
CHAPTER SEVEN
Discussion and Conclusion

(7.1) **Overall Quality of Life**

The perceived overall quality of life for the study participants, as measured by the QOLP and QOLS, was marginally positive. Similar results, using the QOLS, were also found by Henriksson and Burckhardt (1995), Neumann and Buskila (1997), and Burckhardt et al. (1997). These results indicate a reasonable quality of life can be obtained even when living with a chronic condition such as FM. This finding reiterates one important notion about quality of life: People with health problems should not necessarily be perceived as having a lower quality of life when compared to individuals without health problems (Burckhardt et al., 1989). Quality of life is not solely dependent on health status, but on several factors such as the values and standards that one holds, participation and contribution to society, and the ability to learn and grow as an individual (Renwick & Brown, 1996). This aspect of the CHP model of quality of life was supported in this study in the QOLP hierarchical regression analysis, where quality of life was influenced by the functional impairment, depression, and problem-focused coping variables. In addition, a comparison of importance domain scores for the QOLP in this study and the QOLP - Seniors Version (Raphael et al., 1995) and the QOLP - Adolescent Version (Raphael et al., 1996) demonstrate similar scores for all the domains of the QOLP; therefore, demonstrating the importance of these areas to
this and other samples.

These findings do not dismiss the fact that an illness and/or disability can influence one's quality of life, because health factors, in this study, were the primary predictors of quality of life. It is evident that an illness/disability may be viewed and experienced as a stressful event which diminishes one's quality of life. Participants in this study coped with numerous physical, mental, and social stressors. Consequently, they may have not been able to participate in those activities which could help them maintain a higher life quality than currently reported.

How much an illness/disability influences the quality of life one experiences depends on the areas of life interrupted and the extent of the disruption. If certain aspects of an illness or disability negatively influence the enjoyment of daily activities and goals and the ability to pursue social, occupational, spiritual and self-growth opportunities, then quality of life is likely to be negatively affected. The experience of chronic pain, depression, headache, fatigue, and unemployment obviously detracted from experienced quality of life in this sample (see Table 17).

In addition to the extent of disruption, it may also be noted that a lower quality of life may also be due to the perception of having a disability. Since a majority of the FM population is between the ages of 35 and 55, developing this chronic condition in the prime of one's life may seem unjust. Younger individuals
may not yet have the life experience required to cope with their condition. Their goals, aspirations, and expected life cycle have been interrupted and coming to terms with their condition may be more difficult than those older subjects. These points build upon Lazarus and Folkman's (1984) observation that having an event occur too early in life (e.g., chronic illness) can deprive individuals of both adequate support, and the chance to prepare for a new role (i.e., living with a chronic illness).

However, it must be mentioned that health-related problems do not necessarily have to be perceived and experienced as negative events. As Lipowski (1971) pointed out, illness may also be viewed as a positive event, which provides an opportunity for a person to search for new meaning in life and, in doing so, to maintain a reasonable quality of life. This current study did not focus on this issue, but it is an interesting area for future research. Undoubtedly, it takes time and experience with the illness and adaptation to the illness to attain, or regain, good quality of life (Mechanic, 1977).

(7.2) **Specific Domains of Quality of Life**

Quality of life scores on the physical being domain for the QOLP and the health item for the QOLS were the lowest scores of all the domains measured (see Tables 13 and 14). This result was not unexpected as it was demonstrated in this study, and in the literature review, that FM has wide ranging effects and impacts the physical health of these individuals. Other areas in which poorer quality of life
was demonstrated on the QOLP included psychological being (i.e., mental health), practical becoming (i.e., participation in daily activities), leisure becoming (i.e., activities done for enjoyment), and growth becoming (i.e., activities done to improve oneself and adapt to change). Similar results were also found for the QOLS where lower scores were associated with participation in recreation, community participation, socializing, and work. These areas of lower quality of life, using the QOLS, were also found by Henriksson et al. (1992), Neumann and Buskila (1997) and Burckhardt et al. (1997).

In this study, participants' results on the measures of physical and mental health were consistent with limitations in physical ability and mental health problems as documented in the FM literature (Buckelew et al., 1994; Granges et al., 1994; Yunus, 1994; Goldenberg et al., 1995; Wolfe, 1995). Participants reported high levels of pain, fatigue, morning tiredness, stiffness and few days of feeling good, and one quarter of the sample was considered clinically depressed by the BDI-A. Thus, it was not surprising to find that the physical and psychological health factors accounted for the highest variance in both quality of life measures (see Tables 17 and 18).

Tables 13 and 14 indicate the domains of quality of life which were noticeably higher than other domains. Participants in this study noted higher levels of quality of life in the following domains on the QOLP: spiritual being (i.e., beliefs and values), physical belonging (i.e., where the individual lives and
spends time), and social belonging (i.e., the people with whom they spend time). Again, similar results were also found on the QOLS where higher scores were noted on the items related to close friends, having children, helping others, general relationships, relationship with spouse, understanding themselves, and reading and entertainment.

According to the CHP model of quality of life, social bonds are an important aspect of quality of life. There have been a few studies investigating the area of social support for people with FM. Bolwijn et al. (1994) discovered that the social networks for people with FM consisted mainly of health professionals, one or two family members, very few intimate friends, and contacts with others that reflected courtesy rather than intimacy. Henriksson (1995a) also reported that people with FM found that others in their lives displayed distrust and doubt about the validity of their condition, and had a tendency to distance themselves. However, there were family and friends who did provide support and empathy and displayed a willingness to learn about the condition. Henriksson concluded that, overall, there is a decrease in the number of close friends and social contacts in those with FM.

Although such conclusions cannot be interpreted from the data collected in this study, social support is a key factor in health research and needs to be examined more thoroughly for this population. Other research (Thoits, 1982; Affleck, Pfeiffer, Tennen & Fifield, 1988; Doeglas, Surrmeijer, Krol, Sanderman,
van Rijwik, & van Leeuwen, 1994) has demonstrated that adequate social support can have positive effects on physical and psychological health in populations with health problems.

Investigation into other positive aspects of quality of life, as indicated by this sample, (e.g., spiritual being and physical belonging) has not been conducted for this population. Most health care research tends to focus on the areas in which improvement and treatment is needed most, and to neglect those areas which are satisfactory. Helping those with an illness maintain those areas which are satisfactory needs to be a focus in any treatment model, as these areas are key to sustaining a reasonable life quality.

Taken together, those domains in which quality of life was low and those domains in which quality of life was high, resulted in a marginal overall quality of life. Thus, proper investigation into interventions of those specific domains which are experienced as poor is one step towards helping this population attain a higher quality of life. Longitudinal research needs to examine which quality of life domains are more highly influenced by the consequences of FM, and which aspects of quality of life continue to be experienced at a satisfactory level over time and which domains are not.

(7.3) Socio-demographics and Quality of Life

A variety of socio-demographic data was collected in this study; however, only a few variables were associated with quality of life at a p level of .05 or less.
In the correlation matrix, income and employment status were positively related to the QOLS. In this study of women with FM, it is likely that the experience of financial distress makes it difficult to obtain material goods and services which are basic necessities and to seek treatments which are not covered by insurance or the provincial government health insurance. These goods, services, and treatments may be needed to maintain or improve quality of life.

Participating in paid employment, for most people, provides a sense of self-worth. Work is not only an activity where one can make money, but is also a place which provides the opportunity for social interaction with peers. Clearly, being employed helps people maintain a reasonable quality of life. In this study's sample, the unemployment rate was extremely high. Seventy-six percent of the participants were unemployed, although the same percentage of participants had education levels college level and above. In addition, 95% of the participants felt that the symptoms of their FM negatively impacted their ability to work. This means that even those who did paid work perceived that their FM negatively influenced their ability to work. Individuals with FM require effective interventions in order to manage, or eliminate, their symptoms which prevent them from obtaining and keeping paid employment.

It was discovered in this study that only certain socio-demographic factors were related to quality of life. For instance, why was income not associated with quality of life as measured by the QOLP, when other studies, such as Renwick and
Friedland's (1996) demonstrate its importance to quality of life in their chronically ill population? Two reasons are postulated. First, the specific questions in any quality of life measure may tend to focus on certain domains (e.g., income and material goods), whereas, another measure may focus more on values and health. Second, the questions included in any measure rely on the theoretical basis of the measure. The CHP's quality of life model postulates that "the most direct effects on the individual and his/her quality of life will occur through the person's interactions with his/her environment" (Raphael, Brown, Renwick & Rootman, 1994, p. 42). Thus, although socio-demographic factors may influence quality of life, they are not primary predictors of overall quality of life. This point was illustrated in the QOLP hierarchical regression model, where no socio-demographic variable was entered. However, a person's interaction with the environment via problem-focused coping was associated with quality of life.

(7.4) Physical and Mental Health and Quality of Life

Health status was a major variable under investigation in this study, as FM has significant, multiple health consequences. Both the FIQ-T and the BDI-A were significantly associated with both measures of quality of life (e.g., the QOLP and QOLS), although depression had the strongest correlation with quality of life and was the variable of greatest importance in the hierarchical regression analyses (see Tables 17 and 18). Burckhardt et al. (1997) also demonstrated that depression was the most significant independent variable, not only with respect to quality of
life, but also all of their pre-test variables which included pain, fatigue, poor sleep and number of tender points. Depression, in this study, was strongly correlated with lower income, lower FIQ-T scores (which indicated high functional impact), and higher stress scores, and with the use of emotion-focused coping.

It is evident from the literature that individuals experiencing depression perceive situations concerning their quality of life differently than those who are not depressed (Folkman & Lazarus, 1986; Fallowfield, 1990). As Folkman and Lazarus (1986) discovered, individuals with high depressive symptomatology were "much more vulnerable to threat in varied domains, including self-esteem, finances, their own physical health, and the well-being of loved ones" (p. 111). In addition to perceiving events differently and experiencing more stress, people with depression also seem to cope differently with their stress. Such individuals tend to use more emotion-focused coping strategies and tend to be less successful in coping with their stressors (for review, see Aldwin, 1994). This relationship between the use of emotion-focused coping and depression was consistent with Folkman and Lazarus' (1980) research. Clearly, depression needs to be correctly and expediently diagnosed and treated in this population.

The results of the correlational analysis support the previous research findings and hypotheses that individuals who are experiencing depression indicate higher functional impairment and levels of stress, use more emotion-focused coping, and report lower quality of life scores. In addition, those with higher
functional impairments reported higher levels of stress, use more emotion-focused coping and also report lower quality of life scores.

The functional impact that FM had on the participants' lives in this study was moderate, and these findings comparable to results in other studies (Henriksson, 1995a, 1995b, 1995c; Henriksson & Burckhardt, 1995, Neumann & Buskila, 1997; Burckhardt et al., 1997). As previously discussed in the literature review, but not investigated in this study, the physical symptoms of FM can prevent participation in many activities which are needed to maintain quality of life (Henriksson, 1995a, 1995b). Some findings of this study, such as low scores for participation in recreation, correspond to Henriksson and Burckhardt's findings (1995). Physical function needs to be restored in these individuals, not only to benefit their symptoms, but to regain functioning in those areas which impact quality of life.

Physical and mental health problems are well-documented symptoms of FM, and it is in these areas where most of the research on treatment has been done. Specifically, most recommended treatment regimens involve exercise and low doses of antidepressants to combat the affects of FM (see Table 3). However, how does treatment affect overall quality of life? Little is known, but Burckhardt et al. (1997) did find a significant improvement in the FIQ, BDI-A, and QOLS scores, after a six-month multi-dimensional treatment program. Future presentation of pre- and post-test scores on the specific questions of the QOLS
would be valuable, as researchers and clinicians would be able to note those areas of greatest need and improvement.

(7.5) Stress, Coping and Quality of Life

Stress level was significantly correlated with both quality of life measures, depression, and FM impact in the correlational matrix, and significantly associated with the QOLS and QOLP in the univariate analyses. Those with higher perceived stress levels did report lower quality of life scores, therefore, supporting hypothesis number three. However, stress was not significantly associated with either quality of life model in the hierarchical regression analyses. This could be because of the significant correlations between depression, FM impact, and stress. Once the two health-related variables were entered into the models, the effect of stress was no longer significant.

Stress has not been properly investigated for those with FM. However, when stress is investigated for those with chronic illness, there tends to be the assumption that health problems are the most prominent stressors (Taylor & Aspinwall, 1990). In contrast, this study revealed that finances constituted the most salient stressor, followed by health and work, illnesses of others, relationships with family members, primary relationships and the death's of others. However, all participants did report that their health was a source of some level of stress. Therefore, researchers need to investigate this factor more thoroughly in order to better understand its sources and inter-relationships with other factors for
individuals with FM.

Although the stress level for this sample was only moderate, the theory of additive stress by Seta et al. (1991) states that the experience of multiple stressors will have an additive negative effect on an individual's physical and psychological well-being. This theory allows the presumption that health factors, stress, and coping with stress have interdependent relationships with each other. Health may be a stressor which influences the development of other stressors, such as financial distress. The more stress experienced, and the greater the inability to cope with the stress effectively, the more potential negative health consequences, and the cycle continues. Breaking the cycle with interventions in all areas (i.e., health and cognitive processes), are needed.

Emotion-focused coping did not contribute to quality of life in either the QOLS or QOLP model (see Tables 17 & 18), although emotion-focused coping was negatively related to the QOLS and the QOLP in the univariate and correlational analyses. This lack of significance may be due to the fact that emotion-focused coping was significantly correlated with the health-related variables, and once the two health-related variables were entered into the models, the effect of emotion-focused coping was no longer significant.

Quality of life in the QOLP model was positively associated with problem-focused coping (see Table 18); however, this relationship was not found in the QOLS model (see Table 17). The finding in the QOLP model that the use of
problem-focused coping in managing stress results in more positive outcomes is consistent with Lazarus and Folkman's (1984) theory. This result also demonstrates the consistency of Lazarus and Folkman's (1984) theory of stress, appraisal, and coping with the CHP's model of quality of life: Coping with a specific event influences the person-environment relationship, and this person-environment relationship, which is at the centre of the CHP model, in turn gives rise to experienced quality of life. The probable reason why problem-focused coping was not associated with the QOLS model reflects the fact that different quality of life measures may be "more strongly influenced by different types and combinations of ....coping strategies" (Renwick & Friedland, 1996).

The hypothesis that the use of emotion-focused coping would result in lower quality of life scores was supported in both quality of life measures. In addition, the hypothesis that the use of problem-focused coping to manage stress would result in higher quality of life scores was supported in the QOLP, but not in the QOLS.

The correlation analysis revealed that emotioned-focused and problem-focused coping were moderately correlated (see Table 15). However, Folkman and Lazarus (1980) state that "because both scales measure processes believed to be used together in normal coping, a relationship between the two [factors] was expected" (p. 226). There was support for the two factors because there was a high standardized loading of the items in each of the two factors.
An analysis of the use of problem-focused coping strategies and emotion-focused coping strategies, for this sample, revealed that both methods of coping were used in managing stress. However, post-hoc analysis revealed no differences in problem-focused coping due to stress appraisal. This finding is inconsistent with Lazarus and Folkman's theory, and does not support the hypothesis that an individual will tend to use more problem-focused coping strategies when managing stress that is perceived as controllable. The theory of stress, appraisal, and coping stipulates that those who perceived they could do something about their situation, or needed more information before they could act, use more problem-focused coping.

Post-hoc analysis of the emotion-focused coping factor and stress appraisal revealed that there were differences between two groups: (1) Those who believed they could do something about their stress and those who believed they must accept their stress; and, (2) between those who believed they could do something about their stress and those who needed more information before coping with their stressor. Only one result was consistent with Folkman and Lazarus' (1980) findings. This was the finding that the relationship between the use of emotion-focused coping and those who believed they must accept their stress. According to Folkman and Lazarus (1980) those situations that have to be accepted result in a higher use of emotion-focused coping, and therefore, the hypothesis that the perception of stress as uncontrollable would result in the use of more emotion-
focused coping strategies was only partially justified. Clearly, the results of the current study were not completely consistent with this theory of stress, appraisal, and coping. It seems from the results of this study that people with FM, in this sample, are not coping effectively with their stress. Further research into this area needs to be conducted to evaluate whether the coping strategies being used in this population to manage stress are effective, and whether this theory of stress, appraisal, and coping is appropriate for this population. Data needs to be gathered from a larger sample in order to examine these issues.

The focus on coping by people with FM has revolved around coping with pain (e.g., Nicassio et al., 1995; Burckhardt et al., 1997); however, it was demonstrated in the current study that health was not identified by participants as the primary stressor in this sample (see Table 8). Although, pain was also not included in the list of stressors offered to participants, they could have specifically identified pain as their major stressor on the Stressors questionnaire. Thus, a key finding in this study was the fact that women with FM report other stressors beyond their health.

It was found that those individuals who did not fully complete the questionnaire packages perceived less stress than those who completed their packages. A further analysis of this finding examined only those eight respondents who did not report their income versus the 81 respondents. This analysis revealed that these non-responders also perceived less stress and they also used less
emotion-focused coping. Emotion-focused coping is usually positively associated with distress. Thus, this finding is consistent with Lazarus and Folkman's theory of stress, appraisal, and coping.

There are many possible explanations why these non-responders are different on these factors. There was no one main reported stressor for this group, as the main stressors reported were from all categories of the stressor questionnaire. It is interesting to note that only one of the 11 respondents with missing data reported finances as their main stressor. In addition, 10 of the 11 non-respondents were unemployed (one participant failed to report all socio-demographic information). It may be that those who did not report their incomes may have higher incomes than the average of the 81 respondents, and therefore, they may be able to spend the time and energy required to cope with their stress more effectively. Overall, assessing the stress levels, primary stressors, and how one copes with stress and the relationship between coping and quality of life, is a task which needs to be further investigated for the FM population.

(7.6) Limitations of this Study

There are several limitations of this study which should be detailed. First, this sample was from a specialized medical population seeking health services at a rheumatology clinic. Therefore, results cannot be generalized to the entire FM population, as many people with FM may not seek medical treatment from a rheumatologist. Aaron et al. (1995) has found that those with FM, in the
community and who had not sought treatment for their condition, experienced fewer tender points, had higher pain thresholds, lower levels of fatigue and pain intensity, and had lower numbers of lifetime psychiatric diagnoses than those who did seek treatment from a rheumatology clinic. Women who do not seek such services were not included in this study because they may have a problem with obtaining a correct diagnosis of FM. Second, the sample size was small and, thus, only a relatively small number of variables could be used in the hierarchical regression. Third, only those significant socio-demographic variables for this sample were entered in the hierarchical regression analyses. According to Stevens (1996) this makes the results more sample-specific and less generalizable to the FM population. Finally, using cross-sectional data make causal inferences difficult to establish. A longitudinal study concerning the relationships among health, stress, coping, and quality of life is recommended.

(7.7) Conclusions

This thesis examined the effects of health, stress, coping and socio-demographics on the quality of life of women from a medical population. This study showed that mental health, such as the presence of depression and physical impairment, plays a role in the quality of life of women with FM. Although seeking out a variety of health professionals for services related to their FM, these women still experienced a high functional impact of the disorder. Scores for important quality of life domains concerned with participation in recreation, in the
community and in work, were low. This sample also experienced moderate levels of stress in a variety of areas. A majority of the sample was unemployed, and, thus, it was not surprising to find that problems with finances constituted the primary stressor.

This study, as well as others, demonstrates that FM can negatively affect aspects of everyday life (Henriksson et al., 1992; Burckhardt et al., 1993; Schaefer, 1995; Henriksson & Burckhardt, 1995; Henriksson, 1995a, 1995b). It is with this knowledge that researchers and health practitioners must focus attention on and develop holistic interventions models. Individuals with FM not only need to maintain their physical and mental health, but they must be able to maintain current activities or learn new ones that support their self-image. Without sufficient stamina, individuals may be unable to work, participate in meaningful activities, and maintain family roles and a positive self-image. While interventions for the obvious physical and psychological problems are important, others may also be needed. These interventions include: vocational retraining, recreational and leisure counselling, consultation with a social worker, and/or participation in a support group and occupational therapy. Individual assessments and intervention plans can help an individual with FM attain a good quality of life.

As research concerning psychosocial issues continues to grow within the field of FM, the type information discussed above is essential if researchers and clinicians are to understand the lives of people with FM. In addition, such
findings will aid in the development of successful interventions. As this study revealed, there are certain areas in which quality of life is experienced as poor, but these areas are not typically addressed in the major interventions for FM. Investigations into the biological mechanisms underpinning FM are contributing new and valuable information that points toward the organic cause of the condition. However, research on both psychosocial and biological factors is necessary in order to best benefit individuals with FM.
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LIST OF APPENDICES

Appendix A - Information Letter and Consent Form
Appendix B - Questionnaire Package
Appendix C - Copyright Permission Letters
Dear Participant:

I am a graduate student in the Graduate Department of Rehabilitation Science, Faculty of Medicine, at the University of Toronto. I am conducting research under the supervision of Dr. Rebecca Renwick. My research looks at the relationship between coping and quality of life and other related factors for people who have fibromyalgia. Like yourself, I too have fibromyalgia, and know about the challenges of having this disorder.

Dr. Reynolds, your Rheumatologist, is informing all of his eligible patients who have fibromyalgia about this study on coping and quality of life. You are eligible to participate in this study if you have fibromyalgia, and no other diseases or disorders, are female, between the ages of 20 and 65, and speak English.

After reading this information letter, if you do not wish to participate in this study, you may discard this letter after your appointment. No negative consequences will result regarding your present or future access to treatment if you decline to participate in this study. If you do wish to participate in this study, please see Dr. Reynolds’ secretary to pick up the questionnaire and educational package, and consent form. The consent form must be filled out and returned in the white envelop provided labelled “consent form” to Dr. Reynolds secretary before you leave. Your name will be kept confidential at all times as I will not include your name in the final report, or any published material. In addition, your name will not appear on any questionnaire. You may withdraw from this study anytime without fear of any present or future treatment or access to medical or social care.

What Your Voluntary Participation Involves:

Your involvement in this study requires answering a questionnaire package. Your answers will provide information about: your life, health status, mood, the impact of fibromyalgia on your life, stressors in your life, how you cope with such stressors, and how good your life is for you. Completion of these questions will take 1 to 1 ½ hours. I would appreciate completion of all the questions. However, you may decline to answer any question if you wish. If you have difficulty with any of the questions, or you would prefer that I interview you, please call me at (416) 971-3088. If I am not in the office when you call, leave your first name only, your phone number, and the best times for me to phone you on the answering machine.
The Risks and Benefits of Your Participation:

There are no apparent risks for participating in this study; however, you may become tired answering all of the questions. Please feel free to rest and to take your time answering the questions.

I expect that the information gathered in this study will contribute to better treatment services in the future for people with fibromyalgia and other similar conditions, and help researchers gain an understanding of how one adjusts to fibromyalgia. Thus, although the benefits are not immediately felt, I expect they will be felt in the future. In addition, in this package you will find information on fibromyalgia and local resources where you can obtain more information and support. I request that you read this information package on fibromyalgia after you have completed the questionnaire package.

INFORMATION

Thank you for reading this information, and if you have any questions, please call me, Victoria Elliot-Gibson, at (416) 971-3088, or Dr. Rebecca Renwick at (416) 978-1818. (The University of Toronto Ethics Committee and The Toronto Hospital have reviewed and given ethics approval to this study.)

Sincerely,

Victoria Elliot-Gibson, B.A. (Recreation & Psychology)
Graduate Student (M.Sc. Candidate)
CONSENT FORM

I have read the information letter provided to me about this study on fibromyalgia, coping and quality of life. I realize that I will be asked to answer the attached questionnaire package to the best of my ability and that I may omit any question(s) which I do not want to answer. I may call the researcher, Victoria Elliot-Gibson at (416) 971-3088, for clarification of any question(s), or to request an interview at my convenience.

I may withdraw from this study anytime without fear of any negative consequences on my access to and receiving health care services.

All information that I provide will be held in strict confidence, and be kept in a locked cabinet at the University of Toronto. In addition, I will not be identified in any way in the final report. I also understand that this project has been reviewed and received ethics approval through the University of Toronto and the Toronto Hospital, and that I may contact these offices if I have any concerns or questions about my involvement in this study.

Signature: ____________________________________________

Print First Name: _______________________________________

Telephone Number: _____________________________________

Date: ____________________________________________

Please provide your address below if you wish to receive a summary of the findings of this study, which will be available by the summer of 1997.

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
Fibromyalgia, Coping, & Quality of Life

Questionnaire Package
**FIBROMYALGIA ATTITUDES INDEX**

**Instructions**
The purpose of this questionnaire is to measure how you are feeling about your life right now. Please read each item below and indicate, by circling the appropriate category, to what extent you agree or disagree with each statement.

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Do not agree or disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. My fibromyalgia is controlling my life</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. Managing my fibromyalgia is largely my own responsibility</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. I can reduce my pain by staying calm and relaxed</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. Too often, my pain just seems to hit me from out of the blue</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. If I do all the right things, I can successfully manage my fibromyalgia</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6. I can do a lot of things myself to cope with my fibromyalgia</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7. When it comes to managing my fibromyalgia, I feel I can only do what my doctor tells me to</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8. When I manage my personal life well, my fibromyalgia does not flare as much</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9. I have considerable ability to control my pain</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10. I would feel helpless if I couldn't rely on other people for help with my fibromyalgia</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11. Usually, I can tell when my fibromyalgia will flare</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>12. No matter what I do, or how hard I try, I just can't seem to get relief from my pain</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>13. I am coping effectively with my fibromyalgia</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>14. It seems as though fate and other factors beyond my control affect my fibromyalgia</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>15. I want to learn as much as I can about my fibromyalgia</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Instructions
For questions 1 through 10, please circle the number that best describes how you did overall for the past week. If you don't normally do something that is asked, cross the question out.

<table>
<thead>
<tr>
<th>Were you able to:</th>
<th>Always</th>
<th>Most times</th>
<th>Occasionally</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Do shopping?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2. Do laundry with a washer &amp; dryer?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3. Prepare meals?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4. Wash dishes/cooking utensils by hand?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5. Vacuum a rug?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6. Make beds?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7. Walk several blocks?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>8. Visit friends or relatives?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>9. Do yard work?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>10. Drive a car?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

11. Of the 7 days in the past week, how many days did you feel good? (Circle one below)

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
</table>

12. How many days last week did you miss work because of your fibromyalgia? (Circle one below) (If you don't have a job outside the home, leave this item blank.)

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
</table>
For the remaining items, place a mark like this | at the point on the line that best indicates how you felt overall for the past week.

13. When you did work, how much did pain or other symptoms of your fibromyalgia interfere with your ability to do your job?

| No problem with work | Great difficulty with work |

14. How bad has your pain been?

| No pain | Very severe pain |

15. How tired have you been?

| No tiredness | Very tired |

16. How have you felt when you get up in the morning?

| Awoke well rested | Awoke very tired |

17. How bad has your stiffness been?

| No stiffness | Very stiff |

18. How nervous or anxious have you felt?

| Not anxious | Very anxious |

19. How depressed or blue have you felt?

| Not depressed | Very depressed |
STRESSORS QUESTIONNAIRE

Instructions
During the past month how much have each of the following areas in your life been stressful. An event is to be considered stressful if you felt it to be harmful, threatening, or challenging. Coping with this situation required you to use considerable physical and/or mental effort and energy. A stressful situation may be an enduring event which has lasted longer than a month, or it could be a new encounter that you have recently experienced.

<table>
<thead>
<tr>
<th>Letter of Item</th>
<th>Description of the specific event:</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Relationships with friends</td>
<td></td>
</tr>
<tr>
<td>B. Relationships with family</td>
<td></td>
</tr>
<tr>
<td>C. Your current primary relationship, if you have one</td>
<td></td>
</tr>
<tr>
<td>D. Work</td>
<td></td>
</tr>
<tr>
<td>E. Your finances</td>
<td></td>
</tr>
<tr>
<td>F. The illnesses of people close to you</td>
<td></td>
</tr>
<tr>
<td>G. The death of someone close to you</td>
<td></td>
</tr>
<tr>
<td>H. Your own health</td>
<td></td>
</tr>
<tr>
<td>I. Political issues</td>
<td></td>
</tr>
<tr>
<td>J. Other, please specify below:</td>
<td></td>
</tr>
</tbody>
</table>

Please look over the list of stressful situations above. Which is the MOST stressful to you, and please describe the specific event. For example, if your most stressful event was work, what was the specific stressful event at work - it could be an argument with your employer or a loss of a co-worker, etc...

Letter of Item:  
Description of the specific event:  

This is an image of a stressors questionnaire. The instructions are detailed, asking about the stressfulness of various areas in the past month, and include options for different levels of stress, from None to A Great Deal. There is also a section for other unspecified stressful events. The questionnaire is structured with options to indicate the degree of stress for each area, ranging from None to A Great Deal, and includes a section for other, unspecified stressors. The purpose of this questionnaire is to assess the amount of stress experienced in various aspects of a person's life. The instructions explain that an event is considered stressful if it was harmful, threatening, or challenging, requiring considerable physical and mental effort. This may be an enduring event lasting longer than a month, or a new encounter recently experienced. The response options include None, A Bit, Quite A Bit, and A Great Deal, with a Not Applicable option for those who do not experience stress in a particular area. Finally, there is a space for specifying other stressful events not listed in the questionnaire.
Instructions
On the previous questionnaire, you indicated how stressful certain areas of your life are, and you indicated and described the most stressful event in your life. For this questionnaire, read each item below and indicate, by circling the appropriate category, to what extent you used this coping method in the situation you ranked as your most stressful situation.

The most stressful area I am currently coping with is: ________________________________

<table>
<thead>
<tr>
<th></th>
<th>Not used</th>
<th>Used some-what</th>
<th>Used quite a bit</th>
<th>Used a great deal</th>
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<td>1.</td>
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<td>11.</td>
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<td>12.</td>
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<td>13.</td>
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<td></td>
<td>Not used</td>
<td>Used some-what</td>
<td>Used quite a bit</td>
<td>Used a great deal</td>
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<tr>
<td>15.</td>
<td>Looked for the silver lining, so to speak; tried to look on the bright side of things</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>16.</td>
<td>Slept more than usual</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>17.</td>
<td>I expressed anger to the person(s) who caused the problem</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>18.</td>
<td>Accepted sympathy and understanding from someone</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>19.</td>
<td>I told myself things that helped me to feel better</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>20.</td>
<td>I was inspired to do something creative</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>21.</td>
<td>Tried to forget the whole thing</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>22.</td>
<td>I got professional help</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>23.</td>
<td>Changed or grew as a person in a good way</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>24.</td>
<td>I waited to see what would happen before doing anything</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>25.</td>
<td>I apologized or did something to make up</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>26.</td>
<td>I made a plan of action and followed it</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>27.</td>
<td>I accepted the next best thing to what I wanted</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>28.</td>
<td>I let my feelings out somehow</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>29.</td>
<td>Realized I brought the problem on myself</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>30.</td>
<td>I came out of the experience better than when I went in</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>31.</td>
<td>Talked to someone who could do something concrete about the problem</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>32.</td>
<td>Got away from it for a while; tried to rest or take a vacation</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>33.</td>
<td>Tried to make myself feel better by eating, drinking, smoking, using drugs or medication, etc</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>34.</td>
<td>Took a big chance or did something very risky</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Not used</td>
<td>Used some-what</td>
<td>Used quite a bit</td>
</tr>
<tr>
<td>---</td>
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<td>----------</td>
<td>----------------</td>
<td>------------------</td>
</tr>
<tr>
<td>35.</td>
<td>I tried not to act too hastily or follow my first hunch</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>36.</td>
<td>Found new faith</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>37.</td>
<td>Maintained my pride and kept a stiff upper lip</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>38.</td>
<td>Rediscovered what is important in life</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>39.</td>
<td>Changed something so things would turn out all right</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>40.</td>
<td>Avoided being with people in general</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>41.</td>
<td>Didn't let it get to me; refused to think too much about it</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>42.</td>
<td>I asked a relative or friend I respected for advice</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>43.</td>
<td>Kept others from knowing how bad things were</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>44.</td>
<td>Made light of the situation; refused to get to serious about it</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>45.</td>
<td>Talked to someone about how I was feeling</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>46.</td>
<td>Stood my ground and fought for what I wanted</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>47.</td>
<td>Took it out on other people</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>48.</td>
<td>Drew on my past experiences; I was in a similar situation before</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>49.</td>
<td>I knew what had to be done, so I doubled my efforts to make things work</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>50.</td>
<td>Refused to believe that it had happened</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>51.</td>
<td>I made a promise to myself that things would be different next time</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>52.</td>
<td>Came up with a couple of different solutions to the problem</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>53.</td>
<td>Accepted it, since nothing could be done</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>54.</td>
<td>I tried to keep my feelings from interfering with others things too much</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Question</td>
<td>Not used</td>
<td>Used somewhat</td>
<td>Used quite a bit</td>
<td>Used a great deal</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>----------</td>
<td>---------------</td>
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<td>-------------------</td>
</tr>
<tr>
<td>55. Wished that I could change what had happened or how I felt.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>56. I changed something about myself.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>57. I daydreamed or imagined a better time or place than the one I was in.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>58. Wished that the situation would go away or somehow be over with.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>59. Had fantasies or wishes about how things might turn out.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>60. I prayed.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>61. I prepared myself for the worst.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>62. I went over in my mind what I would say or do.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>63. I thought about how a person I admire would handle this situation and used that as a model.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>64. I tried to see things from the other person's point of view.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>65. I reminded myself how much worse things could be.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>66. I jogged or exercised.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
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</tbody>
</table>

*How much control do you feel you had to change this situation? (Please check only one)*

- Could change or do something about the problem: [ ]
- Had to accept or get used to the problem: [ ]
- Needed to know more about the situation before I could act: [ ]
- Had to hold myself back: [ ]
QUALITY OF LIFE PROFILE

What is Quality of Life?

Quality of Life, in simple terms, means:

"How good is your life for you?"

The answer to this question is a measure of a person's Quality of Life.

To answer the question "How good is your quality of life for you?" you are asked to focus on yourself and to rate some aspects of your life. These are all rated on a simple scale of 1 - 5. The aspects of your life are divided evenly into 9 areas — areas that we think are part of the lives of people.

The nine areas that are part of the lives of all people are:

1. My Body and My Health
2. My Thoughts and Feelings
3. My Beliefs and Values
4. Where I Live and Spend My Time
5. The People Around Me
6. My Access to Things
7. My Daily Activities
8. What I Do For Enjoyment
9. What I Do To Improve or Change

First, you will rate the same aspects of your life two times, using two questions: How important is this to me in my life? and How satisfied am I with this part of my life? Then, you will indicate how much control and possibility for improvement exist in the 9 areas of your life. This sounds like a lot, but you will find that you can rate them rather quickly.

Please complete your ratings as honestly as you can.
I. Importance

Instructions:

1. The first question to ask yourself is:

   How *important* is this to me in my life?

   If you need to think about the question another way, try:

   How much do I care about this?

2. Rate each of the items from 1 to 5, using the rating scale at the top of the following pages. Rate items 5 if they are extremely important to you and strongly direct your thinking and/or activities; rate items 3 if you think they are somewhat important; rate items 1 if they have no importance in your life, or are not relevant.

   Note: You may score N/A for Not Applicable, or DK for Don’t Know.
Rating Scale:

<table>
<thead>
<tr>
<th>NOT AT ALL</th>
<th>NOT VERY</th>
<th>SOMEWHAT</th>
<th>VERY</th>
<th>EXTREMELY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

How important to me is --?

My body and my health:

1. Being physically able to get around
2. My appearance - how I look
3. My exercising and being fit
4. My hygiene - caring for myself
5. My nutrition and the food I eat
6. My physical health

My thoughts and feelings:

7. Accepting the way I am
8. Being free of worry and stress
9. How I feel about myself
10. My mental health
11. The mood I am usually in
12. Thinking and acting independently

My beliefs and values:

13. Celebrating special events in my life
14. Feeling that life has meaning
15. Having hope for the future
16. Having religious or spiritual beliefs
17. Helping others
18. My own ideas of right and wrong
How important to me is - ?

**Where I live and spend my time:**

19. Feeling safe in my home  
20. Feeling safe when I go out  
21. The area of the country I live in  
22. The house or apartment I live in  
23. The neighbourhood I live in  
24. The things that I own

**The people around me:**

25. Being close to people in my family  
26. Belonging to cultural/interest/faith groups  
27. Having acquaintances  
28. Having a spouse or special person  
29. Having social events to attend  
30. Having friends

**My access to things:**

31. Being able to get professional services (medical, social, etc.)  
32. Having a good education  
33. Having enough money  
34. Having events in my community to go to (movies, shows, fairs, etc.)  
35. Having places in my community to go to (stores, restaurants, etc.)  
36. Having work I enjoy
Rating scale:

<table>
<thead>
<tr>
<th>NOT AT ALL</th>
<th>NOT VERY</th>
<th>SOMEWHAT</th>
<th>VERY</th>
<th>EXTREMELY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

How important to me is — ?

**The daily things I do:**

37. Doing things around my home
38. Doing volunteer work for others
39. Going to appointments (medical, social services, etc.)
40. Looking after my appearance and hygiene
41. Looking after other people or pets
42. Working at a job or attending school

**The things I do for enjoyment:**

43. Attending public entertainment
44. Having hobbies and interests
45. Having vacation and holiday activities
46. Indoor activities (TV, reading, etc.)
47. Outdoor activities (walks, cycling, etc.)
48. Visiting and spending time with others

**The things I do to improve and change:**

49. Being able to cope with changes in my life
50. Getting along better with others
51. Improving my physical health and fitness
52. Learning about new things
53. Solving my problems
54. Trying out new things
II. **Satisfaction**

**Instructions:**

1. The second question to ask yourself is:

   How *satisfied* am I with this part of my life?

   If you need to think about the question another way, try:

   How happy am I with this aspect of my life?

2. Rate each of the items from 1 to 5, using the rating scale at the top of the following pages. Rate items 5 if you are extremely satisfied with this part of your life; rate items 3 if you think you are feeling moderately satisfied with this aspect of your life; rate items 1 if you are not at all satisfied.

   **Note:** You may score N/A for Not Applicable, or DK for Don't Know.
How satisfied am I with —?

**My body and my health:**

1. My physical ability to get around
2. My appearance - how I look
3. My exercising and being fit
4. My hygiene - caring for myself
5. My nutrition and the food I eat
6. My physical health

**My thoughts and feelings:**

7. How accepting I am of myself
8. How free I am of worry and stress
9. How I feel about myself
10. My mental health
11. The mood I am usually in
12. How independently I think and act

**My beliefs and values:**

13. How I celebrate special events in my life
14. Feeling that life has meaning
15. My hope for the future
16. My religious or spiritual beliefs
17. My helping of others
18. My ideas of right and wrong
Rating scale:

<table>
<thead>
<tr>
<th>NOT AT ALL</th>
<th>NOT VERY</th>
<th>SOMEWHAT</th>
<th>VERY</th>
<th>EXTREMELY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

How satisfied am I with — ?

Where I live and spend my time:

19. How safe I feel in my home
20. How safe I feel when I go out
21. The area of the country I live in
22. The house or apartment I live in
23. The neighbourhood I live in
24. The things that I own

The people around me:

25. How close I am to people in my family
26. The cultural/interest/faith groups I belong to
27. My acquaintances
28. My spouse or special person
29. The social events I attend
30. The friends I have

My access to things:

31. My ability to get professional services (medical, social, etc.)
32. The education I have
33. The amount of money I have
34. The events in my community I go to (movies, shows, fairs, etc.)
35. The places I go to in my community (stores, restaurants, etc.)
36. The work I do
How satisfied am I with —?

The daily things I do:

37. The things I do around my home
38. The volunteer work I do for others
39. The appointments I go to (medical, social services, etc.)
40. My looking after my appearance and hygiene
41. My looking after other people or pets
42. The work I do at a job or school

The things I do for enjoyment:

43. The public entertainment I attend
44. My hobbies and interests
45. My vacation and holiday activities
46. My indoor activities (TV, reading, etc.)
47. My outdoor activities (walks, cycling, etc.)
48. The visiting and spending time with others I do

The things I do to improve and change:

49. My ability to cope with changes in my life
50. My getting along with others
51. My improving my physical health and fitness
52. My learning about new things
53. My solving of my problems
54. My trying out new things
III. Control

Instructions:
1. The third question to ask yourself is:
   How much control do I have over this part of my life?
   If you need to think about the question another way, try:
   How much am I in charge of this aspect of my life?
2. Rate each of the items from 1 to 5, using the following rating scale. Rate items 5 if you have almost total control in this area of your life; rate items 3 if you think you have some control as most people in this aspect of life; rate items 1 if you have almost no control.

How much control do I have over — ?
1. My physical health
2. My thoughts and feelings
3. My beliefs and values
4. The places where I spend my time (home, school, work)
5. Who I spend my time with
6. Being able to use what my community has to offer
7. The everyday things I can do in my life
8. The things I can do for fun and enjoyment
9. The things I can do to improve myself

Rating Scale: Control

ALMOST NONE  NOT MUCH  SOME  MUCH  ALMOST TOTAL
1  2  3  4  5

10
IV. Opportunities

Instructions:

1. The last question to ask yourself is:
   Are there opportunities for me to improve this part of my life?
   If you need to think about the question another way, try:
   Do I have choices available to me about this aspect of my life?

2. Rate each of the items from 1 to 5, using the rating scale on the following page. Rate items 5 if you have a great many opportunities in this aspect of your life; rate items 3 if you think you have some opportunities in this aspect; rate items 1 if you have almost no opportunities in this aspect of your life.

Are there opportunities for me to improve:

1. My physical health
2. My thoughts and feelings
3. My beliefs and values
4. The places where I spend my time (home, school, work)
5. Who I spend my time with
6. Being able to use what my community has to offer
7. The everyday things I can do at my job, home, or school
8. The things I can do for fun and enjoyment
9. The things I can do to better myself

Rating Scale: Opportunities

[Diagram showing a scale from 1 to 5 with descriptions: Almost None, A Few, Some, Many, Great Many]
### QUALITY OF LIFE SCALE (QOL)

**Instructions**

Please read each item and circle the number that best describes how satisfied you are at this time. Please answer each item even if you do not currently participate in the activity or have a relationship. You can be satisfied or dissatisfied with not doing the activity or having the relationship.

<table>
<thead>
<tr>
<th>Item</th>
<th>Delighted</th>
<th>Pleased</th>
<th>Mostly Satisfied</th>
<th>Mostly Dissatisfied</th>
<th>Unhappy</th>
<th>Terrible</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Material comforts - home, food conveniences, financial security...</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>2. Health - being physically fit &amp; vigorous.............................</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>3. Relationships with parents, siblings &amp; other relatives - communicating, visiting, helping</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>4. Having and rearing children.............................................</td>
<td>7</td>
<td>6</td>
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<td>5. Close relationships with spouse or significant other...............</td>
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<td>6. Close friends.....................................................................</td>
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<td>6</td>
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<tr>
<td>7. Helping and encouraging others, volunteering, giving advice........</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
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<tr>
<td>8. Participating in organizations &amp; public affairs.....................</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
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<tr>
<td>9. Learning - attending school, improving understanding, getting additional knowledge</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
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<tr>
<td>10. Understanding yourself - knowing your assets and limitations - knowing what life is about</td>
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<td>6</td>
<td>5</td>
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<td>3</td>
<td>2</td>
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<td>11. Work - job or in home......................................................</td>
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<td>12. Expressing yourself creatively...........................................</td>
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<td>6</td>
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<tr>
<td>13. Socializing - meeting other people, doing things, parties, etc..</td>
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<td>6</td>
<td>5</td>
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<td>3</td>
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<td>14. Reading, listening to music or observing entertainment...............</td>
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<td>6</td>
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<td>15. Participating in active recreation......................................</td>
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<td>6</td>
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<td>16. Independence, doing for yourself........................................</td>
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<td>6</td>
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Instructions

On this questionnaire are groups of statements. Please read each group of statements carefully, then pick out the one statement in each group which best describes the way you have been feeling in the past week, including today. Circle the number beside the statement you picked out. Be sure to read all the statements in each group before making your choice.

I do not feel sad.................................................................................0
I feel sad.........................................................................................1
I am sad all the time and I can't snap out of it.........................2
I am so sad or unhappy that I can't stand it.................................3

I am not particularly discouraged about the future......................0
I feel discouraged about the future..............................................1
I feel I have nothing to look forward to.................................2
I feel that the future is hopeless and that things cannot improve...3

I do not feel like a failure.................................................................0
I feel I have failed more than the average person..................1
As I look back on my life, all I can see is a lot of failures........2
I feel I am a complete failure as a person.................................3

I get as much satisfaction out of things as I used to...................0
I don't enjoy the things the way I used to.................................1
I don't get real satisfaction out of anything anymore.............2
I am dissatisfied or bored with everything...............................3

I don't feel particularly guilty......................................................0
I feel guilty a good part of the time..........................................1
I feel quite guilty most of the time..........................................2
I feel guilty all of the time.........................................................3

I don't feel I am being punished..................................................0
I feel I may be punished...............................................................1
I expect to be punished...............................................................2
I feel I am being punished..........................................................3

I don't feel disappointed in myself.............................................0
I am disappointed in myself.........................................................1
I am disgusted with myself..........................................................2
I hate myself.................................................................................3

I don't feel I am any worse than anybody else..........................0
I am critical of myself for my weaknesses or mistakes...........1
I blame myself all the time for my faults.................................2
I blame myself for everything bad that happens......................3
I don't have any thoughts of killing myself.................................0
I have thoughts of killing myself, but I would not carry them out........1
I would like to kill myself......................................................2
I would kill myself if I had the chance......................................3

I don't cry anymore than usual..................................................0
I cry more now than I used to...................................................1
I cry all the time now...............................................................2
I used to be able to cry, but now I can't cry even though I want to......3

I am no more irritated now than I ever was.................................0
I get annoyed or irritated more easily than I used to.....................1
I feel irritated all the time now..................................................2
I don't get irritated at all by the things that used to irritate me........3

I have not lost interest in other people......................................0
I am less interested in other people than I used to.......................1
I have lost most of my interest in other people............................2
I have lost all of my interest in other people...............................3

I make decisions about as well as I ever did................................0
I put off making decisions more than I used to............................1
I have greater difficulty in making decisions than before................2
I can't make decisions at all anymore........................................3

I don't feel I look any worse than I used to................................0
I am worried that I am looking old or unattractive.......................1
I feel that there are permanent changes in my appearance that make me look unattractive...2
I believe I look ugly................................................................3

My appetite is no worse than usual..............................................0
My appetite is not as good as it used to be....................................1
My appetite is much worse now....................................................2
I have no appetite at all anymore...............................................3

I haven't lost much weight, if any, lately.....................................0
I have lost more than 5 pounds..................................................1
I have lost more than 10 pounds................................................2
I have lost more than 15 pounds................................................3

I am purposely trying to lose weight by eating less. Yes ____ No____

I am no more worried about my health than usual........................0
I am worried about physical problems such as aches and pain; or upset stomach, or constipation......1
I am very worried about physical problems and it is hard to think of much else....................2
I am so worried about my physical problems that I cannot think about anything else........3

I have not noticed any recent change in my interest in sex..................0
I am less interested in sex than I used to be................................1
I am much less interested in sex now..........................................2
I have lost interest in sex completely........................................3
These questions will provide me with general information about yourself.

1. All things considered, how good/not so good is your life these days? (Please check one)
   
   O₁ Excellent  O₂ Good  O₃ Average  O₄ Fair  O₅ Poor

2. What is your date of birth?  ____/_____/____
   Day  Month  Year

3. Please indicate your current marital status: (Please check one)
   
   O₁ Single  O₂ Married  O₃ Common Law  O₄ Separated  O₅ Divorced  O₆ Widowed
   Never Married  Living with Someone

4. How many people do you live with now? (Specify: If you live alone, your answer is “none”)
   _____ people

5. Who else lives with you now?
   
   Yes₁  No₀
   Spouse/Partner  O  O
   Parents or In-Laws  O  O
   Children under 18  O  O
   Children over 18  O  O
   Relatives  O  O
   Others not related to me  O  O

6. Are you presently working full or part-time?  O₁  O₀
   Yes  No

   If you are not working, please go to question 9.

7. How many hours do you work each week?  _____ hours

8. If you are working, please indicate your present occupation:
   ____________________________

9. If you are not working full or part-time, are you: (please check all that apply)
   
   O₁ Homemaker  O₂ Disabled  O₃ Retired  O₄ Unable to Find Work
   O₅ By Choice  O₆ Volunteering  O₇ Other:  (Specify)

10. Does your fibromyalgia affect your ability to work?  O₁  O₀
    Yes  No
11. What is the highest level of education that you have completed? (Circle only one and years)

1. Some elementary or public school.......................................................................................... number of years ______
2. Completed elementary or public school.................................................................................. number of years ______
3. Some high school..................................................................................................................... number of years ______
4. Complete high school............................................................................................................. number of years ______
5. Some vocational or technical college....................................................................................... number of years ______
6. Completed vocational or technical college.............................................................................. number of years ______
7. Some undergraduate university............................................................................................... number of years ______
8. Completed undergraduate university degree........................................................................... number of years ______
9. Some post-graduate university............................................................................................... number of years ______
10. Completed post-graduate university degree(s)...................................................................... number of years ______

12. What is your ethnic background? (Please check all that apply to you)

English Canadian  O 1  Dutch  O 8  Chinese  O 15  
French Canadian  O 2  Ukrainian  O 9  East Indian  O 16  
British  O 3  Hungarian  O 10  North American Indian  O 17  
Scottish  O 4  American  O 11  Metis  O 18  
Irish  O 5  Polish  O 12  Inuit  O 19  
Italian  O 6  Jewish  O 13  Other: (specify)........................................
German  O 7  Icelandic  O 14  Do not know  O 21

13. In what country were you born?

Canada  O 1  Another country  O 2

If you were born in another country, please complete questions 13a and 13b.

13a. Which country were you born in:_______________________________________________________

13b. When did you first come to Canada to live: 19 ____ (Year)

14. Please indicate your main source of income: (check all that apply)

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<tr>
<td>Salary</td>
<td>Unemployment Insurance</td>
<td>Disability Insurance</td>
<td>Family Benefits</td>
<td>Welfare</td>
<td>Personal Savings</td>
<td>Spouses' Income</td>
<td>Other: (specify)</td>
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15. Please indicate your total income for the past year:

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<tbody>
<tr>
<td>Under $20,000</td>
<td>$20,000</td>
<td>$29,999</td>
<td>$39,999</td>
<td>$49,999 &amp; above</td>
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</table>
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Fax: 215-238-4412

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