DOES EMOTIONAL EXPRESSIVITY MODERATE PAIN SEVERITY/PERSONALITY TRAITS AND DEPRESSION/MARITAL SATISFACTION RELATIONS IN FIBROMYALGIA PATIENTS?

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Approval of the Graduate School of Social Sciences

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ABSTRACT

DOES EMOTIONAL EXPRESSIVITY MODERATE PAIN SEVERITY/PERSONALITY TRAITS AND DEPRESSION/MARITAL SATISFACTION RELATIONS IN FIBROMYALGIA PATIENTS?

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The objective of this study was to explore whether emotional expressivity moderates pain severity/personality traits and depression/marital satisfaction relations in fibromyalgia patients. Biopsychosocial Model was used as the conceptual framework for the study. The sample of the study was composed of 91 married fibromyalgia patients. Eight moderation models were tested using emotional non-expressiveness and alexithymia as moderators, independently. The models included pain severity and neuroticism as independent variables; and depression and marital satisfaction as

dependent variables. The findings suggested that when FM patients experience more pain, their depressive symptoms tended to increase. Moreover, depression tended to be higher when FM patients were more likely to have both emotional non-expressiveness and alexithymia. The findings of regression analyses indicated that as the neuroticism characteristics of FM patients increase, their depressive symptoms tend to increase, as well. However, there was no significant association between pain severity and marital satisfaction. There was no significant association between neuroticism and marital satisfaction. Even though alexithymia significantly predicted marital satisfaction, emotional non-expressiveness did not. The findings showed that emotional expressivity (emotional non-expressiveness and alexithymia) did not moderate pain severity/personality traits and depression/marital satisfaction relations in fibromyalgia patients. The strengths and limitations, as well as the implications of the findings, were discussed.

Keywords: Fibromyalgia, pain severity, neuroticism, depression, marital satisfaction.

ÖZ

DUYGU İFADESİ FİBROMİYALJİ HASTALARININ AĞRI ŞİDDETİ/KİŞİLİK ÖZELLİKLERİ VE DEPRESYON/EVLİLİK DOYUMU İLİŞKİLERİNDE BİÇİMLEYİCİ ROL OYNAR MI?

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Bu çalışmanın amacı duygu ifadesinin ağrı şiddeti/kişilik özellikleri ve depresyon/evlilik doyumu ilişkilerinde biçimleyici rol oynayıp oynamadığını incelemektir. Biyopsikososyal Model çalışmanın kavramsal çerçevesini oluşturmaktadır. Çalışmanın örneklem grubunu 91 evli fibromiyalji hastası oluşturmaktadır. Duygu ifade edememe ve aleksitimi betimleyici değişkenler olmak üzere 8 betimleyicilik modeli test edilmiştir. Modeller, bağımsız değişkenler olarak ağrı şiddeti ve nörotisizmi; ve bağımlı değişkenler olarak da depresyon ve evlilik

doyumunu içermektedir. Yapılan bir dizi regresyon analizlerine göre ortaya çıkan bulgular şu şekilde özetlenebilir: Ağrı şiddeti yüksek fibromiyalji hastalarında ağrı şiddetinin yükseldiği görülmüştür. Aynı zamanda, duygu ifade edememe ve aleksitiminin arttığı durumlarda hastalın depresif semptomlarının arttığı bulunmuştur. Bunların yanı sıra, hastalar daha çok nörotik karakteristiğe sahip oldukça, depresif semptomları artmıştır. Ancak ağrı şiddetinin, nörotisizmin ve duygu ifade edememenin evlilik doyumu üzerine önemli bir etkisi bulunmamıştır. Son olarak, duygu ifadesinin (duygu ifade edememe ve aleksitimi) ağrı şiddeti/kişilik özellikleri ve depresyon/evlilik doyumu ilişkilerinde biçimleyici rol oynamadığı görülmüştür. Çalışmanın güçlü ve zayıf yönlerinin yanısıra, çıkarımlar da tartışılmıştır.

Anahtar kelimeler: Fibromiyalji, ağrı şiddeti, nörotisizm, depresyon, evlilik doyumu.

To my lovely family

&

To my beloved life companion Cihan

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CHAPTER I

INTRODUCTION

The present study was conducted in order to investigate the effects of pain severity and personality traits on depression and marital satisfaction in patients with fibromyalgia syndrome, and to examine if emotional expressivity moderates these relations.

For this purpose, in the following sections first, fibromyalgia symptomatology, its diagnostic criteria and associated factors will be reviewed. Second, depression in relation with fibromyalgia symptomatology will be discussed. The last section will focus on marital satisfaction, and its association with the fibromyalgia symptomatology. In addition, the role of emotional expressivity on these relationships will be discussed.

1.1. Description of Fibromyalgia Syndrome

In today's world, many people suffer from disorders of musculoskeletal system including fibromyalgia syndrome (FM) which results in lower health-related quality of life. Although sporadic descriptions of fibromyalgia can be seen through the 1960s, its modern conceptualization occurred in 1970s to identify a distinct group of patients having high levels of pain, sleep disturbances and some psychiatric symptoms. Specifically, the development of criteria for the syndrome was formed as 'fibrositis' by Smythe and Moldofsky in 1977. Then, the 1990 American College of Rheumatology (ACR) classification was expanded to a set of criteria including tender points and decreased pain threshold (Wolfe & Hauser, 2011). FM is characterized by generalized bodily pain and sensitivity at 11 of 18 tender points, chronic widespread pain, fatigue and sleep disturbance during at least 3 months. Besides, tenderness, rigidity, mood disturbances including depression or anxiety, and some cognitive difficulties such as trouble in concentrating, forgetfulness, and

disorganized thinking are experienced by the most of patients (Arnold, Clauw, & McCarberg, 2011). However, the 2010 criteria discarded the tender point count and emphasized patient symptoms reported as painful through Widespread Pain Index (Wolfe et al., 2011).

Yunus and Inanici (2002) pointed out that 90 percentages of those patients who were diagnosed with FM are women (as cited in Brass, & Federoff, 2007, p.255). Furthermore, the illness is seen approximately 2% of the US population and 2.9% of European people (Stuifbergen et al., 2010). In Turkey, this rate is 3.6% for women between the ages of 20-64 (Dönmez & Erdoğan, 2010).

1.1.1. Effects of Fibromyalgia

FM is a pervasive and devastating syndrome resulting in a number of financial, physical, psychological, cognitive and social shortcomings which impair all aspects of health status (Bernard, Prince, & Edsall, 2000; Wassem, & Hendrix, 2003; & Bergman, 2005). Many patients who seek different treatment methods from the health care system have reported an additional multiple set of problems leading to increased costs. In regard to socioeconomic burden, there is little doubt about that living with FM makes people's lives harder directly through doctor visits, prescription and nutritional supplements, or indirectly like economic impact of disability and job loss (Wassem & Hendrix, 2003; Boonen et al., 2005; & Spaeth, 2009). The findings of a US study has recently showed that total healthcare costs of FM patients three times higher than a control group of patients randomly selected from a health-insurance database (Berger, Dukes, Martin, Edelsberg, & Oster, 2007).

In many industrialized countries, work-related musculoskeletal disorders are considered to be major health issues with respect to job strain, which refers to increased demands, and inadequate work control and satisfaction (Bergman, 2005). Many studies revealed that patients with FM mostly suffer from considerable work-related problems such as poor job

performance and productivity, missing days of work (Schaefer et al., 2011), change (Wallace, 1997) or loss of job (Greenfield, Fitzcharles, & Esdaile 1992; Bernard et al., 2000). Moreover, a number of studies (Andersson, Ejlertsson, Leden, & Rosenberg, 1993; Bergman, 2005) suggested that a greater level of chronic musculoskeletal pain including fibromyalgia was reported by the blue collar workers than other socioeconomic groups.

An additional consideration about the tremendous physical costs (Birtane, Uzunca, Taştekin, & Tuna, 2007) of FM is that most of those patients also reported poorer functional capacity for daily activities and physical aspect of quality of life as compared to general population (Mas, Carmona, Valverde, Ribas, & the Episer Study Group, 2008). For instance, many patients with FM reported difficulty in walking, moving, and exercising (Schaefer et al., 2011).

Several factors playing a significant role in patients' mental health as well as in their physical health have recently been placed under investigation. It is argued that the majority of patients experienced depression following the onset of FM (Offenbaecher, Glatzeder, & Ackenheil, 1998; Bernard, Prince, & Edsall, 2000; Verbunt, Pernot, & Smeets, 2008; Vishne et al., 2008). Likewise, there is evidence that many patients with FM have various psychiatric comorbidities such as panic disorder and anxiety (Epstein et al., 1999; Schaefer et al., 2011). Moreover, research consistently indicated increased rate of contemplated suicide in this patient group after developing FM due to the burden of it and a high prevalence of depression (Dreyer, Kendall, Danneskiold-Samsoe, Bartels, & Bliddal, 2010; Calandre et al., 2010; Wolfe, Hassett, Walitt, & Michaud, 2011).

Extensive research has revealed that FM patients do also experience greatly intensified cognitive dysfunctions, some of which are attention problems, difficulty with remembering, concentrating, thinking and decision making (Schaefer et al., 2011). Inadequate attention span, poor short-term memory, deteriorated verbal fluency and vocabulary, and impaired mental

alertness are other prevalent complaints of FM patients (Park, Glass, Minear, & Crofford, 2001; Miro et al., 2011).

The number of studies investigating empirically the relevance of sleep problems for the patients with FM has rapidly increased in recent years. Specifically, several patients experience block of sleep, shortness of breath or headache, sleep disturbance, daytime napping, and snoring, resulting in non-restorative and poor quality sleep (Theadom & Cropley, 2010; Miro et al., 2011; Schaefer et al., 2011).

The patients did also report that FM had an incalculable impact on their romantic relationships causing low relationship satisfaction and separation or divorce. Furthermore, their sexual lives were severely impaired due to the symptoms including decreased tolerance to sensory stimuli such as touch, the widespread pain and debilitating fatigue (Bernard, Prince, & Edsall, 2000; Söderberg, Strand, Haapala, & Lundman, 2002; Kool, Woertman, Prins, Middendorp, & Geenen, 2006; & Steiner, Bigatti, Hernandez, Lydon-Lam, & Johnston, 2010). Considering relationships, some research has investigated that many patients with FM suffer from a lack of social support and feeling that people do not understand their difficulties (Bernard, Prince, & Edsall, 2000; & Schoofs, Bambini, Ronning, Bielak, & Woehl, 2004).

In fact, biological, psychological and social factors must be incorporated to understand all of the aforementioned effects. Therefore, the contemporary biopsychosocial model including complete understanding of pain with no single factor in isolation must be considered.

1.1.2. Biopsychosocial Model

The biopsychosocial model (Engel, 1977) is crucial in understanding pain since it includes the roles of psychosocial variables as well as traditional biomedical ones (Malin & Littlejohn, 2012; Penney, 2010; Golden &

Barbera, 2005, p. 74). According to this model, there is a mutual and dynamic influence of mind and body on the occurrence of FM (See Figure 1.1.).

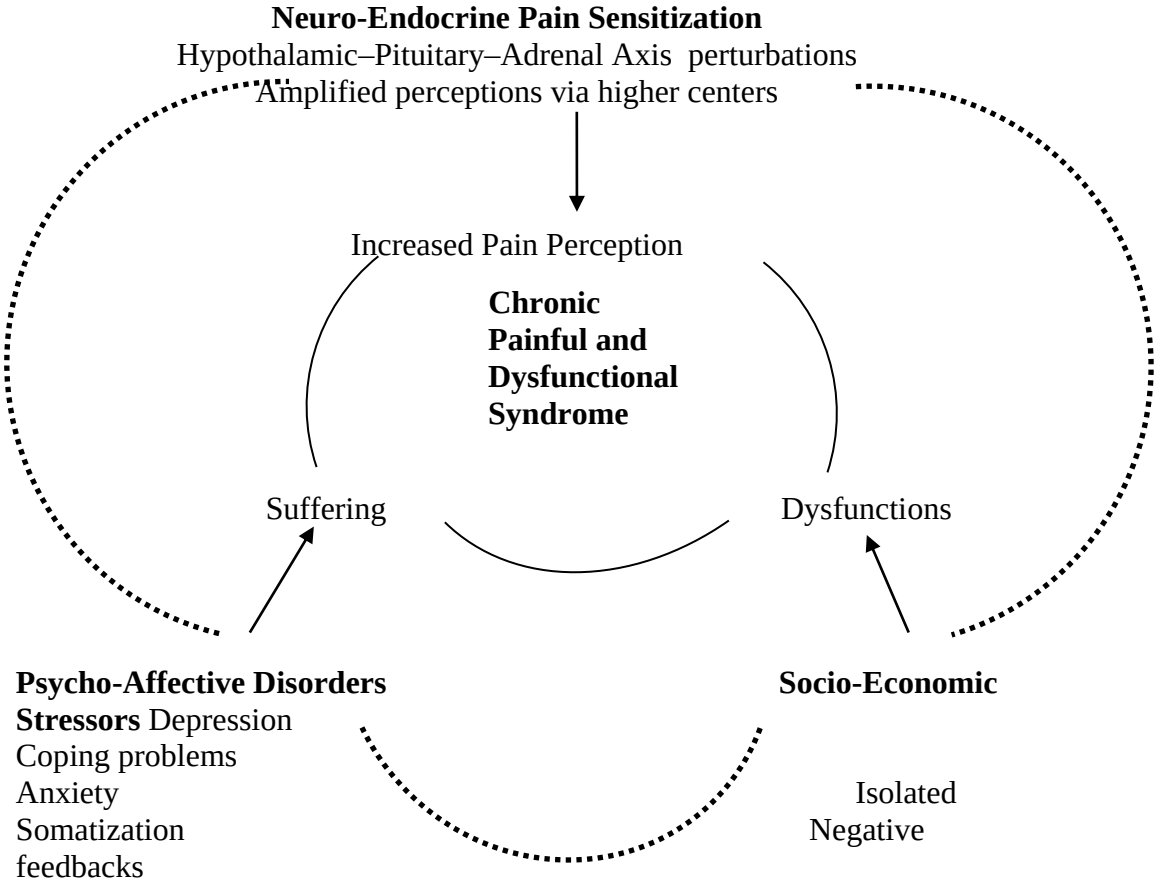


Figure 1.1.

Biopsychosocial model of pain sensitization and stressor pathways in chronic painful and dysfunctional syndromes (Masi, White, & Pilcher, 2002)

More specifically, the etiology of chronic dysfunctional illnesses such as fibromyalgia, chronic pain and irritable bowel syndrome mostly results from a number of various determinants as compared to organic diseases. Therefore, fibromyalgia can only be understood by multiple interactions of

biological, psychological, and socioenvironmental factors although the etiology of FM is still a mystery (Masi, White, & Pilcher, 2002).

To begin with, neurohormonal mechanisms play roles for different sensitization processes in FM (Pillemer, Bradley, Crofford, Moldofsky, & Chrousos, 1997; Yunus, 2000; Masi et al., 2002). Moreover, recent studies (Kashikar-Zuck, Graham, Huenefeld, & Powers, 2000; Prist, Wilde, & Masquelier, 2012) have demonstrated that patients with FM have hormonal abnormalities including in hypoactivity or hyperactivity in the hypothalamic–pituitary–adrenal axis (HPA) axis and the sympathetic nervous system. Another evidence of biological abnormalities was found a lack of inhibitory control in the brain to nonpainful repetitive somatosensory stimuli as a result of altered substance P level (Yunus, 2000) and other anti-nociceptive peptide mediator levels (Pillemer et al., 1997; Okifuji & Turk, 2002) in the cerebrospinal fluid (CSF) of patients with FM. Since the deterioration of central nervous system (CNS) structures and pathways leads to pain, FM patients' hyperexcitability of CNS neurons producing increased activity at higher brain centers might be perceived as more intense and prolonged pain (Pillemer et al., 1997). Besides, recent findings showed that there are physiological asymmetries of surface electromyography level, skin temperature and skin conductance level in FM patients (Mitani et al., 2006). With respect to the onset of FM, there are several studies (Turk, Okifuji, Starz, & Sinclair, 1996; Davis, Zautra, & Reich, 2001; Zautra et al., 2005) highlighting the importance of physical or emotional stress. In recent studies (Uveges et al., 1990; Davis, Zautra, & Reich, 2001), reports of FM patients revealed that there is a strong relationship between the level of emotional distress and the FM related symptoms. Due to the uncertain nature of the illness and its destructive symptoms, having FM is an already ongoing stressor for most patients. By considering biological factors mentioned above, the association between FM and stress may be explained through the disturbed stress-response system (Torpy et al., 2000).

In the literature, there is some evidence on genetic vulnerabilities underlying FM. With this regard, the findings of various studies showed an association between the existence of possible genes that are linked to the HLA region (Yunus et al., 1999) or the serotonin transporter gene regulatory region (Offenbaecher et al., 1999) and fibromyalgia. Besides, different environmental factors within families such as parental pain history (Schanberg, Keefe, Lefebvre, Kredich, & Gil, 1998; Bergman, 2005) and poor family functioning (Kashikar-Zuck et al., 2000) may precede the syndrome.

Recently, cognitive constructs influencing the vulnerability to onset and prognosis of pain for FM patients have been widely recognized. For instance, recent studies (Nelson, & Tucker, 2006; Palomino, Nicassio, Greenberg, & Medina, 2007; Furlong, Zautra, Puente, Lopez-Lopez, & Valero, 2010; Lledó-Boyer et al., 2010) that explore the relation between control beliefs and FM focused on self-efficacy and internal locus of control as modulating factors.

The role of psychological factors in FM is a controversial issue. However, distorted personality patterns, high level of life stresses, anxiety and depression, or other psychological symptoms have been reported by numerous studies (Fassbender, Samborsky, Kellner, Muller, & Lautenbacher, 1997; Offenbaecher, Glatzeder, & Ackenheil, 1998; Okifuji & Turk, 2002; Torres et al., 2013). While psychological factors are not accepted as the primary cause of FM, there are a number of studies (e.g., Epstein et al., 1999; Forseth, Husby, Gran, & Forre, 1999) showing that depression is an essential predictor of the development of FM. However, some research findings (Fassbender et al., 1997; Masi et al., 2002; Fuller-Thomson, Nimigon-Young, & Brennenstuhl, 2012) indicated that fibromyalgia and depression mostly overlap and there is a bidirectional relationship between them.

In addition to depression, the association of emotional factors with FM symptoms has also been underlined since the majority of patients with FM experience negative emotions leading to elevated pain. Emotion

processing styles, which means to automatic appraisals of events to identify both the type and the intensity of emotional experiences, are affect intensity and alexithymia. Emotion regulation strategies referring altered or controlled behaviors and thoughts when particular emotions are experienced includes emotion expression and cognitive reappraisal (Keefe, Lumley, Anderson, Lynch, & Carson, 2001). In the light of these information, number of studies (Gillis, Lumley, Mosley-Williams, Leisen, & Roehrs, 2006; Middendorp et al., 2008; Geenen, Ooijen-van, Lumley, Bijlsma, & Middendorp 2012; Salgueiro et al., 2012; Weib, Winkelmann, & Duschek, 2013) documented that there are notable differences in emotion processing styles (e.g., experiencing affects intensely or being alexithymic) and emotion regulation strategies (e.g., expressing or reappraising) between the groups of FM and non-FM samples. For instance, the association between people with high affect intensity and emotion expression and less fibromyalgia impact was found (Geenen et al., 2012).

Regarding factors playing crucial role in the initiation and maintenance of FM, one of the most controversial issues is whether patients with medically unexplained syndromes have pathological personality traits (Torres et al., 2013). Previous studies suggested that there is a significant association between personality constructs and some of the physiological symptoms in FM (Torres et al., 2013; Tommaso, Federici, Loiacono, Delussi, & Todarell, 2014). Instead of a uniform entity, FM patients appear to belong to various functional syndromes (Lundberg, Anderberg, & Gerdle, 2009). Moreover, several authors (Payne et al., 1982; Ahles, Yunus, Riley, Bradley, & Masi, 1984; Malin & Littlejohn, 2012) emphasized that these patients reported increased scores on the depression, hysteria, and hypochondriasis scales of Minnesota Multiphasic Personality Inventory (MMPI).

Several studies (McBeth, Macfarlane, Benjamin, Morris, & Silman, 1999; Lee, 2010; Zafar et al., 2010; Kilic et al., 2011) indicated that adverse early childhood experiences including separation from or death of parents or abuse, and perceived paternal overprotection or lack of care may lead to

increased risk of developing FM. In this context, a number of studies (Walker et al., 1997; Alexander et al., 1998) suggested that there is a significant relation between a history of sexual or physical abuse and increased use of outpatient health care services and medications for pain in FM patients.

In the light of the literature mentioned above, the present study will examine the effects of pain severity and personality, on depression and marital satisfaction in patients with FM. Moreover, the role of emotion expressiveness on these relationships as a moderator factor will be investigated. In the following sections, detailed information about these variables and their relationships will be given with respect to FM patients.

In addition to physical problems, living with FM adversely affects patients, who have to cope with many problems mentioned above. Indeed, depression and marital satisfaction are among the most prominent problems (Masi et al., 2002; Kool, Woertman, Prins, Middendorp, & Geenen, 2006; Steiner et al., 2010; Fuller-Thomson, Nimigon-Young, & Brennenstuhl, 2012). Respectively, the following sections will be on depression and marital satisfaction as experienced by FM patients.

1.2. Fibromyalgia and Depression

In the literature, it has been reported that patients with FM have greater lifetime rates of medical service utilization as well as more comorbid conditions compared to other rheumatic diseases (Wolfe et al., 1997a; Berger et al., 2007). Among the psychiatric comorbidities, FM patients present high lifetime and current diagnosis for depression ranging from %20 to %80 (Fietta, Fietta, & Manganelli, 2007; Uguz et al., 2010; Aguglia, Salvi, Maina, Rossetto, & Aguglia, 2011; Ramiro et al., 2013).

The high occurrence of depression in FM took into account two considerations - shared pathophysiologic mechanisms and precipitating factors. The shared predisposed genetic and environmental factors lead to increase the risk of developing depression in response to a triggering event. Similarly, FM is more likely

to exist when possible predisposing elements are combined with physical or psychosocial stressors (Gracely, Ceko, & Bushnell, 2011). To explain the relationship between pain intensity and depression level for patients with FM, not only shared pathophysiological processes between pain and depression, but also decreased pain threshold caused by dysregulated prefrontal and insular cortex, hippocampus and amygdala were reported in several studies (Vythilingam et al., 2004; Fitzgerald, Laird, Maller, & Daskalakis, 2008; Norman et al., 2010).

Although a limited number of studies has questioned that whether major affective disorders runs in families in patients with FM, some findings (Hudson, Goldenberg, Pope, Keck, & Schlesinger, 1992; Offenbaecher, Glatzeder, & Ackenheil, 1998; Raphael, Janal, Nayak, Schwartz, & Gallagher, 2004) indicated that the familial susceptibility to stressful events with depressive and pain-related symptoms should be a noticeable issue in regard to assessments of the FM patients. These results are consistent with a stress-vulnerability model of FM.

Besides, there is a gender difference resulting in higher prevalence rates of depression in women with FM compared to men. Lower pain threshold and pain tolerance among depressed women as a result of distinct sex hormones, different activities in agents, opiate and non-opiate systems, and the sympathetic systems were reported (Carter et al., 2002). In the light of this information, a study showed that there is a positive correlation between depression severity and the degree of tenderness for females with FM, but not for men (Vishne et al., 2008). Moreover, co-occurrence between depressive symptoms and FM is three times more common among women with FM as opposed to non-FM women (Raphael, Janal, Nayak, Schwartz, & Gallagher, 2006).

Some studies (Martinez, Ferraz, Fontane, & Atra, 1995; Tander et al., 2008; Gormsen, Rosenberg, Bach, & Jensen, 2010; Aguglia et al., 2011; Martinez, Casagrande, Ferreira, & Rossatto, 2013) suggested that the more pain the patients have, the higher depressive symptom scores they report. Besides, many studies (Tander et al., 2008; Gormsen et al., 2010) found that depressive symptoms are significantly associated with the worse quality of life in patients experiencing an "invisible disability". Moreover, subjects suffering from fibromyalgia presented

significantly higher pain scores on visual analogue scales as their depressive symptoms increase.

Since there are no physical markers of FM and the patients don't have any visible deformities, their families, friends and employers mostly have difficulty in believing that they suffer from various shortcomings. However, some FM patients cannot maintain educational or career goals and cannot be involved in community activities. This "helplessness and hopelessness" condition may contribute to a feeling of worthlessness and loss of self-esteem, which are components of depression (Wallace & Wallace, 2002, p.148–150).

As an unexpected and uncontrollable condition, FM patients have reported mostly spontaneous pain rather than movement-evoked pain. Moreover, they have suffered from the lack of pain relief resulting in reactive depression (Gracely et al., 2011). A recent study (Madenci, Herken, Yağız, Keven, & Gürsoy, 2006) found that increased duration of pain also resulted in elevated depressive symptoms. A study including children with juvenile primary fibromyalgia syndrome (JPFS) showed that children's level of depression was increased when, despite the onset of symptoms, receiving the convenient care was delayed. Consequently, longer pain duration of JPFS group lead to negative psychosocial functioning in the future (Kashikar-Zuck, Vaught, Goldschneider, Graham, & Miller, 2002).

In order to understand the nature of depression among FM patients, their cognitive processing regarding pain should also be considered. Actually, recent evidence revealed that the more perceived pain the patient experienced, the higher the level of depressive symptoms the person with FM had (Aparicio et al., 2013). The underlying mechanism of this relation may be explained through a depression-related cognitive style namely 'catastrophizing' characterized by an exaggerated negative orientation towards pain stimuli (Hassett, Cone, Patella, & Sigal, 2000). However, there is a current argument about whether catastrophizing is a cognitive style or a personality variable.

Clinicians typically identify certain personality characteristics that allow for easy translation of life events into emotional distress for FM patients (Malin &

Littlejohn, 2012). Some research (Keel, 1998; Fietta, Fietta, & Manganelli, 2007; Torres et al., 2013) suggested that subjects with FM may be prone to depression depending on personality variables including low self-esteem, perfectionism, victimization and avoidance. When the sense of self-esteem relies on external experiences such as results of one's acts or love and acceptance by others; low self-esteem is significantly associated with depressive cognitions (Roberts & Monroe, 1992). In this regard, an explorative research (Johnson, Paananen, Rahinantti, & Hannonen, 1997) suggested that this competence-dependent self-esteem seems to be more likely in depressed FM patients than the non-depressed FM group. At least half of the FM patients has shown perfectionist tendencies such as being well groomed, organized and in control. However, a triggering event (i.e., trauma or family pressures) may throw off their balance. As a result of having difficulty to maintain their current lifestyle, they are likely to feel failure, rejection or guilty leading to depression (Wallace & Wallace, 2002, p.122).

Cloninger (1993) described personality as two dimensions consisting of temperament and character (Cloninger, Svrakie, & Przybeck, 1993). Based on Temperament and Character Inventory, most of the FM patients had a temperament type with high "Harm Avoidance" (HA) which means that a heritable tendency to be overreactive to signals of aversive stimuli, by inhibited or passive behavior to avoid punishment or frustration (Gencay-Can & Can, 2012). These results pointed FM patients' tendency to deny problems and avoid dealing with them effectively (Anderberg, Forsgren, Ekselius, Marteinsdottir, & Hallman 1999; Glazer, Buskila, Cohen, Ebstein, & Neumann, 2010; Lundberg et al., 2009). Moreover, the findings demonstrated that the more HA scores FM patients have, the higher severity of depression they experience (Kaya, Erden, Kayar, & Kıralp, 2010; Santos et al., 2011; Gencay-Can & Can, 2012). As a characteristic feature, low scores of "self-directedness" referring a tendency to blaming circumstances with ignorance of personal influence, lack of future-oriented goals, passivity and feeling of helplessness was also found significantly associated with FM (Lundberg et al., 2009, Santos et al., 2011).

As one of the personality traits, neuroticism is likely to have an impact on vigilance to pain. Indeed, neuroticism has been linked to an increased experience of bodily sensations. That is, neurotic individuals are more likely to identify internal physical sensations and minor aches. To illustrate, highly neurotic people perceived a low pain severity as threatening, and consequently, increase catastrophic thoughts about pain (Goubert, Crombez, & Damme, 2004). In particular, considerable evidence (Martinez, Sanchez, Miro, Medina, & Lami, 2011; Torres et al., 2013; Tommaso et al, 2014; Malin & Littlejohn, 2011) showed that many FM patients reported higher neuroticism scores that were generally associated with fear of pain and pain catastrophizing. It was found that the most symptoms of FM were significantly influenced by neuroticism. In addition, a significant association between moderate and higher levels of neuroticism and FM symptoms was found. Besides, the variation between the mid-to-high levels of neuroticism was lower than the variation between the low-to-mid levels of neuroticism. Moreover, it was evident that there was a strong relationship between neuroticism and depression. Due to the effect of personality on the type of coping strategies that are used to deal with pain rather than direct effect of the pain itself, FM patients with neurotic personalities may be more likely to have disrupted interpretation of the meaning of painful stimuli (Malin & Littlejohn, 2011).

Another major issue arising from the results of existing studies is the importance of emotional expressivity of pain and depression. Among patients with FM, it was found that emotionally avoidant strategies were associated with affect intensity (Middendorp et al., 2008). One of these processes is a concept developed by Sifneos (1977), alexithymia, which means that a trait characterized by disability to identify and express as well as regulate emotions and a tendency to have an externally oriented thinking rather than inner experiences (Finset, 2004). The effect of pain intensity may be moderated by alexithymia, which may have adverse effects on depression. Several studies (Lumley, 2004; Pedrosa Gil et al., 2008; Kaya et al., 2010; Steinweg, Dallas, & Rea, 2011; Puente, Furlong, Gallardo, Méndez, & McKenney, 2013) provided evidence that FM patients had higher alexithymia scores compared to healthy controls. Moreover, the presence of moderate to severe depression strongly predicted to alexithymia and when the differences in alexithymia

scores were controlled for the BDI, they became insignificant (Steinweg et al., 2011). A number of recent studies (Honkalampi, Hintikka, Laukkanen, Lehtonen, & Viinamaki, 2001; Motan & Gençöz, 2007; Taşkın et al., 2007; Tuzer et al., 2011) revealed that there is a significant relationship between alexithymia and the severity of depression. It has been already explained that this "no word for emotions" condition disrupts appropriate regulation of negative emotions, which leads to elevated adverse mood and increased somatization and pain.

As regard to emotional expressivity and illness behaviors, emotionally non-expressive patients with FM have a tendency to have ineffective illness behaviors such as exaggerating their symptoms or being hypersensitive to nociceptive stimuli (Huber, Suman, Biasi, & Carli, 2009). Furthermore, due to their disrupted ability to identify affect sensations, they tend to misinterpret emotional arousal as signs of medical symptoms. Moreover, there is little doubt that one of the most frequently used defensive reactions is somatization for these patients (Tuzer et al., 2011). Another likely explanation is that the somatizing nature of FM patients prevents them from experiencing their emotions explicitly. Recent evidence suggested that internalized and suppressed anger account for pain as well as depression (Sayar, Gulec, & Topbas, 2004). Thus, considering that chronic pain patients including FM have a tendency to suppress their anger or hostility may lead to increased sensitivity to pain and depression (Okifuji, Turk, & Curran, 1999).

In conclusion, the studies conducted with FM patients revealed that pain severity, neuroticism and emotional expressivity play an important role in predicting patient's depression.

1. 3. Fibromyalgia and Marital Satisfaction

A comprehensive theme defined by Söderberg and Lundman (2011), fibromyalgia as the choreographer of activities and relationships, refers to compulsory transitions in major life areas because of the patients' inabilities. Family life is the one of the most prominent changing domains with transitions of roles and responsibilities. In a semi-structured interview study (Wuytack, & Miller, 2011), the

most of women patients expressed feelings of guilt since their partners have to be more responsible for ordinary household and they give their children limited care. As a consequence of lack of strength, the patients could not participate family activities that brought about irritation and frustration for the whole family (Söderberg, Strand, Haapala, & Lundman, 2002). Not surprisingly, considerable amount of the patients reported deterioration in marital relationship resulting in break-up or divorce whereas others noticed the significant role of their husbands as a supporter. In a similar manner, a number of studies (e.g, Reich, Olmsted, & Puymbroeck, 2006; Marcus, Richards, Chambers, & Bhowmick, 2013) revealed that higher fibromyalgia severity was significantly related with low relationship satisfaction.

Similarly, an interview study investigating the meaning of being partners to men living with FM pain revealed that of partners are faced with many difficulties. For instance, their spouses have restricted social life. The partners reported that if they did not try to involve men with FM in activities they enjoyed, e.g., fishing, men easily became passive. Moreover, there has been left no choice but take the main responsibility for the family. Besides, their partners also pointed out their feelings of being obliged to show constant consideration as well as compassion and simultaneously the need of distance. Since the men look healthy and avoided expressing how ill they felt, partners thought that other people undervalued their pain-related difficulties. Due to men's reluctance to share their pain, their partner felt frustration and loneliness (Paulson, Norberg, & Söderberg, 2003). Furthermore, a remarkable research (Baanders & Heijmans, 2007) explored that female partners of patients with chronic illness experienced more exhaustion in aforementioned life domains than male partners. This finding may be interpreted as reciprocal relationship between women's tendency to burnout and males' reluctance to express their pain. Although the major amount of the FM literature is comprised of female dominant research, another qualitative research (Paulson, Danielson, & Söderberg 2002) with narrative interviews described the meaning of the men's experience of living with pain of FM type. It was indicated that pain makes them irritable and they easily became angry toward their family.

Fibromyalgia can be evaluated as a dyadic problem since the taken-for-grantedness of daily living is interrupted for both the patient and the partner; however, they have to learn to live with the changes brought about by FM (Reich et al., 2006). Indeed, with regard to degree that spouses adjust to their partners' illness determines their own well-being as well as the patients'. After all, considerable evidence showed that spouses had decreased health scores (Haley, Levine, Brown, Berry, & Hughes 1987; Bigatti & Cronan, 2002) and elevated rates of chronic illnesses (Pruchno & Potashnik, 1989) as well as emotional distress (Schulz et al., 1990). Several lines of research (Söderberg & Norberg, 1995; & Neumann & Buskila, 1997) suggested that the relatives and spouses of patients with FM suffer from physical and psychological problems, decreased quality of life, and physical dysfunction. In a consistent manner, husbands of patients with FM showed significantly more dissatisfaction with different life dimensions compared to healthy controls. Furthermore, they reported higher levels of depression, loneliness and subjective stress. As a result of dysfunction in patients' working life; the husbands were also forced to take responsibility for financial burden all alone (Bigatti, & Cronan, 2002). Given the overall deteriorative nature of FM, the partner's sense of burden was associated with the higher levels of FM patients' pain and disability. Additionally, elevated levels of partner burden were related to decreased levels of partner support leading to lower relationship satisfaction for FM group (Reich et al., 2006).

Although many couples who marry with the dream of living happily ever after, different personality traits seem to predispose some to an ending far less romantic. Indeed, recent studies revealed that neuroticism as the personality trait that lead partners to be less satisfied with their relationships (Fisher & McNulty, 2008). There is a line of existing literature (Javanmard & Garegozlo, 2013; Najarpourian et al., 2012; Gattis, Berns, Simpson, & Christensen, 2004; Karney & Bradbury, 1997) that higher level of spousal neuroticism was linked to lower marital satisfaction. Moreover, both husbands' and wives' neuroticism measured at the beginning of the study was a significant predictor of possible latter of divorce (Kelly & Conley, 1987). The association between neuroticism and marital satisfaction can be explained by intrapersonal models that neurotic personalities are less satisfied with their

relationships since they perceive life events more negatively (Fisher & McNulty, 2008). To date, no studies have investigated the effect of personality when the patient's FM is considered as a factor in patient's marital satisfaction. In consideration of the link between neuroticism and FM as stated in the previous section, the study did also examine what extent the impact on the partner's marital satisfaction could be attributed mainly to neuroticism when the effect of emotional expressivity is controlled for.

A number of disciplines (e.g., emotionally-focused marital therapy, counseling psychology, developmental psychology, personality psychology, and communication science) have explored the significance of emotional expressivity, or lack of emotional expressivity, in relationships. When the partners interact with each other, they are more likely to involve in a mutual "emotional education" process of emotionally adjusting to each other's style of expression and feedback. The more the couples develop a mutual process of becoming educated or understanding the emotional expressions of each other, the more likely they will be satisfied with their relationship. However, when one partner has difficulty with emotional expressivity, it is supposed that this reciprocal process is deteriorated, which in turn leads to less relationship satisfaction (Yelsma & Marrow, 2009). Indeed, the core dimension of a satisfying romantic relationship is an ability to realize one's own emotions and express them to partner (Carton, Kessler, & Pape 1999). However, emotional non-expressiveness is associated with lower levels of both relationship and sexual satisfaction (Humphreys, Wood, & Parker, 2009). In the light of pain-related literature, it has been suggested that emotional non-expressiveness of patients with FM is related to marital shortcomings in many domains of family life bringing about lower marital satisfaction. With respect to the abovementioned difficulties, this study expected that patients who have high levels of pain severity and emotional non-expressiveness will report low marital satisfaction.

To sum up, when pain severity increases, FM patients have to face with various interpersonal difficulties because of their incapability. In regard to personality traits, emerging evidence revealed that partners' neuroticism predicts worse marital satisfaction. Since neuroticism is needed for emotional awareness and

regulation, it is supposed that when FM patients who have neurotic personality characteristics identify and verbalize their related emotions, higher scores of marital satisfaction will be reported.

1. 4. Aims of the Study

Previous studies have provided plentiful evidence about what extent dysfunctions of FM patients in everyday life are determined by multilevel factors. Moreover, a biopsychosocial model gives deeper understanding of continuous journey of people with FM (Bruckenthal, 2005). Previous findings briefly mentioned above showed that both the amount of pain patients have and neuroticism are associated with depressive symptoms (Güleç, Sayar, & Güleç, 2007). Moreover, considering coping strategies, the prevalence of alexithymic personality should be kept in mind for this group (Kaya et al., 2010). Although the literature indicated a significant association between depression and relationship satisfaction for FM patients (Marcus, Richards, Chambers, & Bhowmick, 2013), the relationship neuroticism and marital satisfaction and how it is modulated by emotional expressivity have not been examined yet.

Concerning FM-related literature summarized above, the aim of the current study is to examine the predictors of depression as well as marital satisfaction for FM patients. Indeed, the association of pain severity and neuroticism with depression and marital satisfaction will be studied. In addition, this study was designed to examine the role of emotional expressivity (alexithymia and emotional non-expressiveness) as a potential moderator of the relationships mentioned before. In clinical context, the understanding of possible relationships mentioned above can be crucial to plan the therapeutic process for chronic pain patients with emotional non-expressiveness differently since patients with FM tend to express their difficulties with somatization. Besides, demographic variables will be considered to replicate previous findings.

Based on these arguments, the following research questions arose in our study:

- Is pain severity related to depression in FM patients?
- Is neuroticism related to depression FM patients?
- Does the effect of pain severity on depression change depending on emotional expressivity?
- Does the effect of neuroticism on depression change depending on emotional expressivity (alexithymia and emotional non-expressiveness)?
- Is pain severity related to marital satisfaction FM patients?
- Is neuroticism related to marital satisfaction FM patients?
- Does the effect of pain severity on marital satisfaction change depending on emotional expressivity (alexithymia and emotional non-expressiveness)?
- Does the effect of neuroticism on marital satisfaction change depending on emotional expressivity (alexithymia and emotional non-expressiveness)?

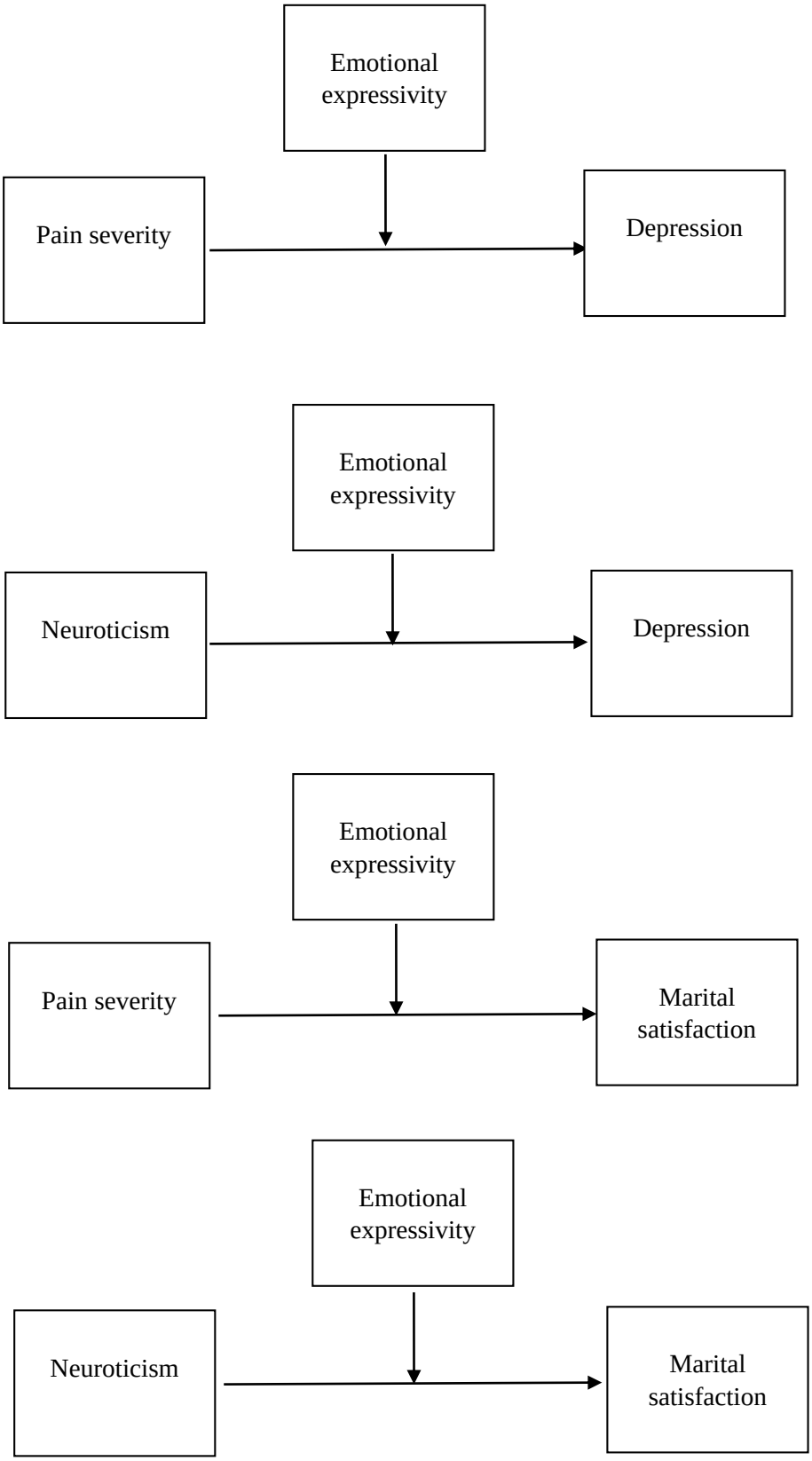


Figure 1.2.

The Proposed Models for Moderating Role of Emotional Expressivity

Concerning research questions mentioned above, the following hypotheses are proposed (See Figure 1.2). For depression, (1.a.) FM patients who have high pain severity will have higher depression; (1.b.) FM patients who have high neuroticism will have higher depression; (1.c.) among the FM patients who have high pain severity and low emotional expressivity will have higher depression than the ones with high pain severity and high emotional expressivity; (1.d.) among the FM patients who have high neuroticism and low emotional expressivity will have higher depression than the ones with high neuroticism and high emotional expressivity.

For marital satisfaction; (2.a.) FM patients who have high pain severity will have lower marital satisfaction; (2.b.) FM patients who have high neuroticism will have lower marital satisfaction; (2.c.) among the FM patients who have high pain severity and low emotional expressivity will have lower marital satisfaction than the ones with high pain severity and high emotional expressivity; (2.d.) among the FM patients who have high neuroticism and low emotional expressivity will have lower marital satisfaction than the ones with high neuroticism and high emotional expressivity.

CHAPTER II

METHOD

2.1. Participants

Totally, 91 married fibromyalgia (FM) patients (80 women and 11 men), who had previously received a diagnosis, participated in the study (mean age = 37.35, *SD* = 8.08, range 25–59). Participants were from different cities in Turkey. The participants have had a history of fibromyalgia for minimum of 2 months and a maximum of 336 months (*M* = 86.90, *SD* = 72.79). The demographic characteristics of the Study 1 participants can be seen in Table 1.

2.2. Measures

The questionnaire set included demographic information form, Widespread Pain Index and Symptom Severity Scale, Visual Analogue Scale, Basic Personality Traits Inventory, Toronto Alexithymia Scale, Type C Behavior Scale, Beck Depression Inventory, and Relationship Happiness Scale. In particular, emotional expressivity was measured by two independent tests. Since alexithymia is a pathological condition, Toronto Alexithymia Scale was used to examine patients' alexithymia levels. However, Type C Behavior Scale measures emotional non-expressiveness, which is associated with emotion-related skills.

Table 2.1.

Demographic Characteristics of the Participants

	Frequency	Percentage (%)
Gender		
Men	11	12.10
Women	80	87.90
Education Level		
Doctorate degree	2	2.20
Master degree	7	7.70
University	48	52.70
High school	30	33.00
Primary school	4	4.40
Working Status		
Working	48	52.70
Nonworking	43	47.30
SES		
Low	4	4.40
Middle	79	86.80
High	8	8.80
Having children		
Yes	71	78.00
No	20	22.00
History of chronic illness diagnosis		
Yes	63	69.20
No	28	30.80
History of psychiatric diagnosis		
Yes	48	52.70
No	43	47.30
Receiving treatment for FM		
Yes	40	44.00
No	50	54.90

2.2.1. Demographic Information Form

The questions of the demographic information form consisted of an e-mail address, gender, age, marital status, education level, socioeconomic status, occupational status, duration of FM symptoms, date of FM diagnosis,

having children, and history of psychiatric and chronic illness diagnosis (See Appendix A).

2.2.2. Widespread Pain Index and Symptom Severity Scale

The American College of Rheumatology (ACR) preliminary diagnostic criteria for fibromyalgia in 2010 consists of two scales, the Widespread Pain Index (WPI) and the Symptom Severity (SS) scale (See Appendix B). The widespread pain questionnaire was employed to assess patients' pain or tenderness over the previous week in the shoulder girdle, hip, jaw, upper back, lower back, upper arm, upper leg, chest, neck, abdomen, lower arm, and lower leg. It includes grading the right and the left side of the body separately. Each item was scored as either 0 or 1; so the minimum total score was 0 and the maximum total score was 19 (Wolfe et al., 2011).

The SS is comprised of the items indicating the severity of fatigue, trouble thinking or remembering, and waking up tired (unfreshed) over the previous week by using the following scale: 0 = no problem; 1 = slight or mild problems, generally mild or intermittent; 2 = moderate, considerable problems, often present and/or at a moderate level; and 3 = severe, continuous, life-disturbing problems. The scale also included yes/no items questioning patients about pain cramps in the lower abdomen, depression, or headache during previous 6 months. The minimum and maximum scores ranged between 0 and 12 (Wolfe et al., 2011).

The diagnostic criteria for FM are met if the following 3 conditions occur (Wolfe et al., 2011). (1) the WPI ≥ 7 and the SS ≥ 5, or the WPI is 3–6 and the SS ≥ 9; (2) symptoms have been present at a similar level for at least 3 months; and (3) the patients do not have a disorder that would otherwise explain the pain. In the present study, it was used to confirm FM diagnosis.

2.2.3. Visual Analogue Scale

Visual Analogue Scale (VAS) was developed by Price, McGrath, Rafii, and Buckingham (1983), and it is a reliable and valid measure to examine the pain severity of patients (See Appendix C). Patients are asked to

rate their pain on a 10 cm scale, anchored at 0 = no pain and 10 = worst pain imaginable. The numerical value marked by patients indicates the severity of their pain. The reliability of VAS was found to be ranging between .60 and .77 (Boonstra et al., 2008).

2.2.4. Basic Personality Traits Inventory

Basic Personality Traits Inventory consisting of 45 adjectives was applied to participants (See Appendix D). It was developed by Gençöz and Öncül (2012) in order to assess different personality traits in Turkish culture. To examine validity of the inventory, correlations of several scales (Rosenberg Self Esteem Scale, Beck Depression Inventory, State-Trait Anxiety Inventory, Liebowitz Social Anxiety Scale, Ways of Coping Inventory, Positive-Negative Affect Scale, Multidimensional Scale of Perceived Social Support, and Reassurance Seeking Scale) with the six factors of the inventory were assessed. The inventory was shown to have convergent, divergent, and discriminant validities. The inventory includes 6 subscales, namely extraversion-introversion (8 items), conscientiousness (8 items), agreeableness (8 items), neuroticism-emotional stability (9 items), openness/intellect (6 items), and negative valence (6 items). The items of the test are scored on a 5-point Likert type scale ranging from 1 (this characteristic does not represent me at all) to 5 (this characteristic represents me very well).

The internal consistency reliability estimated by Cronbach's alpha of the total scale ranges between 0.71 and 0.89. For the present sample, the internal consistency reliability of the inventory was .77.

2.2.5. Toronto Alexithymia Scale

The Toronto Alexithymia Scale (TAS-26) developed by Taylor and colleagues (1992) was used (See Appendix E) in order to measure emotional expressivity of the participants. It is a 26-item self-report instrument rated on a 5-point Liker-type scale ranging from 1 to 5, and the total scores range between 20 and 130. Scores those are equal to or larger than 61 indicates

alexithymia. It has four subscales measuring different facets of alexithymia; difficulty in identifying one's feelings and in distinguishing between emotions and bodily sensations (e.g., “I am often confused about what emotion I am feeling”), difficulty in describing one's feelings (e.g., “It is difficult for me to find the right words for my feelings”), a tendency towards externally oriented thinking (e.g., “I prefer to just let things happen rather than to understand why they turned out that way”), and the ability of imagining (e.g., “I am not much of a daydreamer”). The internal consistency reliability estimated by Cronbach’s alpha of the total scale was .79. The validity and reliability of the Turkish version of the TAS-26 was conducted by Dereboy (1990). The Turkish version demonstrates good internal consistency (Cronbach’s alpha = 0.70) as well as good convergent and concurrent validities. For the present sample, the internal consistency reliability of the scale was .74.

2.2.6. Type C Behavior Scale

Type C Behavior Scale (TCBS) developed by Kurrass (2004) measures self-sacrificing behaviors (7 items) and emotional non-expressiveness (5 items) (See Appendix F). It consists of 12 items scored on a 4-point Likert type scale and the answers range between absolutely describes me (4) and not describes me (1). For self-sacrificing behaviors and emotional non-expressiveness subscales, Cronbach’s alpha values were 0.77 and 0.66, respectively. Turkish adaptation of the test was conducted by Bozo, Yılmaz, and Tathan (2012). The internal consistency reliability of the whole scale was 0.80 and the internal consistency reliabilities of subscales were ranged between 0.80 and 0.86. In the present study, only emotional non-expressiveness subscale was used and its internal consistency reliability for the present sample was .62.

2.2.7. Beck Depression Inventory

Beck Depression Inventory (BDI) was used to examine the severity of depressive symptoms of the FM patients (See Appendix G). It was developed by Beck, Rush, Shaw, and Emery (1979) to assess the severity of depression.

The reliability of scale measured by alpha coefficient was reported as .86 for clinical population and .81 for nonclinical population (Beck, Steer, & Garbin, 1988). Each of 21 symptom items includes 4 response choices, and patients were asked to indicate the most appropriate statement reflecting related feeling by considering the last week. Each item is rated on a 4-point scale ranging from 0 to 3, and the possible maximum total score is 63. Higher total scores indicate more severe depressive symptoms, and scores over 17 was accepted the cut-off point for the diagnosis of depression. Turkish version of BDI was shown to be valid and reliable (Hisli, 1998). For the present sample, the internal consistency reliability of the inventory was .87.

2.2.8. The Relationship Happiness Scale

The Relationship Happiness Scale (RHS; Fletcher, Fitness, & Blampied, 1990) was applied to measure marital satisfaction of participants (See Appendix H). The 6-item scale gives information about the perception of love, happiness, general satisfaction, relationship stability, and commitment on a 5-point Likert scale with anchors ranging from strongly disagree (1) to strongly agree (5). The Turkish adaptation of scale was studied by Tutarel-Kışlak (2002). The internal consistency, split-half reliability and test re-test reliability scores were found as .90, .80, and .86, respectively. For the present sample, the internal consistency reliability of the scale was .96.

2.3. Procedure

First of all, necessary approval was taken from Middle East Technical University Human Subjects Ethics Committee. Afterwards, a questionnaire set including the instruments mentioned above was prepared and announced to participants. The administration of the instruments was carried out via an online survey hosted by surveymonkey.com that was available from to September 2014 to November 2014. At the first page of the website, there was an informed consent form, on which the participants must confirm their voluntary participation to continue with the survey. Responses were completely anonymous, with no identifiers collected.

2.4. Data Analysis

To see the differences among the levels of the demographic variables several t-test analyses and one-way Analysis of Variances (ANOVAs) were run. To test the moderation models, which was derived from the original model of Baron and Kenny (1986), multiple regression analyses were run. Statistical analyses were run by using SPSS (Statistical Package for Social Sciences) (Green, Salkind, & Akey, 1997). In order to test all of the hypotheses of the main study, 8 moderation models were tested.

CHAPTER III

RESULTS

3.1. Group Comparisons

To understand whether participants belonging to different levels of demographic variables scored differently in terms of the dependent variables, a series of independent samples *t*-test analyses and a one-way Analysis of Variances (ANOVAs) were run. For gender, education level, working status, having children, history of chronic illness diagnosis, history of psychiatric diagnosis, and current treatment independent samples *t*-test analyses were run. For SES, a one-way ANOVA was performed. For all analyses, same dependent variables were entered, which were pain severity, one of big 5 personality traits (neuroticism), alexithymia, emotional non-expressiveness subscale of Type C Behavior Scale, depression, and marital satisfaction. Only significant results were reported.

Men and women were significantly different from each other in terms of marital satisfaction ($t(89) = -2.02$, $p < .05$) and neuroticism ($t(89) = -2.17$, $p < .05$). Women acquired significantly lower scores on marital satisfaction ($m = 19.60$, $sd = 8.31$) than men ($m = 24.81$, $sd = 5.30$). Men obtained significantly higher scores on neuroticism ($m = 33.54$, $sd = 6.45$) than women ($m = 28.40$, $sd = 7.46$) (See Table 3.1).

Table 3.1.

Descriptive Statistics and t-test Results for Gender

		N	Mean	*SD*	*t*(89)
Marital Satisfaction	Women	80	19.60	8.31	-2.02*
	Men	11	24.81	5.30	-2.02*
Neuroticism	Women	80	28.40	7.46	-2.17*
	Men	11	33.54	6.45	-2.17*

Note. *$p < .05$

Education level had two groups. Primary school and high school graduates were combined to constitute the first group, and the second group was composed of university, master's and doctorate program graduates. There were significant differences between these two groups in terms of BDI ($t(89) = 2.13$, $p < .05$), alexithymia ($t(89) = 2.04$, $p < .05$), and emotional non-expressiveness ($t(89) = 2.01$, $p < .05$). First group participants obtained significantly higher depression scores (m = 24.03, sd = 9.99) than the second group participants (m = 19.34, sd = 10.22). First group participants obtained significantly higher scores on alexithymia (m = 71.23, sd = 14.28) than second group participants (m = 66.08, sd = 9.73). First group participants obtained significantly higher scores on emotional non-expressiveness (m = 15.47, sd = 4.60) than second group participants (m = 13.07, sd = 5.97) (See Table 3.2).

Table 3.2.

Descriptive Statistics and t-test Results for Education Level

		N	Mean	*SD*	*t*(89)
BDI	At most high school	34	24.03	9.99	2.13*
	At least university	57	19.34	10.22	2.13*
Alexithymia	At most high school	34	71.23	14.28	2.04*
	At least university	57	66.08	9.73	2.04*
Emotional non-expressiveness	At most high school	34	15.47	4.60	2.01*
	At least university	57	13.07	5.97	2.01*

Note. *$p < .05$

Working status had two groups, namely working and nonworking groups. There was a significant difference between two groups in terms of pain severity ($t(89) = -2.38$, $p < .05$). Nonworking group reported significantly higher pain severity

(*m* = 7.90, *sd* = 2.11) than their working counterparts (*m* = 6.93, *sd* = 1.75) (See Table 3.3).

Table 3.3.

Descriptive Statistics and t-test Results for Working Status

		N	Mean	*SD*	*t*(89)
Pain severity	Working	48	6.93	1.75	-2.38*
	Nonworking	43	7.90	2.11	-2.38*

Note. *$p < .05$

There was a significant difference on marital satisfaction (*t*(89) = -1.96, *p* < .01) and alexithymia (*t*(89) = 2.11, *p* < .05) between participants who had children and who did not. Participants who reported they did not have children had significantly higher scores on marital satisfaction (*m* = 23.35, *sd* = 7.92) than their counterparts who had children (*m* = 19.35, *sd* = 8.06). However, participants who reported they had children had significantly higher scores on alexithymia (*m* = 69.38, *sd* = 12.26) than their counterparts who did not have children (*m* = 63.15, *sd* = 8.79) (See Table 3.4).

Table 3.4.

Descriptive Statistics and t-test Results for Having Children

		N	Mean	*SD*	*t*(89)
Marital Satisfaction	Having children	71	19.35	8.06	-1.96**
	Not having children	20	23.35	7.92	-1.96**
Alexithymia	Having children	71	69.38	12.26	2.11*
	Not having children	20	63.15	8.79	2.11*

Note. *$p < .05$, **$p < .01$

As Table 3.5 demonstrates, participants who had history of psychiatric diagnosis were significantly different from the participants who did not have any psychiatric diagnosis in terms of alexithymia ($t(89) = 2.31$, $p < .05$). Participants who had history of psychiatric diagnosis obtained significantly higher scores on alexithymia ($m = 70.66$, $sd = 12.10$) than participants who did not have any psychiatric diagnosis ($m = 65.04$, $sd = 10.91$).

Table 3.5.

Descriptive Statistics and t-test Results for History of Psychiatric Diagnosis

		N	Mean	*SD*	*t*(89)
Alexithymia	History of Psychiatric diagnosis	48	70.66	12.10	2.31*
	No History of Psychiatric Diagnosis	43	65.04	10.91	2.31*

Note. *$p < .05$

As Table 3.6 shows, there were significant differences between participants who reported they received a treatment for FM and participants who reported they did not in terms of BDI ($t(88) = 2.86$, $p < .01$), marital satisfaction ($t(88) = -2.39$, $p < .05$), and alexithymia ($t(88) = 1.99$, $p < .05$). Participants who reported they received a treatment for FM scored significantly higher on depression ($m = 24.55$, $sd = 10.10$) than participants who did not receive any treatment ($m = 18.50$, $sd = 9.83$). Participants who reported they did not receive any treatment scored significantly higher on marital satisfaction ($m = 21.94$, $sd = 7.84$) than participants who received a treatment. ($m = 17.90$, $sd = 8.10$). Participants who reported they received a treatment scored significantly higher on alexithymia ($m = 70.95$, $sd = 13.36$) than participants who did not receive any treatment ($m = 66.08$, $sd = 9.76$).

Table 3.6.

Descriptive Statistics and t-test Results for Receiving FM Treatment

		N	Mean	*SD*	*t*(89)
BDI	Treatment	40	24.55	10.10	2.86**
	No Treatment	50	18.50	9.83	2.86**
Marital Satisfaction	Treatment	40	17.90	8.10	-2.39*
	No Treatment	50	21.94	7.84	-2.39*
Alexithymia	Treatment	40	70.95	13.36	1.99*
	No Treatment	50	66.08	9.76	1.99*

Note. *$p < .05$, **$p < .01$

3.2. Correlations

Zero order correlation coefficients among the measures and other continuous variables of the study were examined. These variables were age, number of children, duration of diagnosis, perceived controllability of FM, perceived seriousness of FM, pain severity, depression, marital satisfaction, neuroticism, alexithymia, and emotional non-expressiveness. (See Table 3.7)

Age was significantly and positively correlated with number of children ($r = .26$, $p < .05$) and duration of diagnosis ($r = .36$, $p < .01$); and negatively correlated with pain severity ($r = -.22$, $p < .05$) and neuroticism ($r = -.28$, $p < .01$).

Number of children was significantly and positively correlated with depression ($r = .30$, $p < .05$), alexithymia ($r = .37$, $p < .01$), and emotional non-expressiveness ($r = .26$, $p < .05$); and negatively correlated with perceived seriousness of FM ($r = -.28$, $p < .05$) and marital satisfaction ($r = -.37$, $p < .01$). The correlations among other study variables can be seen from Table 3.7.

Table 3.7.

Correlation Coefficients among the Continuous Variables

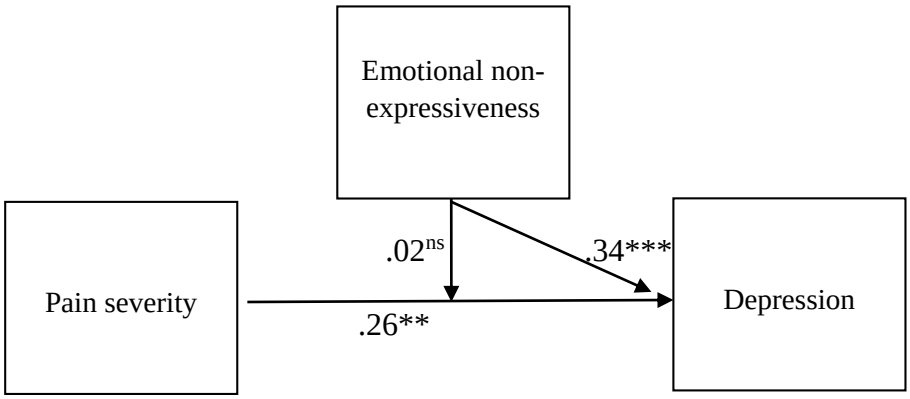
	1	2	3	4	5	6	7	8	9	10	11
1. Age	1										
2. Number of children	.26*	1									
3. Duration of diagnose	.36**	.09	1								
4. Perceived controllability of FMS	.17	.17	.00	1							
5. Perceived seriousness of FMS	-.18	-.28*	-.06	-.31**	1						
6. Pain severity	-.22*	-.03	.16	-.29**	.24*	1					
7. Depression	-.05	.30*	.01	-.26*	.07	.26*	1				
8. Marital satisfaction	-.08	-.37**	-.03	.06	.01	-.16	-.60**	1			
9. Neuroticism	-.28**	-.13	-.12	-.02	.26*	.09	.30**	.04	1		
10. Alexithymia	.06	.37**	.04	-.22*	.10	.09	.44**	-.22*	.18	1	
11. Emotional non-expressiveness	.11	.26*	.06	-.20*	.01	.04	.34**	-.11	-.00	.19	1

Note. For all correlations $N = 91$, $*p < .05$, $**p < .01$

3.3. Regression Analyses for Depression

Four sets of hierarchical multiple regression analyses regressing the depressive symptoms of FM patients were conducted. In each regression model, pain severity or neuroticism was used as the predictor variable; and emotional non-expressiveness or alexithymia was used as the moderator variable in the equation. Before running the regression analyses, as Aiken and West (1991) suggested, the predictors and outcome variables were linearly transformed, by subtracting the respective sample mean from each predictor, and these centered variables were used as predictors and then multiplied for the interaction term. The complete set of predictors in all of these hierarchical multiple regression models are shown in Table 3.8.

In the first regression analysis, pain severity and emotional non-expressiveness were entered in the first step. In the second step, pain severity–emotional non-expressiveness interaction was entered into the equation. The results of the hierarchical multiple regression revealed that pain severity was significantly associated with depression (β = .26, p < .01). Higher pain severity was associated with higher depression among FM patients. Emotional non-expressiveness was significantly associated with depression (β = .34, p < .001), too. Higher emotional non-expressiveness was related with higher depression among FM patients. However, the interaction of pain severity and emotional non-expressiveness was no significantly associated with depression, that is, there was not a moderation effect of emotional non-expressiveness on the relationship between pain severity and depression (β = .02, p = .85). Thus, the moderation hypothesis was not confirmed and the interaction made no significant contribution to the variance explained by pain severity and emotional non-expressiveness (R^2 = .00, $F_{inc}(1,87)$ = .04, p = .84) (See Figure 3.1.).

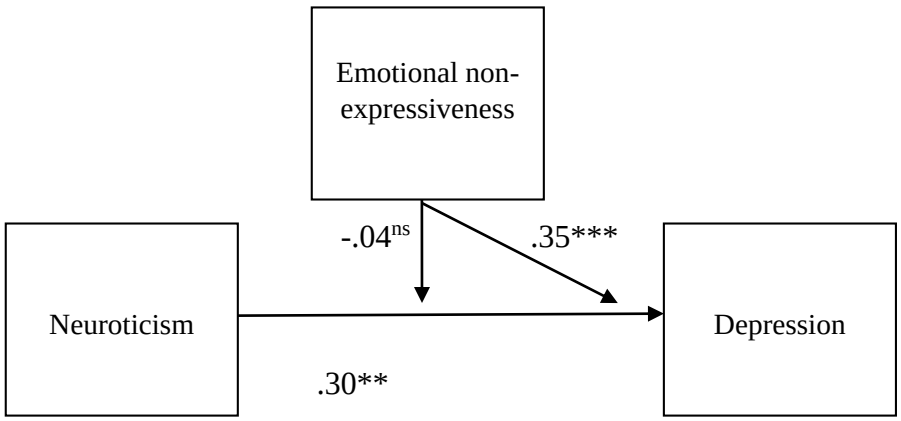


Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Figure 3.1.

The Relationship between the Pain Severity and Depression with Emotional Non-Expressiveness as the Moderator

In the second regression analysis for depression, neuroticism and emotional non-expressiveness were entered in the first step. In the second step, neuroticism–emotional non-expressiveness interaction was entered into the equation. Neuroticism was significantly associated with depression among FM patients ($\beta = .30$, $p < .01$). That is, higher neuroticism was associated with higher depression among FM patients. Emotional non-expressiveness was significantly associated with depression ($\beta = .35$, $p < .001$), too. However, neuroticism–emotional non-expressiveness interaction was not significantly associated with depression of FM patients ($\beta = -.04$, $p = .67$). Thus, the moderation hypothesis was not confirmed and the interaction made no significant contribution to the variance explained by neuroticism and emotional non-expressiveness ($R^2 = .00$, $F_{inc}(1,87) = .18$, $p = .67$) (See Figure 3.2.).

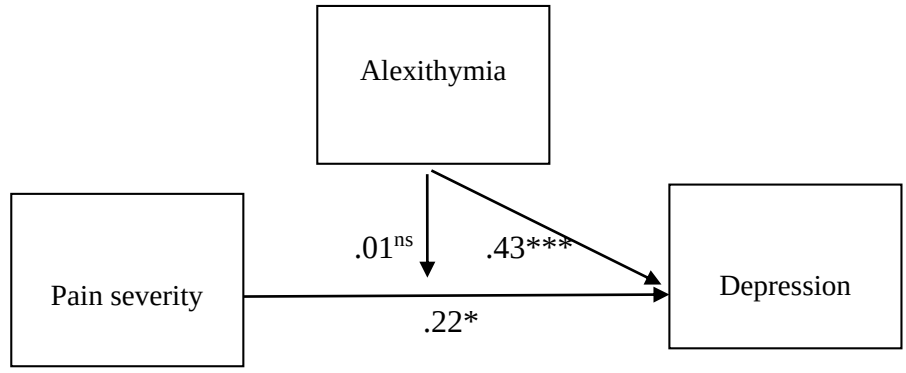


Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Figure 3.2.

The Relationship between the Neuroticism and Depression with Emotional Non-Expressiveness as the Moderator

In the third regression analysis, pain severity and alexithymia were entered in the first step. In the second step, pain severity–alexithymia interaction was entered into the equation. The results of the hierarchical multiple regression showed that pain severity was significantly associated with depression ($\beta = .22$, $p < .05$). Higher pain severity was associated with higher depression among FM patients. Alexithymia was significantly associated with depression ($\beta = .43$, $p < .001$), too. Higher alexithymia was related with higher depression among FM patients. However, the interaction of pain severity and alexithymia was not significantly associated with depression, that is, there was not a moderation effect of alexithymia on the relationship between pain severity and depression ($\beta = .01$, $p = .90$). Thus, the moderation hypothesis was not confirmed and the interaction made no significant contribution to the variance explained by pain severity and alexithymia ($R^2 = .00$, $F_{inc}(1,87) = .01$, $p = .90$) (See Figure 3.3.).

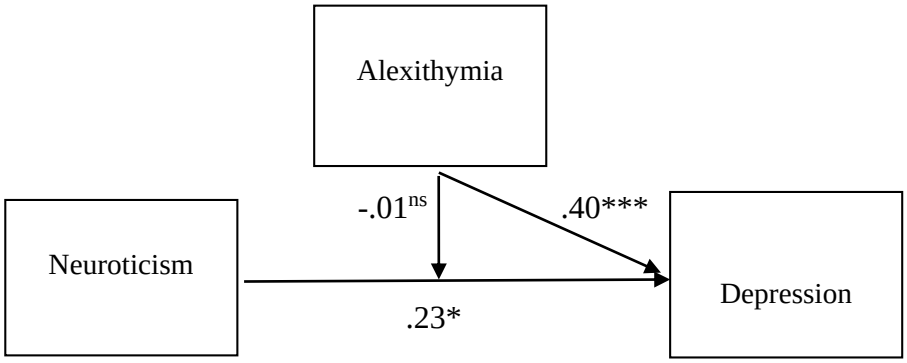


Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Figure 3.3.

The Relationship between the Pain Severity and Depression with Alexithymia as the Moderator

In the last regression analysis for depression, neuroticism and alexithymia were entered in the first step. In the second step, neuroticism–alexithymia interaction was entered into the equation. Neuroticism was significantly associated with depression among FM patients ($\beta = .23$, $p < .05$). That is, higher neuroticism was associated with higher depression among FM patients. Alexithymia was significantly associated with depression ($\beta = .40$, $p < .001$), too. However, neuroticism–alexithymia interaction was not significantly associated with depression of FM patients ($\beta = -.01$, $p = .91$). Thus, the moderation hypothesis was not confirmed and the interaction made no significant contribution to the variance explained by neuroticism and alexithymia ($R^2 = .00$, $F_{inc}(1,87) = .01$, $p = .91$) (See Figure 3.4.).



Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Figure 3.4.

The Relationship between the Neuroticism and Depression with Alexithymia as the Moderator

Table 3.8.

Moderated Regression Models Predicting FM Patients' Depression

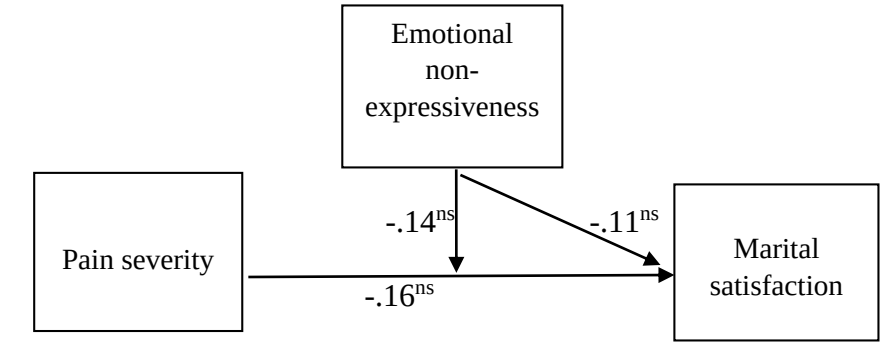
Variable		B	SE	*β*	*ΔR²*	*ΔF*	*d.f.*
Step 1	Pain Severity	1.30	.50	.26**	.07	9.94	2,88
	Emotional non-expressiveness	.63	.18	.34***	.12		
Step 2	Pain Severity X Emotional non-expressiveness	.02	.08	.02^{ns}	.00	6.57	1.87
		B	SE	*β*	*ΔR²*	*ΔF*	*d.f.*
Step 1	Neuroticism	.42	.13	.30**	.10	11.94	2,88
	Emotional non-expressiveness	.64	.17	.35***	.13		
Step 2	Neuroticism X Emotional non-expressiveness	-.01	.02	-.04^{ns}	.00	7.95	1,87
		B	SE	*β*	*ΔR²*	*ΔF*	*d.f.*
Step 1	Pain severity	1.16	.48	.22*	.06	14.57	2,88
	Alexithymia	.37	.08	.43***	.19		
Step 2	Pain severity X Alexithymia	.00	.04	.01^{ns}	.00	9.60	1,87
		B	SE	*β*	*ΔR²*	*ΔF*	*d.f.*
Step 1	Neuroticism	.31	.13	.23*	.06	14.65	2,88
	Alexithymia	.35	.08	.40***	.17		
Step 2	Neuroticism X Alexithymia	-.00	.01	-.01^{ns}	.00	9.67	1,87

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

3.4. Regression Analyses for Marital Satisfaction

Four sets of hierarchical multiple regression analyses regressing the marital satisfaction of FM patients were conducted. In each regression model, pain severity or neuroticism was used as the predictor variable; and emotional non-expressiveness or alexithymia was used as the moderator variable in the equation. Before running the regression analyses, as Aiken and West (1991) suggested, the predictors and outcome variables were linearly transformed, by subtracting the respective sample mean from each predictor, and these centered variables were used as predictors and then multiplied for the interaction term. The complete set of predictors in all of these hierarchical multiple regression models are shown in Table 3.9.

In the first regression analysis, pain severity and emotional non-expressiveness were entered in the first step. In the second step, pain severity–emotional non-expressiveness interaction was entered into the equation. The results of the hierarchical multiple regression showed that the association between pain severity and marital satisfaction was not significant (β = -.16, p = .12). Emotional non-expressiveness was not significantly associated with marital satisfaction (β = -.11, p =.28). The interaction of pain severity and emotional non-expressiveness was not significantly associated with marital satisfaction, that is, there was no a moderation effect of emotional non-expressiveness on the relationship between pain severity and marital satisfaction (β = -.14, p = .18). Thus, the moderation hypothesis was not confirmed and the interaction made no significant contribution to the variance explained by pain severity and emotional non-expressiveness (R^2 = .02, $F_{inc}(1,87) = 1.81$, p = .85) (See Figure 3.5.).



Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Figure 3.5.

The Relationship between the Pain Severity and Marital Satisfaction with Emotional Non-Expressiveness as the Moderator

In the second regression analysis for marital satisfaction, neuroticism and emotional non-expressiveness were entered in the first step. In the second step, neuroticism–emotional non-expressiveness interaction was entered into the equation. Neuroticism was not significantly associated with marital satisfaction among FM patients (β = .04, p = .68). Emotional non-expressiveness was not significantly associated with marital satisfaction (β = -.12, p = .26). Neuroticism–emotional non-expressiveness interaction was not significantly associated with marital satisfaction of FM patients (β =.-.06, p = .57). Thus, the moderation hypothesis was not confirmed and the interaction made no significant contribution to the variance explained by neuroticism and emotional non-expressiveness (R^2 = .00, $F_{inc}(1,87)$ = .31, p = .85) (See Figure 3.6.).

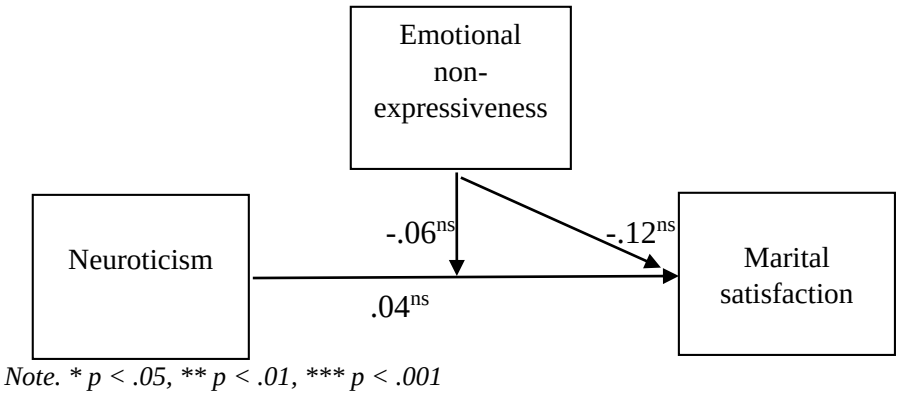
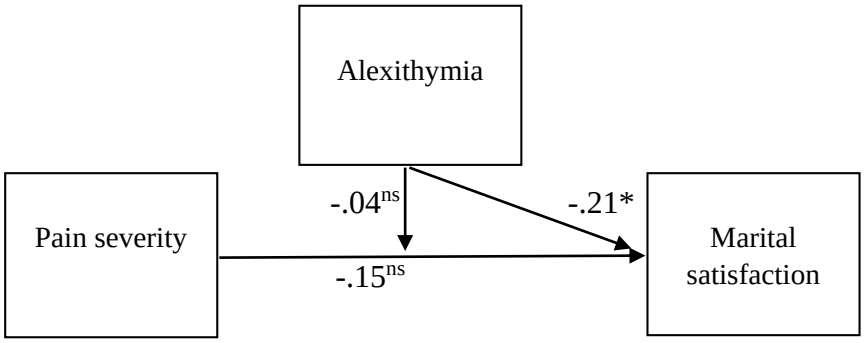


Figure 3.6.

The Relationship between the Pain Neuroticism and Marital Satisfaction with Emotional Non-Expressiveness as the Moderator

In the third regression analysis, pain severity and alexithymia were entered in the first step. In the second step, pain severity–alexithymia interaction was entered into the equation. The results of the hierarchical multiple regression showed that pain severity was not significantly associated with marital satisfaction (β = -.15, p = .16). However, alexithymia was significantly associated with marital satisfaction (β = -.21, p < .05). Higher alexithymia was related with lower marital satisfaction among FM patients. The interaction of pain severity and alexithymia was not significantly associated with marital satisfaction, that is, there was not a moderation effect of alexithymia on the relationship between pain severity and marital satisfaction (β = -.04, p = .73). Thus, the moderation hypothesis was not confirmed and the interaction made no significant contribution to the variance explained by pain severity and alexithymia (R^2 = .00, $F_{inc}(1,87)$ = .12, p = .85) (See Figure 3.7.).

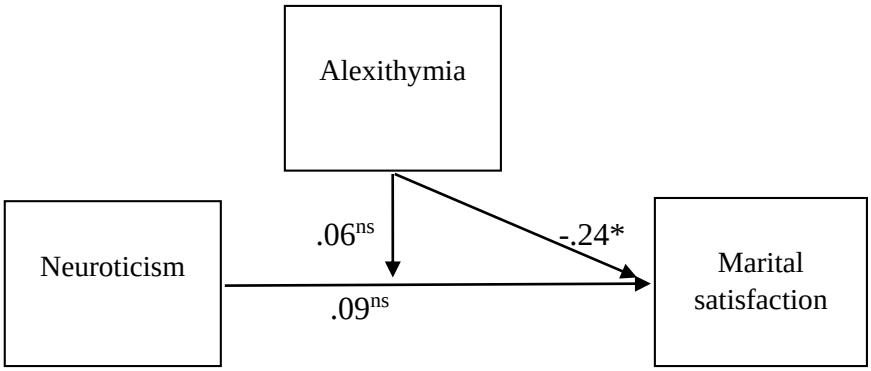


*Note. * p < .05, ** p < .01, *** p < .001*

Figure 3.7.

The Relationship between the Pain Severity and Marital Satisfaction with Alexithymia as the Moderator

In the last regression analysis for marital satisfaction, neuroticism and alexithymia were entered in the first step. In the second step, neuroticism-alexithymia interaction was entered into the equation. Neuroticism was not significantly associated with marital satisfaction among FM patients (β = .09, p = .40). However, alexithymia was significantly associated with marital satisfaction (β = -.24, p < .05). Higher alexithymia was related with lower marital satisfaction among FM patients. Neuroticism- alexithymia interaction was not significantly associated with marital satisfaction of FM patients (β = -.06, p = .57). Thus, the moderation hypothesis was not confirmed and the interaction made no significant contribution to the variance explained by neuroticism and alexithymia (R^2 = .00, $F_{inc}(1,87)$ = .32, p = .85) (See Figure 3.8.).



*Note. * p < .05, ** p < .01, *** p < .001*

Figure 3.8.

The Relationship between the Neuroticism and Marital Satisfaction with Alexithymia as the Moderator

Table 3.9.

Moderated Regression Models Predicting FM Patients' Marital Satisfaction

Variable		B	SE	*β*	*ΔR²*	*ΔF*	*d.f.*
Step 1	Pain Severity	-.68	.43	-16^{ns}	.02	1.89	2,88
	Emotional non-expressiveness	-.16	.15	-.11^{ns}	.01		
Step 2	Pain Severity X Emotional non-expressiveness	-.09	.07	-.14^{ns}	.02	1.88	1,87
		B	SE	*β*	*ΔR²*	*ΔF*	*d.f.*
Step 1	Neuroticism	.05	.12	.04^{ns}	.00	.72	2,88
	Emotional non-expressiveness	-.17	.15	-.12^{ns}	.01		
Step 2	Neuroticism X Emotional non-expressiveness	-.01	.02	-.06^{ns}	.00	.58	1,87
		B	SE	*β*	*ΔR²*	*ΔF*	*d.f.*
Step 1	Pain severity	-.61	.43	-.15^{ns}	.02	3.47	2,88
	Alexithymia	-.15	.07	-.21*	.04		
Step 2	Pain severity X Alexithymia	-.01	.04	-.04^{ns}	.00	2.33	1,87
		B	SE	*β*	*ΔR²*	*ΔF*	*d.f.*
Step 1	Neuroticism	.09	.11	.09^{ns}	.00	2.75	2,88
	Alexithymia	-.17	.07	-.24*	.05		
Step 2	Neuroticism X Alexithymia	.00	.01	.06^{ns}	.00	1.93	1,87

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Table 3.10.

The Results of the Moderation Analyses

IV	Moderator	DV	Moderation
Pain Severity	Emotional Non-Expressiveness	Depression	No
Pain Severity	Alexithymia	Depression	No
Neuroticism	Emotional Non-Expressiveness	Depression	No
Neuroticism	Alexithymia	Depression	No
Pain Severity	Emotional Non-Expressiveness	Marital Satisfaction	No
Pain Severity	Alexithymia	Marital Satisfaction	No
Neuroticism	Emotional Non-Expressiveness	Marital Satisfaction	No
Neuroticism	Alexithymia	Marital Satisfaction	No

CHAPTER IV

DISCUSSION

Fibromyalgia (FM) is a syndrome characterized by chronic and mostly non-remitting musculoskeletal pain with tenderness, rigidity, cognitive, and mood disturbances. Its etiology and pathogenesis have not been fully clarified yet (Martinez et al., 2013). In spite of the extensive research, psychological problems encountered among fibromyalgia patients remains still elusive (Malt, Olafsson, Lund, & Ursin, 2002). FM studies proposed various physiological and psychological factors, modulating variables (e.g., emotional expressivity), and outcomes in an attempt to understand multiple mechanisms of FM on patients' depression and marital satisfaction. The aim of the present study was to explore the association of pain severity and neuroticism with depression and marital satisfaction, and the moderator role of emotional expressivity on those relations. The Biopsychosocial Model (Engel, 1980) was used as a conceptual framework for the proposed models. Results, clinical implications, and limitations of the study; and recommendations for future studies were discussed in the following sections.

4.1. Results of the Study

The findings of the study would be discussed in the light of the literature. The psychometric properties of the scales, the differences between the levels of demographic variables in terms of the study variables, and the moderation models were presented in this section.

4.1.1. The Differences between the Levels of Demographic Variables in terms of Study Variables

When gender differences were examined, it was found that male patients differ from female patients in terms of neuroticism. The results suggested that male patients were more neurotic than their female counterparts. In fact, this finding was not consistent with the literature. Recent studies (Costa, Terracciano, & McCrae, 2001; Chapman, Duberstein,

Sörensen, & Lyness, 2007) have demonstrated that women score higher than men on neuroticism. This result might be explained by the disproportionately low number of male patients in the current study. A number of studies conducted with fibromyalgia patients from various cultures and ethnicity have confirmed that almost 90% of patients with FM are women. This female dominance is attributed to the fact that women are more likely to consult a physician than men and are more likely to be seen in a clinic (Yunus, 2001). In that sense, the high percentage of female patients in this study is comparable to the findings in other studies. However, the variation among the participants was limited due to this unproportional representation. Additionally, congruent with the chronic pain literature (e.g., Saarijarvi, S., Rytökoski, U., & Karppi, S. L., 1990), a significant relation between gender of FM patients and marital satisfaction was also found. Specifically, marital satisfaction in female FM patients was lower than their male counterparts. This difference between men and women might be explained by the imbalance between the women's will to do patterns of daily living and their lack of strength. It was reported that women's daily life (e.g., incapability of households), family life (e.g., difficulties with child care) and work life (e.g., leaving their job) changed drastically from an active to a more passive life style, which lead to feelings of inadequateness and marital dissatisfaction (Söderberg & Lundman, 2001).

Another demographic variable examined in relation to outcome variables was educational status. Primary school and high school graduates were combined to constitute the first group, and university, master and doctorate program graduates were combined to constitute the second group. Results suggested that the first group had higher scores on depression than the second group indicating that education provided people a more positive psychological well-being. It was also found that education level was related with emotional non-expressiveness and alexithymia among FM patients. This relationship between emotional awareness and educational level is consistent with the conceptualization of emotional awareness as a domain of cognitive

development, which is strongly influenced by environmental factors (Lane, Sechrest, & Riedel, 1998).

Participants from different levels of SES were not significantly different from each other in terms of any study variables. A possible explanation for this result might be the majority of the participants in the present study reported their SES as middle class limiting equal representation of different classes.

Pain and fatigue are important factors restricting FM patients' working life considerably. Majority of patients quit working because of their physical complaints (Wolfe et al., 1997c). The present study yielded similar results with the literature in terms of working conditions of FM patients. More specifically, it was found that there was a difference between the working and non-working group on VAS scores. Non-working group had higher VAS scores than working group. In that sense, the pain severity might be suggested as a factor playing a role on this finding.

Another demographic variable found to be related with the alexithymia was history of psychiatric diagnosis. Participants who indicated that they had at least one psychiatric diagnosis scored higher on alexithymia than the ones who had no psychiatric diagnosis. This result was congruent with recent findings (e.g., Tuzer et al., 2011; Tella & Castelli, 2013) revealing positive associations among alexithymia, somatization, depression, anxiety, and hostility in FM group. A possible interpretation is that the inadequacy of patients with high levels of alexithymia to identify appropriately their own feelings may limit verbal communication of psychological distress with a potentially negative effect on depression and anxiety levels.

In line with documented results presented above, current results revealed that FM patients who reported that they received treatment for FM before were more likely to experience alexithymia and depressive symptoms as compared to patients who did not receive any treatment. This difference might be explained by the assumption that the patients who experience more affect disturbances and difficulties in expressing their emotions to individuals around them might seek professional help just to be understood by another

person. In terms of marital satisfaction, patients who did not receive any treatment for FM reported more satisfied marital relationships than participants who received treatment. This difference might be due to the lower intensity and higher controllability of the symptoms. Besides, these patients might have coped with their disease better than the patients who received treatment. In either case, their disease might not have interfered with their marital satisfaction.

Having children was also found to be related with marital satisfaction. Participants who had children had lower scores on marital satisfaction than patients who had no children. Similarly, in the literature many studies (e.g., Twenge, Campbell, & Foster, 2004) revealed that parents report lower marital satisfaction as compared with nonparents. A possible explanation of this finding might be that FM patients with children were likely to have more responsibilities regarding their family life in spite of their incapability in many life areas. As a result, they may feel more adverse feelings and dissatisfaction in their marriage (Söderberg & Lundman, 2001).

4.1.2. Predictors of Depression

The effects of two variables, namely pain severity and neuroticism, on depression and the role of emotional expressivity (alexithymia and emotional non-expressiveness) on these relationships as a moderator were investigated. The regression analyses showed that when FM patients experience more pain, their depressive symptoms tended to increase. As mentioned before, patients suffer from decreased quality of life in many areas due to their pain; therefore, they might be more likely to experience depressive mood.

The findings of regression analyses pointed out that depression tended to be higher when FM patients were more likely to have both emotional non-expressiveness and alexithymia. This finding is consistent with previous empirical studies revealing that having difficulty in communicating feelings is a significant predictor for depression (e.g., Gençöz & Motan, 2007). In some studies (e.g., Sayar, Bilen, & Arıkan, 2001; Sayar, Gulec, & Topbas, 2004), a significant association between non-expressed anger and chronic pain was

found. This may be related that suppressed and internalized anger in FM patients might be a significant factor for the occurrence of depression. Besides, the findings showed that alexithymia and ruminative thinking style are two dysfunctional emotion regulation strategies associated with depression (Schiena, Luminet, & Philippot, 2011). Since FM patients cannot express their feelings, they may be more likely to experience repetition of thoughts, intrusion and search for meaning. Thus, this thinking style may increase the risk of depressive symptoms.

The findings of regression analyses indicated that as the neurotic characteristics of FM patients increase, their depressive symptoms tend to increase, as well. This finding was well supported by the Big Five studies indicating that there is a strong link between neuroticism and depression (Malin & Littlejohn, 2011). Since the nature of neuroticism involves a tendency to have adverse emotional states and sensitivity to stress, neurotic people are more likely to respond to stressors with disproportionate negative affect. In other words, neuroticism is closely associated with the intensity of distress a person experiences (Yoon, Maltby, & Joormann, 2013). Not surprisingly, neuroticism may become a strong risk factor for experiencing depressive symptoms. Moreover, many findings (e.g., Connor-Smith & Flachsbart, 2007; Shoji, Harrigan, Woll, & Miller, 2010) showed that personality may directly impact coping strategies of individuals. Specifically, neuroticism was associated with problematic strategies including mental disengagement, suppression of competing activities, avoidant coping, and emotion-focused coping. In the light of this information, neurotic FM patients may be more prone to depression because of their dysfunctional coping styles in response to pain. Besides, there is a relationship between personality and social support. Indeed, neurotic people tend to have more difficulty making use of social support to maintain mental wellbeing, however; extraverted people are more capable of utilizing available support (McHugh & Lawlor, 2012). Thus, individuals who are high in neuroticism may not acquire social support as a protective factor, which in turn increased likelihood of depression.

4.1.3. Predictors of Marital Satisfaction

The effects of pain severity and neuroticism on marital satisfaction and the role of emotional expressivity (alexithymia and emotional non-expressiveness) on these relationships as a moderator were also investigated. The regression analysis showed that pain severity did not predict marital satisfaction in the present study. This finding is inconsistent with previous empirical studies revealing that pain severity is a significant predictor for marital satisfaction (e.g., Söderberg, 2001). Although pain severity predicted depression, the reason why it did not predict marital satisfaction may related that marital satisfaction depends mostly on reciprocal relationship between spouses. Recent findings suggest that spousal support is a crucial determinant of marital satisfaction (Xu & Burleson, 2004). For instance, partners of patients may play a buffering role in the case of patients in pain. As mentioned before by Bigatti and Cronan (2002), spouses may be supportive by listening, comforting, and adapting daily life although they feel drained. Moreover, beginning time of patients' symptoms may be an important factor to deal with the changes caused by the disorder. When time since diagnosis increases, the spouses would develop more adaptation to their new life.

The findings of regression analyses demonstrated that emotional non-expressiveness did not predict marital satisfaction. The findings of the study might be explained by certain characteristics of Turkish culture. In Western societies, marriage consists of more personal needs and spouses' hedonistic goals, whereas non-Western cultures put more emphasis on the extended family, and spousal emotional sharing and intimacy are less important. In addition, it was found that spouses in non-Western cultures were less expressive and more indirect than spouses in Western cultures (Celenk & Vijver, 2013). In Turkish culture, the findings showed that husbands' marital satisfaction and relations with the extended family significantly predicted wives' marital satisfaction, and husbands' marital satisfaction was predicted by wives' satisfaction and husbands' relation with the extended family (Imamoglu & Yasak, 1997). In Turkish society, it seems that partners have

undervalue on expressing their emotions. Therefore, whether FM patients have ability to express their emotions or not might not predict marital satisfaction. However, the present findings showed that alexithymia was significantly associated with marital satisfaction. In other words, when FM patients have higher alexithymia scores, they tended to have less marital satisfaction. In the present study, alexithymia was a pathological condition about expressing emotions, whereas emotional non-expressiveness was accepted as a lack of ability. In the study, FM patients' pathological condition predicted marital satisfaction; however, their ability did not. This contradictory result may be investigated in further studies.

The findings of regression analyses revealed that neuroticism did not predict marital satisfaction, too. In the literature on personality and marriage, it was concluded that individuals who are high in neuroticism should be less satisfied with their relationships because they perceive life events more negatively (Fisher & McNulty, 2008). However, FM patients might attribute pain as a source of dissatisfaction in their life, rather than their marriage. Thus, they might not be less satisfied with their relationships as opposed to expected. In addition, some studies (e.g., Woszidlo & Segrin, 2013) highlighted the important role of mutual problem solving for both husbands and wives to explain the effects of neuroticism and marital satisfaction. Therefore, problem solving skills of each partner might have changed the direct relation of neuroticism and marital satisfaction in the present study. Besides, individuals do not always experience relationships similarly, regardless of whom the relationship is with (Zayas, Shoda, & Ayduk, 2002). In regard to different experiences, it has been suggested that people have various mental models or schemas of relationships based both on their own interpersonal experiences and observation. According to these mental models, it has been assumed that our relationships can be shaped when these schemas are activated at a particular time (Young, Klosko, & Weishaar, 2003, p.27). Therefore, distinct personality characteristics may work differently when these characteristic features interact with another person's personality in a different context. For instance, although longitudinal studies have also

revealed negative effects of neuroticism on later marital outcomes (Shiota & Levenson, 2007), the findings of a cross-sectional study by Robins, Caspi, and Moffitt (2000) showed that similarity in neuroticism as a personality feature was associated with higher relationship satisfaction. Thus, personal schemas and their effects on the interpersonal interactions might have caused different results from the literature in the present study.

4.2. Clinical Implications of the Study

Chronic pain patients suffer from uncontrollable pain resulting in adverse effects on well-being and self-confidence (Goubert et al., 2004). It is clear that the prognosis and outcome of fibromyalgia are unsatisfactory and conventional medical care does not significantly alter the prognosis or outcome of fibromyalgia (Wolfe et al., 1997b). In that sense, it seems crucial to develop appropriate interventions in order to ease psychological burden that FM patients experience due their poor prognosis. The patient's care management should be planned based on the biopsychosocial model including psychological and social factors as well as biological variables to comprehend a person's medical condition as a whole (Prist, Wilde, & Masquelier, 2012). Future research on the pathogenesis of FM may be advanced by considering the interaction of environmental stress and genetics. It may be useful in helping patients and their families to cope with a number of concerns including learning coping skills for pain management, dealing with FM related depressive symptoms, addressing marital problems triggered by FM symptoms, and enhancing emotional support (Preece & Sandberg, 2005). In fact, patients' thoughts about pain may influence their affect and behavior in a reciprocal manner and they may feel helpless in controlling their pain. If FM patients are able to learn efficient ways of thinking, feeling and behaving, they may see themselves as active agents of change, and their perception of control on the disease process might be enhanced (Golden & Barbera, 2005). Clinicians exploring and treating shared mood disorders in fibromyalgia patients should be aware of the high prevalence of emotional non-expressiveness in FM patients, since ignoring this condition may interfere with effectively treating coexistent depression, which was found to be common (Steinweg, 2011). Moreover, preliminary findings showed that patients who did not

express concerns in the interview tended to become more depressed after the interview (Finset, 2004). Therefore, interviewing strategies should focus on identifying, prompting to express and reducing maladaptive emotions and helping patients to manage their disease and its symptoms.

Similarly, the relationship with spouses of the patients can be considered as resources in the interventions. The findings revealed that one of the reasons of some FM patients that they do not improve effective pain coping strategies may be related to inadequacy in family social support, family coherence, and family hardiness (Preece & Sanberg, 2005). Particularly, communication problems may occur when both partners assume that they communicate on shared understanding but actually not. For instance, the findings of a recent study (Söderberg, Lundman, & Norberg, 2002) showed that fatigue reported by women with FM was a quite different experience from tiredness reported by healthy women. Education is one of the most significant elements in FM treatment, therefore; family members, especially spouses, should be included in the education and treatment process with familial interventions (Neumann & Buskila, 1997).

4.3. Limitations of the Study and Recommendations for Further Studies

The generalizability of the results may be limited due to sample selection method because of the fact that the participants were FM patients who are actively using internet. This immediately eliminates various responses that might be obtained from patients not using internet. Thus, the individuals who were selected to participate might not have been representative of typical FM patients. In addition, there is no way to establish the validity of critical information such as how many clinical visits was made by patients and exactly how many procedures were performed. Future research that is based on direct access to medical records may provide greater accuracy in the data collection process. Moreover, the present study is limited by the small sample size. Although the unproportionate numbers of male and female participants seems to be a limitation, this ratio of gender (9:1) in the present study is consistent with the numbers given in FM literature (Yunus, 2001).

In the Relationship Happiness Scale (RHS), the questions that were asked to FM patients were not to determine if the impairments reported by participants are

unique to fibromyalgia, rather it included more general questions. What has not been addressed in the present study was how much the unique consequences of fibromyalgia affected the marital satisfaction. Future studies are suggested to investigate the relationship issues in individuals with fibromyalgia by considering whether changes in symptoms would affect relationship satisfaction. Future research may also reveal the effect of spousal adjustment to FM as a function of the time since diagnosis. Moreover, the present study was only carried out with FM patients; however, partners living with the chronically ill people may show contradictory results. Further research may explore the experiences of spouses living with patients with FM pain, too.

The patients' pain and its duration were checked through objective measures in this study; nonetheless, the lack of a 'gold standard' for FM diagnosis can be considered as a limitation. The present study relied on self-report data for functional impairment but that might not correlate with true functional disability in FM. Therefore, non-self-report alternatives for the assessment are needed.

In terms of depression, a retrospective report of depression may provide control for the direction of relation between FMS and depression onset. The cross-sectional design of the present study is a crucial limitation for reaching conclusions about causality. Future research examining long term effects of pain in people with FM should carry out a longitudinal design to better identify the association between FM-related characteristics and outcomes.

4.4. Conclusion

The findings of the present study showed that pain severity and neuroticism were significantly associated with depression. Moreover, emotional non-expressiveness and alexithymia were also associated with depression. This would be very important for therapeutic work to help FM patients develop their abilities to express emotions. However, there was no significant association between pain severity and marital satisfaction. Similarly, there was no significant association between neuroticism and marital satisfaction. Although, alexithymia significantly predicted marital satisfaction, emotional non-expressiveness did not. The findings showed that emotional expressivity (emotional non-expressiveness and alexithymia)

did not moderate pain severity/personality traits and depression/marital satisfaction relations in fibromyalgia patients. Consistent with the Biopsycosocial Model, these results showed the importance of psychological factors as well as physiological ones to understand the effects of the illness on FM patients' different life domains.

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APPENDICES

APPENDIX A: Demographic Information Form

(Demografik Bilgi Formu)

DEMOGRAFİK BİLGİLER

Yaş :

Cinsiyet : ☐ Kadın ☐ Erkek

Eğitim durumu: ☐ İlkokul ☐ Ortaokul ☐ Lise ☐ Üniversite

☐ Yüksek lisans/Doktora

Çalışıyor musunuz? ☐ Evet ☐ Hayır

Meslek:

Gelir Düzeyi: ☐ Düşük ☐ Orta ☐ Yüksek

Medeni durum: ☐ Evli ☐ Bekar ☐ Boşanmış ☐ Dul

Çocuğunuz var mı? ☐ Evet ☐ Hayır

Evet ise kaç tane?

Çocuklarınız dışında evde bakmakla yükümlü olduğunuz başka biri var mı?

İLETİŞİM BİLGİLERİ

Adres :

Telefon :

e-mail adresi :

GENEL BİLGİLER

Herhangi kronik bir rahatsızlığınız var mı? ☐ Evet

(Belirtiniz:…..…….) ☐ Hayır

Herhangi bir ilaç kullanıyor musunuz? ☐ Evet

(Belirtiniz:…..…….) ☐ Hayır

Herhangi bir psikolojik rahatsızlığınız var mı? ☐ Evet

(Belirtiniz: …..…….) ☐ Hayır

Ne zaman fibromiyalji sendromu tanısı aldınız?

Şikâyetleriniz ne kadar süredir devam ediyor? (ay)

Şu anda fibromiyalji için herhangi bir tedavi görüyor musunuz? ☐ Evet ☐ Hayır

Evet ise hangisi? ☐ İlaç tedavisi

☐ Fizik rehabilitasyon

☐ Psikoterapi

☐ Diğer (Belirtiniz):

Fibromiyaljinin ne kadar kontrol edilebilir bir hastalık olduğunu düşünüyorsunuz?

Hiç		Orta		Tamamen
0	1	2	3	4

Fibromiyaljinin ne kadar ciddi bir hastalık olduğunu düşünüyorsunuz?

Hiç		Orta		Tamamen
0	1	2	3	4

APPENDIX B: Widespread Pain Index and Symptom Severity Scale

(Yaygın Ağrı İndeksi ve Semptom Şiddet Skoru)

Yaygın Ağrı İndeksi

- Son bir haftada ağrılı bölgelerinizi işaretleyiniz.

☐ Sol Çene
☐ Sağ Çene
☐ Sol omuz kemeri
☐ Sağ omuz kemeri
☐ Sol üst kol
☐ Sağ üst kol
☐ Sol ön kol
☐ Sağ ön kol
☐ Sol uyluk
☐ Sağ uyluk
☐ Boyun
☐ Sırt
☐ Bel
☐ Göğüs
☐ Karın
☐ Sol kalça
☐ Sağ kalça
☐ Sol bacak
☐ Sağ bacak

Semptom Şiddet Skoru

- Aşağıdaki semptomların son bir haftada görülen şiddetini belirleyiniz.

	0 (Problem Yok)	1 (Hafif-orta derece, genelde hafif ve aralıklarla)	2 (Orta-ağır, orta derecede sıklıkla müzdarip)	3 (Ciddi, ısrarcı, yaşamı etkileyen)
Yorgunluk				
Yorgun uyanmak				
Bilişsel semptomlar (hatırlama ve düşünmede zorluk, konsantrasyon bozukluğu, odaklanamama vb)				

- Son 6 ay içerisinde aşağıdaki semptomlardan görülenleri işaretleyiniz.

☐ Baş ağrısı

☐ Karın ağrıları ya da kramplar ☐ Depresyon

APPENDIX C: Visual Analogue Scale

(Görsel Analog Skala)

Ağrı şiddetinizi aşağıdaki ölçek üzerinde işaretleyin.

Hiç ağrım yok — Dayanılmaz ağrım var

APPENDIX D: Basic Personality Traits Inventory

(Temel Kişilik Özellikleri Ölçeği)

Aşağıda size uyan ya da uymayan pek çok kişilik özelliği bulunmaktadır. Bu özelliklerden her birinin sizin için ne kadar uygun olduğunu ilgili rakamı daire içine alarak belirtiniz.

Örneğin;

Kendimi ..... biri olarak görüyorum.

Hiç uygun değil	**Uygun değil**		**Kararsızım**		**Uygun**		**Çok uygun**
1	**2**		**(3)**		**4**		**5**

		Hiç uygun değil	Uygun değil	Kararsızım	Uygun			Hiç uygun değil	Uygun değil	Kararsızım	Uygun
1	Aceleci	1	2	3	4	5	24 Pasif	1	2	3	4	5
2	Yapmacık	1	2	3	4	5	25 Disiplinli	1	2	3	4	5
3	Duyarlı	1	2	3	4	5	26 Açgözlü	1	2	3	4	5
4	Konuşkan	1	2	3	4	5	27 Sinirli	1	2	3	4	5
5	Kendine güvenen	1	2	3	4	5	28 Canayakın	1	2	3	4	5
6	Soğuk	1	2	3	4	5	29 Kızgın	1	2	3	4	5
7	Utangaç	1	2	3	4	5	30 Sabit fikirli	1	2	3	4	5
8	Paylaşımcı	1	2	3	4	5	31 Görgüsüz	1	2	3	4	5
9	Geniş / rahat	1	2	3	4	5	32 Durgun	1	2	3	4	5
10	Cesur	1	2	3	4	5	33 Kaygılı	1	2	3	4	5
11	Agresif(Saldırgan)	1	2	3	4	5	34 Terbiyesiz	1	2	3	4	5
12	Çalışkan	1	2	3	4	5	35 Sabırsız	1	2	3	4	5
13	İçten pazarlıklı	1	2	3	4	5	36 Yaratıcı (Üretken)	1	2	3	4	5
14	Girişken	1	2	3	4	5	37 Kaprisli	1	2	3	4	5
15	İyi niyetli	1	2	3	4	5	38 İçine kapanık	1	2	3	4	5
16	İçten	1	2	3	4	5	39 Çekingen	1	2	3	4	5
17	Kendinden emin	1	2	3	4	5	40 Alıngan	1	2	3	4	5
18	Huysuz	1	2	3	4	5	41 Hoşgörülü	1	2	3	4	5
19	Yardımsever	1	2	3	4	5	42 Düzenli	1	2	3	4	5
20	Kabiliyetli	1	2	3	4	5	43 Titiz	1	2	3	4	5
21	Üşengeç	1	2	3	4	5	44 Tedbirli	1	2	3	4	5
22	Sorumsuz	1	2	3	4	5	45 Azimli	1	2	3	4	5
23	Sevecen	1	2	3	4	5						

APPENDIX E: Toronto Alexithymia Scale

(Toronto Aleksitimi Ölçeği)

Lütfen aşağıdaki 26 maddenin sizin için ne kadar uygun olduğunu aşağıdaki ölçeği kullanarak değerlendiriniz. Her bir madde için yanındaki uygun rakamı yuvarlak içine alınız.

1	2	3	4	5
Kesinlikle uygun değil	Uygun değil	Kararsızım	Uygun	Kesinlikle uygun

	Kesinlikle uygun değil	**Uygun değil**	**Kararsızım**	**Uygun**	**Kesinlikle uygun**
1. Ağladığımda, beni ağlatan şeyin ne olduğunu bilirim.	1	2	3	4	5
2. Hayal kurmak boşa zaman harcamaktır.	1	2	3	4	5
3. Keşke bu kadar utangaç olmasaydım.	1	2	3	4	5
4. Çoğu zaman duygularımın ne olduğunu tam olarak bilemem.	1	2	3	4	5
5. Gelecek hakkında sıkça hayal kurarım.	1	2	3	4	5
6. Birçokları kadar kolay arkadaş edinebildiğimi sanıyorum.	1	2	3	4	5
7. Bir sorunun çözümünü bilmek, o çözüme nasıl ulaşıldığını bilmekten daha önemlidir.	1	2	3	4	5
8. Duygularımı tam olarak anlatacak sözleri bulmak benim için zordur.	1	2	3	4	5
9. Herhangi bir olay hakkındaki görüşümü başkalarına açıkça belirtmekten hoşlanırım.	1	2	3	4	5
10. Bedenimde öyle şeyler hissediyorum ki; doktorlar bile ne olduğunu anlamıyorlar.	1	2	3	4	5
11. Benim için, yalnızca bir işin yapılmış olması yetmez; nasıl ve neden yapıldığını bilmek isterim.	1	2	3	4	5
12. Duygularımı kolayca anlatabilirim.	1	2	3	4	5
13. Sorunların ne olduğu üzerine değil; onların nereden kaynaklandığı üzerine düşünmeyi tercih ederim.	1	2	3	4	5
14. Sinirim bozuk olduğunda; üzüntülü mü, korkulu mu yoksa öfkeli mi olduğumu bilmem.	1	2	3	4	5
15. Hayal gücümü bolca kullanırım.	1	2	3	4	5
16. Yapacak başka bir işim olmadığında, zamanımın çoğunu hayal kurarak geçiririm.	1	2	3	4	5
17. Bedenimde şaşırtıcı hisler duyduğum olur.	1	2	3	4	5

18. Pek hayal kurmam.	1	2	3	4	5
19. Olayların nedenine kafa yormaktan çok işleri oluruna bırakmayı tercih ederim.	1	2	3	4	5
20. Tam olarak tanımlayamadığım duygularım var.	1	2	3	4	5
21. İnsanın duygularına yakın olması önemlidir.	1	2	3	4	5
22. İnsanlar hakkında neler hissettiğimi anlatmak benim için zordur.	1	2	3	4	5
23. Tanıdıklarım, duygularımdan daha çok söz etmemi isterler.	1	2	3	4	5
24. İnsan, olayların derinine inmelidir.	1	2	3	4	5
25. İçimde neler olup bittiğini bilmiyorum.	1	2	3	4	5
26. Çoğu zaman kızgınlığımın farkına varmam.	1	2	3	4	5

APPENDIX F: Type C Behavior Scale

(C Tipi Davranış Ölçeği)

Lütfen aşağıdaki 12 maddenin sizin için ne kadar uygun olduğunu aşağıdaki ölçeği kullanarak değerlendiriniz. Her bir madde için yanındaki uygun rakamı yuvarlak içine alınız.

1	2	3	4
Bana hiç benzemiyor	Bana biraz benziyor	Bana oldukça benziyor	Bana çok benziyor

	Bana hiç benzemiyor	**Bana biraz benziyor**	**Bana oldukça benziyor**	**Bana çok benziyor**
1. Kendi ihtiyaçlarımı bile göz ardı ederek, başkalarına yardım etmek için çizdiğim yolumun dışına çıkarım	1	2	3	4
2. Başkalarına kendim için yaptıklarımdan daha fazlasını yaparım.	1	2	3	4
3. Başkalarının ihtiyaçlarını kendi ihtiyaçlarımdan daha üstün görmeyi görevim gibi düşünürüm .	1	2	3	4
4. Başkalarının ihtiyaçlarının, kendi ihtiyaçlarımdan daha önemli olduğunu düşünürüm.	1	2	3	4
5. Önce kendi ihtiyaçlarıma, sonra başkalarının ihtiyaçlarına odaklanmam gerektiğini düşünürüm .	1	2	3	4
6. Çok verici olduğum söylenir.	1	2	3	4
7. Başkalarına yardım edebilmek uğruna kendi ihtiyaçlarımı feda ederim.	1	2	3	4
8. Başkasına kendimi nasıl hissettiğimi söyleme konusunda sıkıntı duyarım.	1	2	3	4
9. Başkalarına duygularımdan bahsetmeyi severim.	1	2	3	4
10. Ne kadar üzgün olursam olayım, bunu rahatlıkla başkalarına yansıtamam .	1	2	3	4
11. Stresten bunaldığım zamanlarda, tavsiye almak için arkadaşlarıma veya aileme giderim .	1	2	3	4
12. Hayatım boyunca, yoğun duygularımı ifade etmeme imkan verilmiştir .	1	2	3	4

APPENDIX G: Beck Depression Inventory

(Beck Depresyon Ölçeği)

Aşağıda, kişilerin ruh durumlarını ifade ederken kullandıkları bazı cümleler verilmiştir. Her maddede o duygu durumunun derecesini belirleyen 4 seçenek vardır. Son bir hafta içindeki (şu an dahil) kendi duygu durumunuzu göz önünde bulundurarak, size uygun olan ifadeyi bulunuz. Daha sonra, o madde numarasının karşısında, size uygun ifadeye karşılık gelen seçeneği bulup işaretleyiniz.

1. a) Kendimi üzgün hissetmiyorum.
   b) Kendimi üzgün hissediyorum.
   c) Her zaman için üzgünüm ve kendimi bu duygudan kurtaramıyorum.
   d) Öylesine üzgün ve mutsuzum ki dayanamıyorum.

2. a) Gelecekten umutsuz değilim.
   b) Geleceğe biraz umutsuz bakıyorum.
   c) Gelecekten beklediğim hiçbir şey yok.
   d) Benim için bir gelecek yok ve bu durum düzelmeyecek.

3. a) Kendimi başarısız görmüyorum.
   b) Çevremdeki birçok kişiden daha fazla başarısızlıklarım oldu sayılır.
   c) Geriye dönüp baktığımda, çok fazla başarısızlığımın olduğunu görüyorum.
   d) Kendimi tümüyle başarısız bir insan olarak görüyorum.

4. a) Her şeyden eskisi kadar zevk alabiliyorum.
   b) Her şeyden eskisi kadar zevk alamıyorum.
   c) Artık hiçbir şeyden gerçek bir zevk alamıyorum.
   d) Bana zevk veren hiçbir şey yok. Her şey çok sıkıcı.

5. a) Kendimi suçlu hissetmiyorum.
   b) Arada bir kendimi suçlu hissettiğim oluyor.
   c) Kendimi çoğunlukla suçlu hissediyorum.
   d) Kendimi her an için suçlu hissediyorum.

6. a) Cezalandırıldığımı düşünmüyorum.
   b) Bazı şeyler için cezalandırılabileceğimi hissediyorum.
   c) Cezalandırılmayı bekliyorum.
   d) Cezalandırıldığımı hissediyorum.

7. a) Kendimden hoşnutum.
   b) Kendimden pek hoşnut değilim.
   c) Kendimden hiç hoşlanmıyorum.
   d) Kendimden nefret ediyorum.

8. a) Kendimi diğer insanlardan daha kötü görmüyorum.
   b) Kendimi zayıflıklarım ve hatalarım için eleştiriyorum.
   c) Kendimi hatalarım için her zaman suçluyorum.
   d) Her kötü olayda kendimi suçluyorum.

9. a) Kendimi öldürmek gibi düşüncelerim yok.
   b) Bazen kendimi öldürmeyi düşünüyorum fakat bunu yapamam.
   c) Kendimi öldürebilmeyi isterdim.
   d) Bir fırsatını bulursam kendimi öldürürdüm.

10. a) Her zamankinden daha fazla ağladığımı sanmıyorum.
    b) Eskisine göre şu sıralarda daha fazla ağlıyorum.
    c) Şu sıralar her an ağlıyorum.
    d) Eskiden ağlayabilirdim, ama şu sıralarda istesem de ağlayamıyorum.

11. a) Her zamankinden daha sinirli değilim.
    b) Her zamankinden daha kolayca sinirleniyor ve kızıyorum.
    c) Çoğu zaman sinirliyim.
    d) Eskiden sinirlendiğim şeylere bile artık sinirlenemiyorum.

12. a) Diğer insanlara karşı ilgimi kaybetmedim.
    b) Eskisine göre insanlarla daha az ilgiliyim.
    c) Diğer insanlara karşı ilgimin çoğunu kaybettim.
    d) Diğer insanlara karşı hiç ilgim kalmadı.

13. a) Kararlarımı eskisi kadar kolay ve rahat verebiliyorum.
    b) Şu sıralarda kararlarımı vermeyi erteliyorum.
    c) Kararlarımı vermekte oldukça güçlük çekiyorum.
    d) Artık hiç karar veremiyorum.

14. a) Dış görünüşümün eskisinden daha kötü olduğunu sanmıyorum.
    b) Yaşlandığımı ve çekiciliğimi kaybettiğimi düşünüyor ve üzülüyorum.
    c) Dış görünüşümde artık değiştirilmesi mümkün olmayan olumsuz değişiklikler olduğunu hissediyorum.
    d) Çok çirkin olduğumu düşünüyorum.

15. a) Eskisi kadar iyi çalışabiliyorum.
    b) Bir işe başlayabilmek için eskisine göre kendimi daha fazla zorlamam gerekiyor.
    c) Hangi iş olursa olsun, yapabilmek için kendimi çok zorluyorum.
    d) Hiçbir iş yapamıyorum.

16. a) Eskisi kadar rahat uyuyabiliyorum.
    b) Şu sıralar eskisi kadar rahat uyuyamıyorum.
    c) Eskisine göre 1 veya 2 saat erken uyanıyor ve tekrar uyumakta zorluk çekiyorum.
    d) Eskisine göre çok erken uyanıyor ve tekrar uyuyamıyorum.

17. a) Eskisine kıyasla daha çabuk yorulduğumu sanmıyorum.
    b) Eskisinden daha çabuk yoruluyorum.
    c) Şu sıralarda neredeyse her şey beni yoruyor.
    d) Öyle yorgunum ki hiçbir şey yapamıyorum.

18. a) İştahım eskisinden pek farklı değil.

b) İştahım eskisi kadar iyi değil.

c) Şu sıralarda iştahım epey kötü.

d) Artık hiç iştahım yok.

19. a) Son zamanlarda pek fazla kilo kaybettiğimi sanmıyorum.

b) Son zamanlarda istemediğim halde üç kilodan fazla kaybettim.

c) Son zamanlarda beş kilodan fazla kaybettim.

d) Son zamanlarda yedi kilodan fazla kaybettim.

-Daha az yiyerek kilo kaybetmeye çalışıyorum. EVET ( ) HAYIR ( ) –

20. a) Sağlığım beni pek endişelendirmiyor.

b) Son zamanlarda ağrı, sızı, mide bozukluğu, kabızlık gibi sorunlarım var.

c) Ağrı, sızı gibi bu sıkıntılarım beni epey endişelendirdiği için başka şeyleri düşünmek zor geliyor.

d) Bu tür sıkıntılar beni öylesine endişelendiriyor ki, artık başka bir şey düşünemiyorum.

21. a) Son zamanlarda cinsel yaşantımda dikkatimi çeken bir şey yok.

b) Eskisine göre cinsel konularla daha az ilgileniyorum.

c) Şu sıralarda cinsellikle pek ilgili değilim.

d) Artık, cinsellikle hiçbir ilgim kalmadı.

APPENDIX H: Relationship Happiness Scale

(İlişkilerde Mutluluk Ölçeği)

Aşağıda eşinizle olan ilişkiniz hakkında cümleler verilmiştir. Eşinizle olan ilişkinizi göz önünde bulundurarak bu cümlelere ne ölçüde katıldığınızı belirtiniz. Her bir ifadenin evliliğinizdeki duygu ve düşüncelerinizi ne oranda yansıttığını karşılarındaki 5 aralıklı cetvel üzerinde ilgili rakamı yuvarlak içine alarak belirtiniz.

1	2	3	4	5
Hiç katılmıyorum	Biraz katılmıyorum	Kararsızım	Biraz katılıyorum	Tamamen katılıyorum

	Hiç katılmıyorum	**Biraz katılmıyorum**	**Kararsızım / Fikrim yok**	**Biraz katılıyorum**	**Tamamen katılıyorum**
1. Eşimle iyi bir ilişkim var.	1	2	3	4	5
2. Eşimle ilişkim çok istikrarlı.	1	2	3	4	5
3. Eşimle ilişkim çok güçlü.	1	2	3	4	5
4. Eşimle ilişkim beni mutlu ediyor.	1	2	3	4	5
5. Eşimle kendimi gerçekten bir bütünün parçası gibi hissediyorum.	1	2	3	4	5
6. Genel olarak evliliğimdeki herşeyden çok memnunum.	1	2	3	4	5

APPENDIX I: TEZ FOTOKOPİ İZİN FORMU

ENSTİTÜ

Fen Bilimleri Enstitüsü ☐
Sosyal Bilimler Enstitüsü ☐
Uygulamalı Matematik Enstitüsü ☐
Enformatik Enstitüsü ☐
Deniz Bilimleri Enstitüsü ☐

YAZARIN

Soyadı: Denizci
Adı : Merve
Bölümü : Psikoloji

TEZİN ADI (İngilizce) : Does Emotional Expressivity Moderate Pain Severity/Personality Traits and Depression/Marital Satisfaction Relations in Fibromyalgia Patients?

TEZİN TÜRÜ : Yüksek Lisans ☐ Doktora ☐

1. Tezimin tamamı dünya çapında erişime açılsın ve kaynak gösterilmek şartıyla tezimin bir kısmı veya tamamının fotokopisi alınsın.

2. Tezimin tamamı yalnızca Orta Doğu Teknik Üniversitesi kullancılarının erişimine açılsın. (Bu seçenekle tezinizin fotokopisi ya da elektronik kopyası Kütüphane aracılığı ile ODTÜ dışına dağıtılmayacaktır.) ☐

3. Tezim bir (1) yıl süreyle erişime kapalı olsun. (Bu seçenekle tezinizin fotokopisi ya da elektronik kopyası Kütüphane aracılığı ile ODTÜ dışına dağıtılmayacaktır.) ☐

Yazarın imzası ..... Tarih .....