Migraine Headache: A family affair.

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MIGRAINE HEADACHE: A FAMILY AFFAIR

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ABSTRACT

Chronic illness in a family impacts each individual member of the family. However, the impact may vary from member to member, with each member’s reactions affecting the others. The primary purpose of this study was to explore the impact of migraine headaches on the male partner of the female patient. Specifically, the impact on quality of life, level of depression and marital satisfaction of the partner as reported by the partner, was targeted for study. Twenty couples completed the internet based survey which included a background information form, Migraine Specific Quality of Life measure, Dyadic Adjustment Scale, Kansas Marital Satisfaction Scale and the Beck Depression Inventory. Forty-five additional patients completed the survey, however, their data were not linked to a partner data set. A brief analysis of the patient only data was conducted as well. This exploratory study employed a correlational research design.

Partners reported that patient migraine did in fact have a measurable impact on their own quality of life. However, analysis of partner scores revealed that their level of depression was not significantly influenced by the patient migraine. The assessment of partner marital satisfaction based on the scores from two different measures yielded conflicting results. Overall, partners did not report the patient’s migraine as negatively
impacting their satisfaction with their mate, nor their relationship as a whole. The patient only sample analysis revealed a strong statistically significant negative relationship between the Beck depression score and the MSQ total score.
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Chapter 1

INTRODUCTION

The purpose of this chapter is to provide a general overview of the area of study to be investigated, present the theoretical framework within which the study will be viewed, describe how this topic is important to the field of family studies, and introduce the research questions of interest. A brief list of pertinent definitions, key terms and abbreviations is also provided.

Background

Chronic illness in a family impacts each individual member of the family. However, the impact may vary from member to member, with each member’s reactions affecting the others. Flor, Turk, and Scholz (1987) studied the impact of chronic pain on the spouse. Results indicated that pain patients and their spouses experienced considerable change in marital satisfaction. Similarly, Schwartz, Slater, Birchler and Atkinson (1991) studied marital couples within which one partner experienced chronic illness and found that it directly impacted spousal depression and marital satisfaction. Specifically, they found three significant predictors of the spouse's depressed mood, namely the patient's average level of reported pain, patient's reported levels of anger and hostility, as well as the spouse's level of marital satisfaction. The purpose of the current study is to examine marital satisfaction and depression among couples within which the female has chronic migraine headache.

The word migraine is derived from the Greek word hemikrania, meaning half of the head because the pain of the headache is often only on one side of the head. Migraine attacks usually last from 4 – 72 hours and produce the following symptoms: throbbing
pain on one side of the head, nausea, vomiting, facial tingling, visual symptoms, sensory disturbances, pain worsened by physical activity and extreme sensitivity to light and noise (Lipton, Bigal, Diamond, Freitag, Reed, & Stewart, 2007).

While an estimated 30 million Americans have migraines, it affects women, an estimated 18 million, at a 3:1 ratio over men. Self-esteem, professional/career development and family and social life are a few areas in which women have reported experiencing more negative effects than men (Diamond, 2007; The Free Library, 1996). Migraine is more prominent in women in every culture worldwide.

Migraines tend to run in families. About 70 – 80% of patients with migraine have a family history of the disorder. Ruiz de Valeasco, Gonzalez, Etxeberria and Garcia-Monco (2003) conducted a qualitative study of migraine patients in Spain. They spoke with relatives of migraine patients and found that family members often described themselves figuratively as also having headaches. In other words, when one family member is diagnosed as having migraines, the whole family perceives itself as receiving the diagnosis. Consistent with a general systems framework, all members are viewed as sharing the experience of migraine. Roy (2006) reported that chronic pain or illness in a spouse is capable of producing profound changes in the functioning of other family members. He noted that no aspect of family functioning remains unaffected by the chronic pain of a family member.

Silver (2004) reported similar findings. Once a partner develops a chronic illness, the well spouse is suddenly faced with much more responsibility, a greater workload, increased household duties, increased medical expenses and the potential loss of a loving and sexually fulfilling relationship. Smith (1998) attempted to address the specific impact
of migraine on non-sufferer spouses/partners, but reported being unable to recruit a significant size sample of spouses/partners to include in his study. Smith’s findings, based solely on the patient’s perspective, clearly noted that family functioning is disturbed, parental roles are disrupted and spousal relationships are harmed. Frequency and quality of sexual relationships reportedly decreased, and divorce occurred in some cases.

Hazard, Munakata, Bigal, Rupnow and Lipton (2009) noted that migraine imposes a substantial burden on patients, families, employers and societies. The current literature, however, lacks specific findings describing the impact of migraine headaches on the quality of life of the well partners of those with the disorder. The limited literature that does exist describes the impact on well partners as it is reported by the patient; it does not address the impact as reported by the well partners themselves.

*Theoretical Framework*

The proposed study will be conducted within a family systems framework. The systems framework is based on the belief that every component of a system, in this case, every family member, is affected by and in turn affects the experiences of every other family member. The four assumptions underlying the systems perspective include: (a) systems are interconnected, (b) systems can be understood only as wholes, (c) all systems affect themselves through environmental feedback and (d) systems are not reality (White & Klein, 2008). A system is a unit, however, that can be distinguished from and is affected by its environment. All systems have some form of boundaries. Boundaries serve as borders between the system and its environment. Boundaries are measured by their permeability and can vary in degrees of openness and closedness.
All systems have internal rules of transformation; each rule represents a relationship between two elements of the system. A husband and wife are elements of the marital system, a subsystem reflecting the family system. The function of a rule of transformation is to transform inputs into the system from the environment into outputs from the system. A key concept in systems theory is that of feedback. Feedback can be positive as in an amplifying deviation or negative as in deviation dampening. In goal-oriented family systems, positive feedback amplifies deviations from the goal whereas negative feedback dampens deviations from the goal. Reactions to chronic illness in couples dealing with challenging health issues will serve as strong feedback to each partner as well as the entire family unit.

Variety in a system refers to the extent to which the system has the resources to meet new challenges or to adapt to changes that occur in the system. Families who have the ability to be flexible and are able to make adaptations to a dynamically changing environment will have more stability than those who lack variety. A family seeks to maintain a dynamic equilibrium by using its resources to maintain its rules and does so through feedback and control. In this instance, a couple’s ability to cope with chronic health issues may very well be influenced by the couple’s access to resources and their ability to be flexible in relationship roles or expectations. Rolland (1999) noted that illnesses that are relapsing or episodic (of which migraines would be included) are distinguished by the alteration of stable low symptom periods with periods of exacerbation. Families are strained by both the frequency of transitions between bouts of illness and symptom-free periods as well as the uncertainty of when a recurrence will occur. Rolland (1999) suggested that the wide psychological discrepancy between
periods of normalcy versus flare-up is particularly taxing and requires a high level of family flexibility to cope.

A family consists of several subsystems. For example, a family may contain sibling subsystems, parent-child subsystems, or a husband-wife (partners) subsystem. White & Klein (2008) described both spouses as being linked in a system in which one person’s behavior becomes the other person’s information. The person’s information provides beliefs and the basis on which future actions are taken. Family process theory (a specific, major variant of family systems theory) is commonly used by applied practitioners and therapists studying the family. How families cope with stressors (such as chronic illness) is often a topic of interest and research for such practitioners. Stress on a family may be random or situationally induced (i.e., health issues). Specifically, family process theory is devoted to maintaining social and spatial relationships within the family and between the family and the environment (White & Klein, 2008). Within the family, social and spatial relationships between dyads must be managed so that the individuals are protected from each other’s demands (buffering) and still linked to each other (bonding). The ability to balance these two opposing needs may prove to be particularly challenging in dyads dealing with chronic illness. The relations between the family and environment are composed of interactions that link the family to external systems while maintaining family boundaries. Couples impacted by chronic illness may be challenged in the maintenance of boundaries between family and employers, school systems, and social networks to name a few.

Systems theory is a major conceptual framework used in the study of marital interaction. Gottman, Markman and Notarius (1977) reported finding that
emotional affect carried in nonverbal messages is a better discriminator of distressed from non-distressed couples than more traditional verbal measures such as spousal agreement. Additionally, they found little support for a simple quid pro quo or spousal reciprocity hypothesis. Research such as this has resulted in a better understanding of behavioral contingencies between partners and the identification of specific patterns that lead to couple disintegration and to the specific causes of such patterns. Gottman claimed that researchers can predict with great accuracy whether or not relationships will fail (Gottman & Levenson, 1992). Patterns of behavior among partners who are living with chronic illness may then be predictive of relationship satisfaction and perhaps relationship longevity.

In this study the subsystem of the adult partners is explored. The migraine experience of both patient and significant other is viewed using the systems framework, noting that what happens to one partner inevitably both directly and indirectly impacts the other.

Statement of the Problem

This study seeks to expand the description of the impact of chronic migraine on the family with a particular emphasis on the impact reported by the partner of the patient. The study identifies and examines the relationship between migraine and the quality of life for both adult patients and their well partners. Specifically, the study seeks to determine the relationships between migraine and quality of life, depression status, and marital satisfaction.

While there is extensive literature on pain and the impact on the patient, there is only a moderate amount of literature that specifically addresses the impact on couples.
There is a scarce amount of research specifically looking at the impact of migraine on families and next to no literature exploring the impact of migraine on couples. The few studies that do address couple impact typically use data collected from patients regarding their perceptions of how their well partner is affected. Initial findings from such studies found that chronic headache (not specifically migraine) couples had greater problems with consensus, cohesion, affection, and sexual relationships (Kopp, Richter, Ranie, Kopp-Wilfling, Rumpoid & Walter, 1995). Families with migraine showed less openness in expressing feelings, less spontaneity and less room for expression of criticism or annoyance (Smith, 1998). Studies such as those by Smith suggest that family disharmony, instability and conflict may be caused by migraine and that further study of migraine impact on family interaction is needed.

Smith (1998) conducted a nationwide study on the nature and extent of the impact of migraine on members of the family as perceived by the migraine patient. The subset of results related specifically to perceived impact on the partner included: delayed or postponed household chores, cancellation or postponement of social activities, negative impact on partner relationship including reduction in frequency and quality of sexual relations, need for therapeutic couple counseling and ending of the relationship/marriage. Lipton, Bigal, Kolodner, Stewart, Liberman and Steiner (2003) also examined migraine impact on families and reported similar findings. Their results showed that well partners were dissatisfied with work demands placed on them, with the level of responsibilities and duties, and with their ability to perform. In addition, these researchers suggested that migraine patients’ sense of isolation and guilt toward their partners accentuates the perception on disease impact and that perhaps their partners
underestimate the burden of migraine on the patient. Lipton et al. (2003) confirmed that people with migraine and their partners are significantly and adversely impacted by their headaches.

Previous research findings such as those reported by Smith (1998), Lipton et al. (2003), Kopp et al. (1995), Smith (1999) and others provide a foundation of evidence that supports the relevance of investigating quality of life impact on both patient and partner as well as the perceptions regarding impact of migraine held by both patient and partner. Such evidence also supports the assumption that marital satisfaction is inevitably impacted by the presence of migraine in the family. Burman (1992) argued that from a systems perspective, it is meaningless to separate the effect of marriage on health from the effect of health on marriage.

Lewis, Woods, Hough, and Bensley (2002) studied family functioning from a systems perspective among families where the mother suffered from a chronic illness. Their specific focus was on the impact of the illness from the spouse’s perspective. The number of illness demands that the fathers experienced was a significant predictor of marital adjustment and the well spouse’s level of depression. While the connection to marital adjustment has been reported in migraine study results as well, the relationship between chronic illness and well spouse level of depression has not been addressed. Thus this study will include a measurement of spousal depression level in anticipation that a similar relationship may exist.

Previous research provides justification for studying the variables of quality of life, marital satisfaction and depression in couples with one partner experiencing migraine. Background factors and participant demographics also will be explored for
potential significance related to marital satisfaction. Research on marital satisfaction in general has shown relationships between certain variables and level of satisfaction. For example, Mifardi, Edalati, and Redzuan (2012) studied the relationship between several background factors and found that, for females, there were no significant relationships between duration of marriage, family income and marital satisfaction. They did report significant negative relationships between the respondent’s age and number of children and marital satisfaction, as well as a positive relationship between years of education and marital satisfaction.

Bradbury, Fincham and Beach (2000) conducted a review of research on the nature and determinants of marital satisfaction. When summarizing the literature on the impact of life stressors and transitions on marital satisfaction they noted that many studies documented the diverse ways in which couples adapt to extreme difficulties and the potential for remarkable resilience among couples. In some instances, illness actually was reported as strengthening marital ties for many couples. The researchers noted the importance of conducting future research efforts that will directly inform and guide specific preventative, clinical and policy level interventions involving couples and families. Such research should follow an application orientation toward solving specific problems pertinent to marriages and families.

Smith (1998) concluded that his study demonstrated the pervasive effects of migraine on the quality of life in the broader context of the family. Furthermore, family members are likely to help the patient cope with their problem or may have a negative effect that contributes to the inability to cope. Practitioners should consider including family members/partners in the patient’s treatment plan, as such a strategy may result in
better treatment outcomes. This study seeks to contribute such recommended research and will provide more specific guidance on designing effective treatment plans for migraine patients that are inclusive of family members and their challenges.

**Research Questions**

Beginning with a look at the extent to which and nature of the impact of migraine on the patient’s quality of life and marital satisfaction as reported by the patient, the study will further seek to answer the following study questions:

**Study Question 1a:** To what extent has the partner reported that their quality of life was negatively affected by the patient’s chronic migraine (as measured by the subscores for role prevention, role restriction, and emotional function and the Total Score on the partner version of the Migraine Specific Quality of Life measure)?

**Study Question 1b:** To what extent is the partner’s reported MSQ Total Score correlated with the patient’s reported MSQ Total Score?

**Study Question 2:** What is the direction and degree of correlation, if any, between the Total Score on the MSQ questionnaire and the Beck Depression Inventory II Total Score for the patient and for the partner?

**Study Question 3a:** What is the level of marital satisfaction for the patient and the partner as reported by their Total Scores on the Dyadic Adjustment Scale and Kansas Marital Satisfaction measures?

**Study Question 3b:** What is the correlation, if any, between the patient’s predicted partner level of marital satisfaction and the actual spouse’s reported level of marital satisfaction on the KMS?
Study Question 3c: What is the correlation, if any, between the partner’s predicted patient level of marital satisfaction and the patient’s actual reported level of marital satisfaction as measured by the KMS?

Study Question 4: To what extent, if any, do the background factors of age, length of relationship and number of years with migraine correlate with the DAS marital satisfaction Total Score and/or the KMS Total Score?

Study Question 5: To what extent, if any, are the MSQ Total Score, BDI II Depression Total Score and DAS marital satisfaction Total Score correlated in the patient only sample?

**Significance of Study**

The results of this study will contribute to a greater understanding of how migraine affects both the patient and the partner in the domains of quality of life, depression status and marital satisfaction. The systems approach to viewing the impact of the illness can provide patients, spouses, counselors and family studies professionals an in-depth look at how family functioning, communication patterns, social/leisure activities, division of responsibilities, and family dynamics are affected by living with someone suffering from migraine. Increased understanding of the broad impact of migraine on patient, partner and family may facilitate the development of more effective treatment plans and/or interventions by professionals in both the health care and social service fields.

**Definition of Terms**

Marital satisfaction is defined as the degree of the partner’s satisfaction with his/her marriage (Mifardi & Redzuan, 2010).
Migraine is a common chronic recurrent neurological disorder characterized by attacks of pain, associated symptoms and temporary disability (Lipton, Migal, Stewart, Liberman, & Steiner, 2003).

Chapter 2
REVIEW OF LITERATURE

Introduction

This chapter describes the findings from a review of the literature on variables and concepts key to this study. Migraine incidence, prevalence, and disease characteristics will be highlighted. An overview of the key variables, marital satisfaction and depression, also is presented. The relationship between marital satisfaction, depression and chronic illness in general is reviewed, followed by a more specific focus on migraine. In addition, the specific impact of migraine on women, quality of life impact between attacks, family relationships, and family finance is explored. Lastly, concepts from the family systems framework are introduced as they apply to the impact of chronic illness on patient, partner and family relationships.

Migraine Characteristics, Incidence and Prevalence

The Headache Classification Committee of the International Headache Society (1988) listed the following criteria for migraine diagnosis: lifetime frequency, duration, laterality, character, intensity, aggravation by physical activity, associated nausea, vomiting, photophobia and phonophobia. Migraine is a major cause of disability. The World Health Organization (2001) has shown that mental and neurological disorders collectively account for 30.8% of all years of healthy life lost to disability; migraine alone counts for 1.4% of these and is reported as one of the top 20 causes of disability worldwide.

Migraine is characterized as a chronic disorder with episodic attacks, with potential for progression to more frequent and severe patterns. Migraines are associated
with substantial functional impairment, including both physical and emotional ramifications (Buse, Rupnow & Lipton, 2009). There is considered to be a strong genetic component in migraine. Migraines tend to run in families (Buse et al., 2009). About 70 – 80% of patients with migraine have a family history of the disorder. Researchers have located a genetic mutation responsible for the very rare hemiplegic migraine, but several other genes are thought to be involved in the migraine process as well (Lipton et al., 2007).

While an estimated 30 million Americans have migraines, it reportedly affects women, an estimated 18 million, at a 3:1 ratio over men. Self-esteem, professional/career development and family and social life are a few areas in which women have reported experiencing more negative effects than have men (Diamond, 2007; The Free Library, 1996). Both men and women with migraine are at higher risk for stroke before the age of 50 compared to those without migraine, twice the risk compared to the non-migraine population (Etminan, Takkouche, Isorna, & Samii, 2005). Migraines have been shown to have a significant negative impact on family relations and work productivity (The Free Library, 1996). Major depression and anxiety are also closely associated with migraines.

Gerrits, Vogelzangs, van Oppen, Marwijk, van der Horst, and Penninx (2012) studied the impact of pain on the course of depressive and/or anxiety disorders and found that patients with chronic pain are more prone to a chronic course of depressive and anxiety disorders. Specifically, longer duration and higher severity of pain were significantly associated with having a chronic course of depressive and/or anxiety disorders. Study results from Lipton et al. (2007) indicate that people with migraines have poorer social interactions and emotional health than patients with other forms of chronic illnesses.
including asthma, diabetes and arthritis. Migraines can be exceptionally painful. When compared to pain associated with breast cancer, migraine sufferers who are also breast cancer survivors rate migraine attacks as much more severe (Peters, Abu-Sand, Dowson & Murphy, 2005). Migraine triggers can include, but are not limited to:

- Emotional stress
- Intense physical exertion
- Abrupt weather changes
- Bright or flickering lights
- Odors
- High altitude
- Travel motion
- Lack of sleep
- Skipping meals
- Certain foods or chemicals found in foods
- Hormonal fluctuations (The Free Library, 1996; Lipton et al., 2007).

Medications are the typical treatment strategy for both the prevention of attacks and intervention for acute attacks. The main preventative drug treatments for migraine include beta blockers, anti-seizure drugs and tricyclic antidepressants (Silberstein, 2009). Migraine attacks are treated by prescription drugs such as triptans and ergotamine as well as pain relievers and anti-nausea drugs (Silberstein, 2009; The Free Library, 1996). Behavioral treatments include biofeedback, relaxation techniques and cognitive behavioral therapy. Acupuncture is often utilized with mixed results. Exercise, adequate sleep and diet modifications are common lifestyle factors that may reduce attack
frequency and/or severity. Newer, controversial strategies include Botox injections and nerve blocks, although many insurance companies will not provide coverage for these non-traditional treatments (Buse, Rupnow & Lipton, 2009).

Migraine is an episodic, painful chronic illness lacking both a clear cause and cure. Migraines cause significant functional impairment in patients. Depression and anxiety are common co-morbidities in migraine patients. Interpersonal, family and employment relations are among the many areas of social functioning that are negatively impacted by migraine (Diamond, 2007; The Free Library, 1996; Lipton et al., 2007).

**Marital Satisfaction**

As marriage moves from being an expected and lifelong event to more of a voluntary and often temporary option for family formation, marital satisfaction becomes a key factor that influences marital stability. Previous research has reported that marital satisfaction can be influenced by whether marital expectations or needs are met, whether a spouse has the ability to help their partner fulfill his/her personal growth goals, parental status and length of relationship. Many studies have reported that marital satisfaction is high at the beginning of the marriage, starts to drop after the honeymoon and drops significantly after the birth of the first child (Kurdek, 1999). Li and Fung (2011) introduced the dynamic goal theory of marital satisfaction. The theory posits that people have multiple goals to achieve in their marriage, including personal growth goals, companionship goals and instrumental goals. The ability of the couple to meet such goals has a direct influence on their marital satisfaction. Mirfardi, Edalati, and Redzuan (2010) researched the relationship between background factors and marital satisfaction in Iran. No significant relationships between duration of marriage, family income or marital
satisfaction were reported. However, there was a negative relationship between respondent’s age and number of children with marital satisfaction. A positive relationship was reported between respondent’s years of education and marital satisfaction.

Bradbury, Fincham and Beach (2000) reviewed a decade’s worth of research on the nature and determinants of marital satisfaction. Their rationale for studying this construct stemmed from its centrality in individual and family well-being, from the benefits to society when strong marriages are formed, and from the need to develop interventions for couples in distress. The findings showed that marital satisfaction, on average, tends to drop markedly over the first 10 years of marriage, often occurring after the birth of a child, and then declines more slowly in the ensuing decades (Bradbury et al., 2000). Several reviews of research on marital satisfaction among couples facing life stressors, such as chronic illness, show that couples choose very diverse adaptation strategies (e.g., Gritz, Wellisch, Siau & Wang, 1990; Hazard, Munakata, Bigal, Rupnow & Lipton, 2009; Lewis, Woods, Hough, & Bensley, 1989; Quittner, Espelage, Opipari, Carter, Eid, & Eigen, 1998). Many of these studies reviewed documented successful adaptation to extreme difficulties and remarkable resilience. Bradbury et al. (2000) believe that experimental studies are warranted that will strengthen relationships by affecting change either in events that couples confront or in their responses to specific events. Marital satisfaction is influenced by many factors. Chronic illness in a spouse can heavily influence perceived marital satisfaction for both the patient and the spouse.

Depression

According to the American Psychiatric Association, depression is characterized by a depressed mood and/or loss of interest or pleasure in life activities for at least two
weeks and at least five of the following symptoms that cause clinically significant impairment in social, work, or other important areas of functioning almost every day:

1. Depressed mood most of the day.
2. Diminished interest or pleasure in all or most activities.
3. Significant unintentional weight loss or gain.
4. Insomnia or sleeping too much.
5. Agitation or psychomotor retardation noticed by others.
6. Fatigue or loss of energy.
7. Feelings of worthlessness or excessive guilt.
8. Diminished ability to think or concentrate, or indecisiveness.

The Centers for Disease Control (2010) estimate that one in ten U.S. adults report depression with the following groups more likely to meet the criteria for depression: persons 45-64 years of age, women, blacks, Hispanics, non-Hispanic persons of other races or multiple races, persons with less than a high school education, those previously married, individuals unable to work or unemployed, and persons without health insurance coverage.

*Relationship between Chronic Illness, Marital Satisfaction and Depression*

Chronic illness in a family affects each individual member of the family. However, the magnitude and nature of the effect may vary from member to member. Quittner, Espelage, Opopari, Carter, Eid and Eigen (1998) examined role strain in married couples caring for a child with chronic illness compared to marital role strain in couples with a healthy child. Couples with a chronically ill child reported greater role
strain on measures of role conflict, child-care tasks and exchanges of affection. However, no reliable group differences were found in marital satisfaction or depression. Other research studies that focus on marital satisfaction and depression among couples in which either the husband or wife have a chronic illness show very different results.

Flor, et al. (1987) studied the impact of a partner’s reported chronic pain on the spouse. Results indicated that for patients reporting considerable pain, their spouses experienced considerable change in reported marital satisfaction. The findings indicated that not only was chronic pain associated with problems in the marital relationship, but with heightened distress and physical symptoms in the spouses as well. Similarly, Schwartz et al. (1991) studied marital couples within which one partner experienced chronic illness and they found it had a direct impact on marital satisfaction. The study sought to examine the role of patient and spouse-related factors in the development of emotional stress. Twenty-eight percent of the spouses in the sample reported experiencing a significantly depressed mood. Subsequent analyses revealed three predictors of the spouse’s depressed mood: the patient’s average pain level, the patient’s reported levels of anger and hostility, and the spouse’s level of marital satisfaction. Furthermore, Kouros, Papp and Cummings (2008) found that at high levels of conflict, the negative relationship between marital satisfaction and depressive symptoms was strengthened. Thomas and Roy (1989) studied the functioning of couples in which one partner experienced chronic pain. Results revealed serious difficulty in virtually all aspects of couple functioning. Depressed subjects reported higher levels of couple dysfunction than non-depressed subjects. However, duration of pain was found to be unrelated to family adaptability, family cohesion and family stability.
Bigatti, Brown, Steiner and Miller (2011) examined the coping strategies of husbands of patients with breast cancer compared to husbands of women without cancer. Results showed that among husbands of breast cancer patients, their higher use of distancing, accepting responsibility, and escape-avoidance coping styles were associated with higher levels of stress and symptoms of depression, and that distancing and accepting responsibility were associated with lower marital satisfaction.

Length of relationship has been shown to be a factor in a couple’s marital satisfaction (Kurdek, 1999). Length since diagnosis of a chronic illness may also prove to be a factor. Hagedoorn, Kuijer, Buunk, DeJong, Sanderman, and Wobbes (2000) studied marital satisfaction in patients with cancer and the impact of support from intimate partners. The results showed that patients who had been diagnosed for a longer period of time reported being more distressed. Other findings included active engagement which was positively associated with marital satisfaction and protective buffering and overprotection which were negatively correlated with marital satisfaction.

Timing of illness also seems to influence marital satisfaction. Wilson and Waddoups (2002) studied the impact of health status on marital dissolution for couples in late mid-life (51-61 years of age). Evidence showed that a health mismatch (one spouse becomes chronically ill while the other remains healthy) negatively impacted only those couples who had reported that their marriages were very satisfactory before the onset of illness. Couples who reported being dissatisfied with their relationship before the onset of illness viewed the change of health status as having a minor consequence. When comparing the marital adjustment of couples with two chronically ill partners to couples with only one partner affected by chronic illness, Carter and Carter (1994) found that
spouse health was found to significantly affect how illness was perceived. However, greater imbalance and potential stress occurred in marriages with only one ill spouse as compared to those with two ill spouses.

A reciprocal relationship between pain and quality of relationships is thought to exist. Chronic pain has a negative impact on relationship satisfaction and inversely the quality of relationships may affect the pain experience. Specifically, research suggests that patients with pain and their partners present greater psychological, marital, and sexual difficulties compared to pain-free couples (Waxman, Tripp & Flamenbaum, 2008). Cano, Weisburg and Gallagher (2000) investigated marital satisfaction and pain severity as mediators of the relationship between spouse responses to pain and depressive symptoms. Path analyses suggested that more frequent negative spouse responses to pain were associated with increased pain severity and decreased marital satisfaction, which were linked to increased depressive symptoms.

Numerous studies show a direct connection between chronic illness, quality of life, marital satisfaction and depression. Few studies included well-spouses in their sample. Studies assessing the specific effect of migraine on well-spouses, as reported by the well-spouse directly, are lacking. The episodic and unpredictability of migraine attacks create a different challenge for patients and families. These unique factors limit the generalizability of findings reported in research focused on chronic illness in general.

*Migraine Impact*

**Impact of Migraine on Women**

Migraine occurrences are frequently higher during the woman’s child-bearing and family caregiving years (Smith, 1998). Migraine is more prominent in women in every
culture worldwide. Hormonal fluctuations of estrogen and progesterone appear to increase the risk of migraine and their severity in women. About 60% of women with migraine report attacks are associated with their menstrual cycle (Diamond, 2007). Migraine may escalate in pregnant women during the first trimester, but they often improve during the final trimester (Pringsheim, Davenport, & Dodick, 2008). Perimenopause has been linked to the onset of new and worsening migraine attacks. About two-thirds of women with migraine experience a remission of their headaches after menopause (Diamond, 2007).

Yalug, Selekler, Erdogan, Kutlu, Dundar, Ankarah, and Aker (2010) noted that people suffering from migraine experience symptoms of depression and are diagnosed with depression at a higher rate than the general population and matched controls. Recently, Rist (2012) reported that women who have migraines are more likely to develop depression than women who have never had migraines. Specifically, women with any history of migraine were 36% more likely to develop depression compared to women with no history of migraine. Women with a past history of recurrent migraine were 41% more likely to experience depression.

Migraine can inflict a significant burden on the psychological wellbeing of women. The negative effects can be seen in their social, work and family lives. As reported by Stronks, Tulen & Peplinkhuizen (1999) in their multinational study on the impact of migraine on women, 62% of the 900 plus participants reported one or more occurrences of being unable to spend time with family or friends and 67% reported being unable to enjoy recreational activities. The female patients with migraine were described as careful, passive, fearful, insecure, rigid, obsessive, depressed, and prone to reacting to
stressful events with a high rate of anxiety. Restriction of daily activities, persisting for 1 – 2 days during a migraine, was also found more often in women than men (Stronks, Tulen, & Pepplinkhuizen, 1999).

The literature shows that women are more likely to experience migraine and suffer more far reaching consequences from their migraines than do men. The tendency for migraine to intensify during a woman’s childbearing and employment years compounds the impact of the illness for patients and partners as well as their children.

Impact on Quality of Life between Attacks

The research reviewed indicates that the lives of patients are impacted in numerous domains including occupational, academic, social, leisure, and family life responsibilities. Patients reportedly experience impairment between attacks in addition to actual headache episodes. Buse, Rupnow & Lipton (2009) reported that fear and anxiety regarding impending attacks were found to reduce well-being and quality of life for the patients they studied.

Interictal burden (in-between attacks) is reported by the majority of those experiencing migraines. In a U.S. study conducted via an online poll, 76% reported that they worried that they would have migraine for the rest of their lives and 37% worried about migraine between attacks (Buse et al., 2009). In a mail survey conducted in Sweden, fewer than half of the respondents said that they recover completely between attacks (Dahlof & Dimenas, 1995). Migraine patients reported a lesser sense of well-being, interictal anxiety, phobic avoidance of activities and increased medication use as patients often took pain medication in anticipation of a future attack (Dahlof & Dimenas, 1995). Diamond (2007) pointed out that being symptom free does not necessarily mean
that one is not being impacted by migraine. Interictal disruptions are often manifested as symptoms of depression, anxiety, non-headache pain, fatigue or other somatic complaints. Comparisons between migraine patients and non-migraine subjects concluded that those with migraine were more likely to perceive disturbed contentment, vitality, and sleep, a lesser sense of well-being, and a higher incidence of anxiety and emotional stress. Freitag (2007) noted that health care professionals need to take into account the entire cycle of migraine, which includes the worry between attacks. Worry in expectation of an attack has negative effects on the family, and the social lives and work productivity of patients with migraine.

**Impact of Migraine on the Patient’s Partner/Spouse**

Lipton et al. (2003) attempted to measure the effects of migraine felt by partners. Compared with partners of individuals who did not have migraine, a statistically significant higher proportion of migraine partners were dissatisfied with work demands placed on them, their increased level of responsibilities and duties and with their ability to perform. The patients reported their perceptions of impact on spouses/partners as well. They reported that they were more likely to argue with partners, were less able to do household work, more likely to miss family social and leisure activities and would be better partners but for their headaches. Others stated "other" negative effects on relationships at home.

Diamond (2007) studied the impact of migraine on the health and well-being of women. His study participants reported disruptions in their family and social lives, as well as in their physical relationships with partners. The patients noted that their partners worry about, are annoyed by or do not understand their pain. Arguments between
partners were perceived to be more common due to migraines. The patients believed that they would be better partners if they did not have migraines and partners reported negative effects on relationships attributable to partner migraines.

Lipton et al. (2003) conducted a telephone survey of migraine patients and partners from both the United Kingdom and the United States. The quantitative research results showed that migraines impacted the division of household work, the ability to attend social and leisure functions, and the likelihood of partner arguments. The identified burdens that reportedly fall on the partners of those with migraines include but are not limited to: increased household chores, decrease in social and leisure activities, changes in sexual relationships, emotional tolls, increased financial pressures (i.e., higher costs, lower income potential, missed work days) and shift in parental responsibilities.

Roy (2006) reported that chronic pain or illness in a spouse, generally speaking, is capable of producing profound changes in the functioning of the family. Roy (2006) found that the capacity to solve problems was compromised for 100% of the families affected by headache, compared to 75% of families affected by back pain. Direct and clear communication was replaced by various forms of unsatisfactory communication patterns. Partners were forced into assuming greater levels of responsibility, having to deal with a high level of unpredictability, and finding that the level of sexual involvement with their partner is greatly decreased. Partners may feel rejected, angry, fatigued, defensive, guilty and even fearful of hurting their partner (Roy, 2006).

Silver (2004) reported similar findings in research focused on chronic illness in general. She pointed out that most couples enter into their relationships as equal partners. Once a partner develops a chronic illness, the well spouse is suddenly faced with much
more responsibility, a greater workload, increased household duties, increased medical expenses and the potential loss of a loving and sexually fulfilling relationship. She pointed out that well partners are likely to develop new health problems as a result of the added stress of caring for a chronically ill partner. They may experience helplessness, depression, anxiety, sleep problems, gastrointestinal changes and even pain. Other common realities for these couples include a higher divorce rate, and increased infidelity.

Bigal, Bigal, Betti, Borrdini and Speciali (2001) reported that evaluation of disease impact on the patient’s quality of life is fundamental to treating patients and that the objective is to help the patient obtain a more engaged life preserving equilibrium and well-being. This obviously extends to the impact on quality of life for the partner/spouse as well.

The current literature demonstrates the significant burden imposed by chronic illness and carried by the patient, partner and children. Disruption of family functioning, changes in roles and responsibilities, decreased intimacy, change in mental health status and lowered self-esteem have all been documented as consequences of chronic illness. Limited research on migraine impact exists. The limited collection available relies mostly upon data reported by patients themselves who attempt to describe how they feel their families are affected. However, current literature does show some overlap between chronic illness effects and migraine impact.

Impact of Migraine on the Family

The limited research focusing on the impact of migraine on the patient’s family lends some support to the argument that the impact of migraine is felt not only by the patient but by other family members as well (Belam, Harris, Kernick, Lindley, McWatt,
Mitchell & Reinhold, 2005; Cottrell, Drew, Waller, Holroyd, Brose, & O’Donnell, 2002; Lipton et al., 2003, Ruiz de Velasco et al., 2003). Specifically, Belam et al. (2005) found that one in three migraine sufferers believe that their condition controls their life and the impact of migraines extends to friends and family. It then follows that the family unit cannot help but feel a significant impact from the chronic migraine attacks experienced by the mother/wife/female companion. Ruiz de Valeasco et al. (2003) conducted a qualitative study of migraine patients in Spain. He spoke with relatives of migraine patients and found that family members often described themselves as figuratively also having headaches. In other words, when one family member is diagnosed as having migraines, the whole family perceives having received the diagnosis. Relatives expressed anger, annoyance, being fed up, and an inability to understand the migraine experience.

Past research has made some attempt to examine the impact of migraine headaches on the role of parenting. Lipton et al. (2003) conducted a study that found a negative impact on the ability of migraine patients to fulfill parenting roles. Parents reported that migraine in a parent adversely influenced their children’s school attendance. Data from the 1989 National Health Interview Survey concerning migraine occurrence and impairment was analyzed by Stang and Osterhouse (1993) to assess the impact of migraine on the US population. They found that migraine caused an estimated 10% of US school-aged children to miss at least one day of school during a two-week period. Families with children under age 12 reported that as a consequence of migraine attacks, parental care of children had to be abandoned (61%), outings cancelled (56%), and alternative child-care arrangements were needed (42%), (Smith,1998). Migraine impact
on families clusters around daily living activities. Parenting and fulfilling social roles are particularly challenging for families touched by migraine.

Financial Impact of Migraine

According to Stang et al. (1993) and Hu, Markson, Lipton, Stewart and Berger (1999), the annual cost of migraines to society is projected to be between $13 and $17 billion. Persons with migraine lose an average of 4 – 6 work days each year with a total loss nationwide of 64-150 million workdays. Research on direct and indirect costs of migraine indicates that patients have about twice as many medical claims as patients without migraine, have 2.5 times as many pharmaceutical claims and higher emergency room use.

Stang, Crown & Bizier (2004) reported that migraine headaches have a direct economic impact on families. Total medical costs of families with at least one person diagnosed with migraine were 70% greater than matched families with no one with migraines. The study found that the number of short-term disability days was 2.3 times higher in migraine families compared to matched non-migraine families. The employed parent in a migraine family lost, on average, four additional sick days per year, five additional short-term disability days and three additional workman’s compensation days compared to parents in non-migraine families. Hawkins, Wang and Rupnow (2007) found that a cohort of migraine patients incurred higher indirect costs in all categories studied, including absence, short term disability, and workers’ compensation. The total indirect costs for the migraine cohort were $4453 per year compared to $1619 for the non-migraine cohort.
Limited treatment options exist for migraine. Current treatment options are expensive and often bring only temporary relief. When pharmaceutical options do not resolve the migraine, the patient’s next step is to seek care at an urgent care facility or hospital emergency room. Even fully insured patients will face a substantial financial cost when securing this level of care. Migraine patients tend to utilize a significant share of the family’s resources, creating an impact felt by the family as a whole.

**Family Systems Theory and Chronic Illness**

Basic tenants of the systems perspective are described by Collier (1990) and include:

- Properties and operations of general systems theories can be applied to different disciplines and problems
- System theories are concerned with interrelatedness
- No one can understand a discrete entity by examining the entity in isolation
- The nature of a part becomes known by examination of its connections to other entities within a larger whole, but the whole is more than the sum of its components
- Reciprocal influence is a key component
- Systems have hierarchical levels
- Systems operate directionally and seek achievement of a desirable state
- Feedback loops within the system are positive or negative; positive loops amplify the action in a system, negative loops restrain the action in a system (p. 5).
Collier (1990) proposed that for human beings with chronic illness, the physiological system is the level of analysis in the pathology of the disease; the individual self is the focus of concern for health care professionals; and the family system is the level of analysis for effects of illness on the individual as well as other members of the family.

Rolland (1999) studied parental illness and disability viewed through a family systems framework. He proposed that with chronic disorders a biopsychosocial model should be conceptualized from a family systems perspective, with the family as the interactive focal point. He suggested that the illness, individual and family were intertwining threads. His model is based on a strength-oriented perspective that views the family relationship as a resource emphasizing possibilities of resilience and growth. The model demonstrates the goodness of fit between psychosocial demands of chronic illness and the strength and vulnerabilities of the family members.

Burman and Margoin (1992) studied the relationship between marital relationships and health problems. They posited that the association between interpersonal variables and health is reciprocal, with poor health affecting interpersonal relationships and with interpersonal variables affecting health. This assumption reflects a systems approach in which all aspects of a family’s interactions are affected by and affect their interactions with one another and the larger social system. Chronic illness may affect finances, division of responsibilities, mutual activities, marital satisfaction and the way in which partners view each other.
Pedersen and Revenson (2005) examined the relationship between parental illness, family functioning and adolescent well-being. Using a family ecology framework, a version of systems theory, they listed four basic theoretical principles:

- Individual behavior can only be understood within its social context.
- Individuals exist within a number of interdependent systems.
- The reciprocal relationships between individuals and the social systems with which they interact are essential for understanding development and adaptation.
- Variables beyond the level of individual attributes must be included in order to understand adaptation processes (p.405).

While the focus of their study was on the relationship between parent and teen, these same theoretical principles are applicable in the context of the patient and spouse relationship. This patient/spouse relationship is the subsystem that is examined in the current study. Patient/partner interactions, couple interdependence, reciprocal influence and the ability of the subsystem to adapt to feedback will be investigated within the context of the migraine experience.

Summary

Migraine can be characterized as a chronic disorder with episodic attacks, with potential for progression to more frequent and severe patterns. Migraines are associated with substantial functional impairment, including both physical and emotional ramifications. Migraines have been shown to have a significant impact on family relations and work productivity. Lives of patients are impacted in numerous domains including occupational, academic, social, leisure, and family life and responsibilities.
Patients reported they would be better partners if they did not have migraines. Partners of patients reported negative effects on relationships attributable to partner migraines. Based solely on the patient’s perspective, research findings indicate that family functioning is disturbed, parental roles are disrupted and spousal relationships are harmed. Once a partner develops a chronic illness, the well spouse is suddenly faced with more responsibility, a greater workload, increased household duties, higher medical expenses and the potential loss of a loving and sexually fulfilling relationship.

The current literature, however, fails to fully describe the impact of migraine headaches on the relationships between patients and their spouse/significant other. The limited research on the impact on partners who experience the migraine second hand has generally been captured through the viewpoint of the female migraine patient. The unique contribution of this study will be the self-reporting of migraine impact by the male partners. By engaging migraine couples in the current study, male partners will report their perceived impact of the patient’s migraine on their own quality of life, depression status and marital satisfaction.

Specifically, the study will investigate the impact of migraine on the partner’s activities of daily living, ability to fulfill roles, social and leisure pursuits, emotional functioning, level of depression, behaviors related to intimacy, level of frustration and satisfaction with spouse/relationship. While limited literature attempts to describe such an impact from the perspective of chronic disease in general, often recruiting samples from patients with arthritis and back pain, the current study explores the unique impact specific to the migraine experience. Through exploration of the migraine experience specific to the patient/partner subsystem, the researcher seeks to contribute to the literature in such a
way as to better inform patients, partners, health care professionals and human service professionals about the broader impact of migraine beyond the patient’s physical experience. Such knowledge will enhance the ability of families to cope with the migraine experience, inform professionals regarding more effective and holistic treatment approaches, and further assist human service professionals in the identification of appropriate support systems and resources for the patient, partner and family unit.
Chapter 3

METHODOLOGY

Introduction

The present exploratory study employed a correlational research design. In correlational research, the relationships among two or more variables are studied without any attempt to influence the relationships (Frankel & Wallen, 2009). Correlational research can be a form of descriptive research as it describes existing relationships between variables. The purpose of this type of research design is to help explain behavior or predict likely outcomes. Correlational research, however, does not establish cause and effect relationships. This methodology chapter will describe the steps that were taken to conduct the research study. Target population characteristics, recruitment procedures, key variables and the measures selected to assess them, and data collection, processing and analysis procedures as well as study assumptions and limitations will be addressed.

Target Population

Heterosexual couples were recruited to complete the online questionnaires. The couples were currently married or cohabitating for a minimum of one year. The female partners had a history of chronic migraines for at least six months and the male partners were free from migraine headaches. Participants were between 21 and 55 years of age, fluent in reading English, possessed basic computer literacy skills and had access to a computer with an internet connection.

Verification of chronic migraine was assessed through the self-directed completion of a checklist containing the specific diagnostic criteria from the International Headache Society Criteria for Migraine (IHS, 1988). The overwhelming majority of
research on migraines uses the IHS diagnostic criteria for verification of migraine
diagnosis in sample participants (e.g. Bigal et al., 2001; Buse et al., 2009; Lipton et al.,
2003; Moloney et al., 2008; Smith, 1998).

**Recruitment Strategies**

After UNM Internal Review Board approval, participants were recruited through
announcement postings on websites and Facebook pages hosted by migraine advocacy
and patient support individuals/organizations (see Appendices A and B). This purposeful
sampling technique allowed for greater specificity of persons who possessed the
necessary information about the population of interest (Fraenkel & Wallen, 2009).

**Subjects**

After the study data collection concluded, a total of 20 matched couples had
completed the on-line surveys. Similar to what Smith (1998) experienced when trying to
study the impact of migraine on spouses, recruitment of migraine patient spouses/partners
was challenging. Although a total of 65 patients completed the study, 45 patients
submitted data that could not be matched to a partner data set. Following consultation
with the Dissertation Chair, the decision was made to split the data into two samples, the
20 matched couples and the 65 patient only respondents (20 patients from the couples
data set and the additional 45 unmatched patients). Study questions one through four
were answered using the couples only data. Study question five was answered using the
patient only data.
Variables and Measures

Background Information

The Background Information Form (see Appendix C) was developed by the researcher. Information collected included: unique couple identifiers consisting of patient and partner initials and partial zip codes, current age, education level, employment status, occupation, length of current relationship, chronic illnesses if any, household membership, number of visits to physician for migraine care in past 12 months, year of migraine diagnosis (patient version only), male partner list of chronic illnesses, if any, previous exposure to/experience with a friend or relative with migraine headaches, extent to which participant thinks the other’s (patient or partner) quality of life is negatively impacted by migraine, participant’s projection of the other’s (patient or partner) current level of marital satisfaction. It is estimated that the Background Information Form took eight to 10 minutes to be completed.

Quality of Life

This variable was measured by using the Migraine Specific Quality of Life Measure (MSQ Version 2.1) developed by pharmacoeconomic scientists at Glaxo Wellcome Inc. in 1992. Written permission was obtained from Glaxo Wellcome, Inc. to use the tool (see Appendix D). The MSQ is a disease specific, quality of life instrument with three hypothesized scales that have been developed, tested and revised. The three scales measure the constructs of role function-restriction, role function-prevention and emotional function. Role function restriction examines the degree to which performance of daily activities is limited by migraine, whereas role function-prevention examines the
degree to which performance of daily activities is interrupted by migraine. Emotional function examines feelings of frustration and helplessness due to migraine.

The MSQ 2.1 questionnaire contains 14 items with response categories consisting of a six-point Likert-type scale with one being none of the time and six being all of the time. Validity and reliability testing for the current MSQ Version 2.1 was conducted by Martinet al. (2000). The results showed that Cronbach’s alpha coefficient of internal consistency ranged from .86 to .96 and intraclass correlation coefficients ranged from .57 to .63 across all three dimensions. The correlation between the scores for the MSQ and the Short Form 36, a similar quality of life instrument, indicated convergent validity. In 2007, Cole, Lin and Rupnow also conducted a validation study of the MSQ Version 2.1 and found similar results. Coefficient alpha for the MSQ scales for the three dimensions were .915, .841 and .850. Meta-analytically derived $z$ scores indicated a large convergent effect size and a small discriminant effect size (see Appendix E for a copy of the measure).

The MSQ 2.1 questions were slightly modified to produce the partner version of the survey. The only change in the wording of the items was to change “my migraines” to “your partner’s migraines.” It is estimated that each version of the MSQ took less than 10 minutes to complete.

**Depression**

Depression has been found to be related to both quality of life and chronic illness. This variable was measured by the Beck Depression Inventory originally developed by Aaron T. Beck, M.D. in 1961 (Beck & Steer, 1993). The measure used, the revised BDI-II, is a 21-item questionnaire. Each item contains four statements and respondents are
asked to choose the one that best describes their current state of mind. For example, question one asks the respondent to choose one of the following four statements: I do not feel sad, I feel sad, I am sad all the time and I can’t snap out of it, I am so sad and unhappy that I can’t stand it. Each of the four statements is weighted, allowing calculation of a total score which indicates an estimated level of depression. See Appendix F for a copy of the BDI-II. As a safety precaution, upon completion of the BDI–II survey section, a 1-800 National Hope Line phone number was provided through a pop up screen. Participants who felt they may be at risk for depression or were having thoughts of self-harm were encouraged to call the Hope Line. The survey then continued to the next measurement tool.

Beck, Steer, & Carbin (1988) reviewed research studies focusing on the psychometric properties of the BDI from 1961 through 1986. Their meta-analysis of the BDI’s internal consistency estimates yielded a mean coefficient alpha of 0.86 for psychiatric patients and 0.81 for non-psychiatric patients. The concurrent validity of the BDI with respect to clinical ratings and the Hamilton Psychiatric Rating Scale for Depression were also found to be high. It is estimated that the BDI-II took less than 15 minutes to complete.

Marital Satisfaction

Also found to be related to quality of life and chronic illness, marital satisfaction was measured for both patients and their well spouses. This variable was measured by the participant’s total scores from both the Dyadic Adjustment Scale (DAS) and the Kansas Marital Satisfaction Scale (KMS). According to Fisher & Corcoran (2007), the DAS is a 32-item instrument designed to assess the quality of the relationship as perceived by
married or cohabitating couples. It can be used as a general measure of satisfaction in an intimate relationship by using the total score. The DAS has a high level of internal consistency with an alpha level of .96. The instrument shows evidence of concurrent validity, correlating significantly with the Locke-Wallace Marital Adjustment Scale (Fisher & Corcoran, 2007).

The Kansas Marital Satisfaction scale comprises three questions with a range of response from 1 (extremely dissatisfied) to 7 (extremely satisfied). An example of the item type asks: “How satisfied are you with your current marriage/relationship?” The sum of the three responses yields a total score that indicates a particular level of marital satisfaction. This instrument is reported to have high internal consistency, with alpha coefficients ranging from 0.89-0.95. In addition, The KMS scale has shown concurrent validity when compared to similar instruments, including the Quality Marriage Index and Dyadic Adjustment Scale (DAS) (Schumm, 1986).

Crane, Middleton & Bean (2000) conducted a study to demonstrate the usefulness of the Kansas Marital Satisfaction Scale and the DAS in distinguishing between maritally distressed and non-distressed individuals. The results of the study included the development of an equivalency table of mathematical formulas, allowing the conversion of scores from one measure of marital quality to another. See Appendix G for a copy of the KMS and Appendix H for a copy of the DAS. It was estimated to take a total of thirty minutes to complete both scales.

Data Collection Procedures

Potential participants were directed to a website where, if eligible for the study, they could access the online questionnaires. A brief series of eligibility questions
regarding age, marital/cohabitating status, length of relationship, length since diagnosis, concurrent chronic illness, etc., established which respondents met the study requirements. Study participants were then led to the on-line informed consent form. The informed consent form (Appendix I) included a description of the study, potential benefits and risks of participation, information regarding future availability of study findings, confidentiality assurances, notice of voluntary participation and the option to withdraw at any time without consequence. Referral to available counseling/crisis services in their area of residence was made available should participation in the study cause distress to a participant. Once informed consent was completed, the participant was directed to a set of patient or partner questionnaires consisting of the Background Information Form, MSQ or MSQ Partner Version, BDI-II, KMS and DAS instruments.

At the end of the survey process, the respondents were asked to provide an email address to be entered into an optional drawing for a gift for participating. The email addresses were kept separate from the data as accomplished through a design by UNM Information Technology professionals so that no connection could be made between the two sets of information. The questionnaires and screening tool were created with UNM’s Opinio software and hosted on a designated, secure UNM server. The survey set was accessible for a period of five months (July 1 – November 30, 2013).

Data Processing and Analysis Procedures

This section will address the procedures that were followed when handling the collected data set.
Data Processing

The data were captured on the UNM server using the Opinio program and output was provided to the investigator in Excel format which was then entered into the STATA statistical software package. Before analysis, the researcher performed a preliminary screening on the entire data set specifically looking for potential coding errors and extent of missing data. Directions from each measure regarding processing missing data were then followed per instrument guidelines. Preparation included the transposing of item scores into transformed scores for the MSQ subdomains as required by the instrument, and summation of total scores for the BDI – II, DAS and KMS.

Data Analysis

Using the appropriate statistics, a description of the data for the measures administered is presented in Chapter 4 (e.g., frequency, mean, median, mode, standard deviation, percentage, and range) for both patients and partners. In addition, intercorrelations for subscores and total scores within and across measures were obtained for the overall sample as well as the two groups of participants.

Correlation coefficients are reported using $r$ values with significance levels of .05 or lower considered significant. Determination of relationship direction (positive or negative) and strength of relationship are identified for each significant variable. Based upon the descriptive findings for the background factors, the variables of age, length of relationship and length of migraine experience were selected for analysis. The data for these three variables met the assumptions needed for correlational analysis. Lack of variability in data prevented the researcher from using additional background factors in the analysis.
The following variables were entered into the Stata statistical software program for correlational analysis:

- Role Function Restriction (RFR) scale transformed score for males from the quality of life measure
- Role Function Prevention (RFP) scale transformed score for males from the quality of life measure
- Emotional Function (EF) scale transformed score for the males from the quality of life measure
- RFR scale transformed score for females from the quality of life measure
- RFP scale transformed score for females from the quality of life measure
- EF scale transformed score for females from the quality of life measure
- Total of RFR, RFP and EP transformed scores for males from the quality of life measure
- Total of RFR, RFP and EP transformed scores for females from the quality of life measure
- Dyadic Adjustment Scale (DAS) total score for males (measure of marital satisfaction)
- DAS total score for females (measure of marital satisfaction)
- Kansas Marital Satisfaction (KMS) total score for males (measure of marital satisfaction)
- KMS total score for females (measure of marital satisfaction)
- KMS total score for males predicted by females (marital satisfaction)
- KMS total score for females predicted by males (marital satisfaction)
- Beck’s Depression Inventory (BDI) total score for males (measure of depression)
- BDI total score for females (measure of depression)
- Male age (background variable)
- Female age (background variable)
- Number of years patient has had migraines (background variable)
- Length of relationship with partner (background variable)
Table 3.1 demonstrates how each variable was coded.

Table 3.1

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RFRM</td>
<td>MSQ role function restriction - male partner</td>
</tr>
<tr>
<td>RPRM</td>
<td>MSQ role prevention restriction - male partner</td>
</tr>
<tr>
<td>EFM</td>
<td>MSQ emotional function - male partner</td>
</tr>
<tr>
<td>RFRF</td>
<td>MSQ role function restriction - female patient</td>
</tr>
<tr>
<td>RPRF</td>
<td>MSQ role prevention restriction - female patient</td>
</tr>
<tr>
<td>EFF</td>
<td>MSQ emotional function - female patient</td>
</tr>
<tr>
<td>MSQTSM</td>
<td>MSQ subscore totals - male partner</td>
</tr>
<tr>
<td>MSQTTSF</td>
<td>MSQ subscore totals - female patient</td>
</tr>
<tr>
<td>DASTSM</td>
<td>DAS total score - male partner</td>
</tr>
<tr>
<td>DASTSF</td>
<td>DAS total score - female patient</td>
</tr>
<tr>
<td>KMSTSM</td>
<td>KMS total score - male partner</td>
</tr>
<tr>
<td>KMSTSF</td>
<td>KMS total score - female patient</td>
</tr>
<tr>
<td>BDITSM</td>
<td>BDI total score - male partner</td>
</tr>
<tr>
<td>BDITSF</td>
<td>BDI total score - female patient</td>
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<tr>
<td>KMSPBYM</td>
<td>Male prediction of female KMS score</td>
</tr>
<tr>
<td>KMSBF</td>
<td>Female prediction of male KMS score</td>
</tr>
<tr>
<td>AGEM</td>
<td>Male partner age</td>
</tr>
<tr>
<td>AGEF</td>
<td>Female patient age</td>
</tr>
<tr>
<td>MIGYRS</td>
<td>Number of years patient had migraines</td>
</tr>
<tr>
<td>RELYRS</td>
<td>Length of relationship</td>
</tr>
</tbody>
</table>

Limitations and Assumptions

The variables selected for inclusion in this correlational study are based on a sound rationale growing out of an extensive literature review. The instruments used (MSQ, BDI-II, KMS, and DAS) have been shown in previous studies to yield reliable quantitative scores.

The use of a purposeful sample and lack of random selection limits the generalizability of the results. Bias in sampling, however, may exist (i.e., limited to those
with current internet access who have reached out to a live support group or an on-line support/education/advocacy organization with an active website). Further, selection bias may occur through couples volunteering to be in the study who have more well-adjusted marriages and family lives. In addition, participants may feel the need to answer in socially acceptable ways.

The Background Information Form was added to the measures to capture detailed information about participants such as: age, length of relationship, employment status, education level, time since diagnosis and prior experience with people with migraines. Inclusion of these factors can contribute to the understanding of the results obtained. Order effects may be a possible weakness in the study since the instruments were given to each participant in the same order. However, by placing the instruments in the order of least threatening/personal and most expected topically, the comfort of the participant may have been enhanced. The self-reporting measures used cannot prevent collaboration or discussion of responses between the partners, although the participants were directed to refrain from doing so.

Replication of the study will be recommended as a strategy to determine validity of results obtained. While a strength of the study is the robustness of the questionnaires, the modification of the MSQ instrument for partner assessment presents a potential weakness. The inability to confirm the patient diagnosis of migraine is also a limitation.

Small sample size prevents generalization of study findings to any other group other than those who participated in the study. Results highlight statistically significant correlations between study variables and provide information regarding the strength and direction of such relationships. Causation/explanation for relationships, however, cannot
be established by the current study, but may identify variable relationships of interest that warrant further study.

Should future research resources increase, it would be helpful to have physician confirmation of each patient’s diagnosis. Increased resources would also allow the self-report measures to be triangulated with interviewing and observation techniques to better assess couple functioning.

A key strength of the study includes the unique contribution of information regarding the impact on the quality of life, level of depression and level of marital satisfaction for the partner of the migraine patient as reported by the actual partner himself.

The assumptions that underlie this study include:

- The test instruments used accurately measured the constructs of interest.
- The participants understood and answered all questions honestly.
- The patients and partners answered all questions independently.
Chapter 4

RESULTS

Introduction

Results of the various analyses conducted in this study are presented in this chapter. Findings are reported for the twenty matched couples as are the findings for the second sample of the sixty-five individual patients. Initially, the demographic characteristics of all participants in the study are presented as are the descriptive statistics for the measures used in the study. The remainder of the chapter reports the findings in the study for the study questions addressed and closes with a summary.

Matched Couples Sample Characteristics

Background Information Form

Twenty couples participated in the study for a total of 40 participants. All completed the background information for. The female patients ranged in age from 23 to 53 years ($M = 37.7$, Median $= 38.0$, Mode $= 42.0$, $SD = 9.8$). The male partners ranged in age from 26 to 55 years of age ($M = 39.1$, Median $= 40.0$, Mode $= 42.0$, $SD = 9.4$). Forty percent ($N = 8$) of the patients worked full-time, 15% worked part time ($N = 3$) and 45% were not employed. Ninety percent ($N = 18$) of the partners worked full time and 10% ($N = 2$) worked part time.

The reported educational level of the patients was as follows: two (10%) held a high school diploma/GED, 3 (15%) attended some college, 2 (10%) completed two years of college, 6 (30%) held a Bachelor’s degree, 2 (10%) completed some graduate work, 4
(20%) held a Master’s degree and 1 (5%) held a Doctoral degree. Partner education levels included: 3 (15%) completed high school or held a GED, 3 (15%) completed some college, 4 (20%) completed two years of college, 6 (30%) held a Bachelor’s degree, 1 (5%) reported some graduate work, 1 (5%) held a Master’s degree and 2 (10%) held Doctoral degrees.

All 20 patients reported being diagnosed with migraine by a healthcare professional. Eight (40%) of the patients reported having close contact with a friend or family member with migraine. Six (30%) of the partners reported having close contact with a friend or family member with migraine. None of the 20 partners reported having any contact with a migraine support group, nor did 12 (60%) of the patients. The remaining patients reported the following: 1 (5%) had contact about 2 – 3 times per year, 2 (10%) once per month or less, 1 (5%) more than once per month and 4 (20%) almost weekly or more.

Patients reported the number of visits to health care professionals during the previous 12 months. Five (25%) had visited their health care professional 1 – 3 times in the past year. Seven (35%) reported 4 – 6 visits, and 8 (40%) indicated they saw their healthcare professional seven times or more in the past year. Patients were asked to report the year in which their migraines began. The most recent onset of migraine was one year ago, whereas the longest period of time reported as having migraines was 36 years. The mean number of years with migraine was 18, the median was 17, the mode was 4 years and the standard deviation was 10.15. Patients were also asked to report the number of years they have been in their current relationship. The shortest length of time reported
was one year; the longest relationship was 27 years. The mean number of years reported was 12, with a median score of 10, a mode of 4 and a standard deviation of 7.69.

Patients were asked to report if anyone other than their partner was currently residing in their household. Seven (35%) reported living solely with their partner while the remainder reported living with children (10), parent and child (2) or friend and brother-in-law (1).

Co-occurring chronic illness was examined for both the patient and partner. Eight (40%) of the patients reported having a chronic illness in addition to their migraine. Co-occurring illnesses included: anxiety (1), mood disorder (1), TMJ and endometriosis (1), chronic tension headache (1), high blood pressure and diabetes (1), schizophrenia (1) celiac disease (1), and hypothyroidism (1). Two (10%) of the partners reported having a chronic illness, however, only one identified the illness, that being psoriasis.

Couples were asked to estimate the extent to which their partner’s quality of life was negatively impacted by migraines. The single question, using a seven point Likert scale, offered options ranging from no impact (1) to extremely impacted (7). The mean score for patients predicting impact on their partners was 4.1. The partner’s mean score predicting the impact on the patient’s quality of life was 4.3.

Twenty-nine participants reported how they learned about the study. Fourteen reported their source as the internet with Facebook (8) being the most frequent source, three stated a migraine support group, eleven stated a friend or family member, and one stated a flyer hanging in his/her local gym.
Patient Only Sample Characteristics

Background Information Form

Sixty-five female migraine patients completed the study. These participants included the 20 females included in the couple analysis plus an additional 45 female patients whose partners did not participate in the study. Patients ranged in age from 23 – 55 years ($M = 38$, Median = 38, Mode = 31, $SD = 8.99$). Thirty-four (52%) were employed full-time, 12 (18%) were employed part-time, and 19 (29%) were not employed. Education levels for the patients were as follows: 3 (4%) had a high school diploma or GED, 10 (15%) completed some college, 9 (14%) completed two years of college, 22 (34%) held Bachelor’s degrees, 6 (9%) completed some graduate work, 10 (15%) held Master’s degrees and 5 (8%) held Doctoral degrees. Twenty-five (38%) of the patients indicated that their partner was the only person living with them in the household. All sixty-five of the patients reported that they were diagnosed by a health care professional as having migraine.

Thirty-one (48%) reported having close contact with a friend or family member who has migraine. Physician visitation in the previous 12 months was reported by all but one the patients (98%). Twenty-two patients reported seeing a physician 1 – 3 times, 20 stated 4 – 6 times and 22 reported visits of 7 or more times. Patients reported having migraine for as short as one year and as long as 51 years ($M = 19.78$, Median = 18.5, Mode = 15, $SD = 11.38$). Length of relationship with their partner ranged from one to 37 years ($M = 12.52$, Median = 11, Mode = 4, $SD = 8.85$).
Co-occurring chronic illness was reported by 26 (40%) of the patients. Nineteen of the 26 reported having two or more chronic illnesses. Reported co-occurring illnesses are listed in Table 4.1.

Table 4.1

*Co-occurring Illnesses Reported by Patient Only Sample*

<table>
<thead>
<tr>
<th>Co-occurring Illnesses</th>
<th>Acid Reflux (n = 2)</th>
<th>Allergies</th>
<th>Anemia</th>
<th>Anxiety (n = 3)</th>
<th>Asthma (n = 4)</th>
<th>Celiac Disease</th>
<th>Chronic Fatigue</th>
<th>Cluster Headache</th>
<th>Depression (n = 6)</th>
<th>Diabetes (n = 2)</th>
<th>Endometriosis (n = 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Epilepsy</td>
<td>Fibromyalgia (n = 2)</td>
<td>Heart Murmur</td>
<td>Hypertension</td>
<td>Hypothyroidism (n = 6)</td>
<td>Irritable Bowel Syndrome (n = 6)</td>
<td>Lupus</td>
<td>Mood disorder</td>
<td>Myofascial Pain Syndrome</td>
<td>Polycystic Ovarian Syndrome (n = 2)</td>
<td>Recurring Upper Respiratory Illness</td>
</tr>
<tr>
<td></td>
<td>Rheumatoid Arthritis</td>
<td>Schizophrenia</td>
<td>Sinus Tachycardia</td>
<td>Spinal Herniation</td>
<td>Tension Headache</td>
<td>TMJ</td>
<td>Transverse Myelitis</td>
<td>Vestibular Meniere’s</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Patients were asked to share their history of contact with any type migraine support group. Thirty-five (54%) patients reported no contact, of the remainder, 2 (3%) reported contact about 2 – 3 times per year, 3 (5%) about once per month or less, 6 (9%) more than once per month and 19 (29%) almost weekly or more.

Forty-one participants reported how they learned about the study. Thirty-three reported their source as the internet with Facebook (22) being the most frequent source, five stated a migraine support group, and three chose other (personal email, migraine charity and gym flyer).

*Matched Couples Descriptive Statistics for Measures*

Migraine Specific Quality of Life Measure (MSQ Version 2.1)

The MSQ 2.1 questionnaire contains 14 items with response categories consisting of a six-point Likert-type scale. Possible raw scores for the role function-restriction
(RFR) scale ranged from 7 to 42, role function-prevention (RFP) from 4 to 24 and emotional function from 3 to 18. Patients reported raw scores for the RFR scale ranged from 10 to 26 ($M = 17.1, SD = 4.8$). Patient raw scores for the RFP scale ranged from 7 to 21 ($M = 11.9, SD = 3.9$). For the EF scale reported patient scores were between 3 and 15 ($M = 5.5, SD = 3.9$). Partners reported raw scores for the RFR scale ranged from 19 to 42 ($M = 29.5, SD = 6.4$). Partner raw scores for the RFP scale ranged from 10 to 24 ($M = 18.1, SD = 4.1$). For the EF scale reported partner scores ranged between 5 and 18 ($M = 14.1, SD = 3.3$).

Beck Depression Inventory (BDI-II)

Total scores for the BDI-II can range between 0 and 63, the higher the total score, the more severe the level of depression. A score of 21-30 indicates moderate depression, 31 – 40 equates to severe depression and 41 – 63 signals extreme depression. Patients reported raw scores between 1 and 40 ($M = 23.5, SD = 10.6$). Partners reported raw scores between 0 and 23 ($M = 8.6, SD = 6.5$). Six (30%) patients scored at 31 or above, indicating severe clinical depression. None of the partners scored at a level indicating severe clinical depression.

Kansas Marital Satisfaction Survey

On the KMS measure the patients reported raw scores ranging from 6 to 21 ($M = 16.7, SD = 3.7$). Partner raw scores ranged between 7 and 21 ($M = 15.9, SD = 4.0$). Patient prediction scores for their partner ranged between 6 and 21 ($M = 14.1, SD = 4.2$). Partner prediction of the patient’s score ranged between 8 and 21 ($M = 14.8, SD = 3.9$).
**Dyadic Adjustment Scale (DAS)**

Total scores range from 0 to 151 with higher scores reflect a better relationship. The raw scores for the patients ranged from 75 to 101 ($M = 88.7, SD = 8.1$); partner raw scores ranged from 73 to 108 ($M = 90.2, SD = 9.1$). Norms for the original sample used to develop the DAS instrument were 114 for married couples with a standard deviation of 17.8 and 70.7 for divorced couples with a standard deviation of 23.8.

*Patient Only Descriptive Statistics for Measures*

**Migraine Specific Quality of Life Measure (MSQ Version 2.1)**

On the MSQ patients received a mean score of 18.6 ($SD = 7.1$) on the RFR scale, a mean score of 13.1 ($SD = 4.5$) for the RFP scale, and a mean of 6.4 ($SD = 4.1$) for the EF scale.

**Beck Depression Inventory (BDI-II)**

Patients reported raw scores between 1 and 51 ($M = 21.4, SD = 11.7$). Fifteen patients (23%) scored at 31 or above, indicating severe clinical depression.

**Kansas Marital Satisfaction Survey**

On the KMS, the patients reported raw scores ranging from 6 to 21 ($M = 16.8, SD = 3.2$). Patients also were asked to predict the KMS score of their partner. These scores ranged between 6 and 21 ($M = 14.8, SD = 3.9$).
Dyadic Adjustment Scale (DAS)

The raw scores for the patients ranged from 73 to 110 ($M = 90.0$, $SD = 8.4$). The mean DAS score for these 65 patients is within two points of the mean scores reported for the matched couples and are 24 points below the 114 norm score for the DAS instrument.

**Matched Couples Correlation Analyses**

Table 4.2 provides an overview of the number of observations, mean, standard deviation, minimum value and maximum value for each variable.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs</th>
<th>Mean</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>RFRM</td>
<td>20</td>
<td>64.28</td>
<td>18.34</td>
<td>34.28</td>
<td>100</td>
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<tr>
<td>RPRM</td>
<td>20</td>
<td>70.75</td>
<td>20.91</td>
<td>30</td>
<td>100</td>
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<tr>
<td>EFM</td>
<td>20</td>
<td>74.33</td>
<td>22.4</td>
<td>13.33</td>
<td>100</td>
</tr>
<tr>
<td>RFRF</td>
<td>20</td>
<td>29.28</td>
<td>13.83</td>
<td>8.57</td>
<td>54.28</td>
</tr>
<tr>
<td>RPRF</td>
<td>20</td>
<td>40</td>
<td>19.33</td>
<td>15</td>
<td>85</td>
</tr>
<tr>
<td>EFF</td>
<td>20</td>
<td>16.66</td>
<td>26</td>
<td>0</td>
<td>80</td>
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<td>MSQTSYM</td>
<td>20</td>
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<td>52.94</td>
<td>86.19</td>
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<td>49.46</td>
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<td>185.95</td>
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<tr>
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<td>9.1</td>
<td>73</td>
<td>108</td>
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<td>21.33</td>
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<td>100</td>
</tr>
<tr>
<td>KMSTSM</td>
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<td>16.6</td>
<td>4.08</td>
<td>7</td>
<td>21</td>
</tr>
<tr>
<td>KMSTSF</td>
<td>20</td>
<td>17.45</td>
<td>3.76</td>
<td>6</td>
<td>21</td>
</tr>
<tr>
<td>BDITSM</td>
<td>20</td>
<td>8.6</td>
<td>6.59</td>
<td>0</td>
<td>23</td>
</tr>
<tr>
<td>BDITSF</td>
<td>20</td>
<td>23.15</td>
<td>11.41</td>
<td>0</td>
<td>40</td>
</tr>
<tr>
<td>KMSPBYM</td>
<td>20</td>
<td>14.85</td>
<td>3.96</td>
<td>8</td>
<td>21</td>
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<tr>
<td>KMSPBF</td>
<td>20</td>
<td>13.5</td>
<td>5.18</td>
<td>0</td>
<td>21</td>
</tr>
<tr>
<td>AGEM</td>
<td>20</td>
<td>39.15</td>
<td>9.36</td>
<td>26</td>
<td>55</td>
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<tr>
<td>AGEF</td>
<td>20</td>
<td>37.65</td>
<td>9.76</td>
<td>23</td>
<td>53</td>
</tr>
<tr>
<td>MYRS</td>
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<td>18.05</td>
<td>10.13</td>
<td>1</td>
<td>36</td>
</tr>
<tr>
<td>RELYRS</td>
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<td>11.75</td>
<td>7.71</td>
<td>1</td>
<td>27</td>
</tr>
</tbody>
</table>
Study Question 1a: To what extent has the partner reported that their quality of life was negatively affected by the patient’s chronic migraine (as measured by the sub-scores for role prevention, role restriction, and emotional function and the Total Score on the partner version of the Migraine Specific Quality of Life measure)?

Partner raw scores for the RFP scale ranged from 10 to 24 ($M = 18.15$, $SD = 4.18$). The raw score range for this dimension was 4 to 24, with a higher score representing a higher quality of life. The mean score of 18.15 indicates that partners are not severely impacted by their partner’s migraines in the areas of cancelled/stopped work or daily activities nor the inability to go to social activities. Partners reported raw scores for the RFR scale ranged from 19 to 42 ($M = 29.5$, $SD = 6.41$). The raw score range for this dimension was 7 to 42, with a higher score representing a higher quality of life. The mean score of 29.5 indicates that the participating partners are modestly impacted by their partner’s migraine in areas such as dealing with others, engaging in leisure activities, or getting work done. For the EF scale, reported partner scores were between 5 and 18 ($M = 14.15$, $SD = 3.36$). The raw score range for this dimension was 3 to 18. The mean score of 14.15 demonstrates that the majority of men in the study reported they were minimally impacted emotionally by their partner’s migraines and reported low levels of frustration and/or burden.

Study Question 1b: To what extent is the partner’s reported MSQ Total Score correlated with the patient’s reported MSQ Total Score?

No significant relationship was found between the patient and partner MSQ Total Score ($r (18) = .09, p < .05$). In this study population, a patient’s migraine impact severity did not correlate significantly with the severity of impact reported by the partner.
Statistically Significant Correlations Related to Quality of Life

As expected when utilizing a valid and reliable measurement tool, five of the statistically significant correlations were related to intercorrelations between the MSQ subdomains (see Table 4.3). In addition, three strong positive relationships were found between other variables, those being, female age and RFP scores for women, years with migraine and EF scores for women and female age and quality of life total score for women (see Appendix J for details).

Table 4.3

<table>
<thead>
<tr>
<th></th>
<th>RFRM</th>
<th>RFPM</th>
<th>EFM</th>
<th>RFRF</th>
<th>RFPF</th>
<th>EFF</th>
</tr>
</thead>
<tbody>
<tr>
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<td>1.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RFPM</td>
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</tr>
<tr>
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<td>0.71*</td>
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<td></td>
</tr>
<tr>
<td>RFRF</td>
<td>0.08</td>
<td>0.14</td>
<td>0.01</td>
<td>1.0</td>
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<td></td>
</tr>
<tr>
<td>RFPF</td>
<td>0.13</td>
<td>0.11</td>
<td>0.07</td>
<td>0.86*</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>EFF</td>
<td>-0.07</td>
<td>0.03</td>
<td>0.11</td>
<td>0.51*</td>
<td>0.37</td>
<td>1.0</td>
</tr>
</tbody>
</table>

* p < .05 level.

Study Question 2: What is the direction and degree of correlation, if any, between the Total Score on the MSQ questionnaire and the Beck Depression Inventory II Total Score for the patient and for the partner?

A significant negative relationship was found between these two variables for the patients (r (18) = -0.54, p <.05) and the partners (r (18) = -0.5841, p <.05). As the quality of life score dropped, the depression score rose and vice versa. For this study population, those whose daily lives were disrupted by migraines had higher depression scores. This finding is consistent with previous studies examining the relationship between chronic pain conditions and depression previously discussed in Chapter Two.
As shown in Table 4.4, six statistically significant correlations were identified among variables related to depression. Four of these correlations were between the BDI total score and a subdomain of the MSQ, one between BDI and MSQ total score and one between the BDI and DAS total score.

Table 4.4

<table>
<thead>
<tr>
<th></th>
<th>RFPM</th>
<th>EFM</th>
<th>EFF</th>
<th>MSQTSM</th>
<th>MSQTSF</th>
<th>DASTSF</th>
</tr>
</thead>
<tbody>
<tr>
<td>BDITSM</td>
<td>-0.57*</td>
<td>-0.58*</td>
<td>-0.37</td>
<td>-0.58*</td>
<td>-0.26</td>
<td>0.33</td>
</tr>
<tr>
<td>BDITSF</td>
<td>0.04</td>
<td>0.07</td>
<td>-0.68*</td>
<td>0.02</td>
<td>-0.54*</td>
<td>0.48*</td>
</tr>
</tbody>
</table>

* p < .05 level.

**Study Question 3a:** What is the level of marital satisfaction for the patient and the partner as reported by their Total Scores on the Dyadic Adjustment Scale and Kansas Marital Satisfaction measures?

Patient scores for the DAS ranged from 75 to 101. The mean score was 88.7 which is 26 points below the norm of 114, suggesting that the patients in this study had a lower level of satisfaction than the general population. The patient KMS scores ranged from 6 to 21 with a mean of 16.75. Twenty-one is the maximum score for the KMS tool, which would represent total satisfaction with the relationship. The study patients reported a fairly high level of marital satisfaction on the KMS.

The partners reported DAS scores ranging from 73 to 108 with a mean of 90.25, which is 24 points below the norm score of 114. This score suggests that the partners also have a lower level of marital satisfaction than the general population. Partner KMS scores ranged between 7 and 21 with a mean of 15.9. Thus, partners reported a fairly high level of marital satisfaction on the KMS.
While both the DAS and KMS instruments are designed to measure marital satisfaction, the statistical analysis found a moderately strong negative relationship between the two scores for the partners \( r (18) = -0.46, p < .05 \). An additional correctional analysis was conducted to further explore the contradiction between the two measures. Table 4.5 shows the results of the correlation between the KMS individual items and the DAS total scores for both the female patients and the male partners.

**Table 4.5**

*KMS Individual Item and DAS Total Score Correlations*

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. DASTSF</td>
<td>1.00</td>
<td>-.51*</td>
<td>-.33</td>
<td>-.33</td>
<td>.68**</td>
<td>-.13</td>
<td>-.46*</td>
<td>-.50*</td>
</tr>
<tr>
<td>2. KMSQ1F</td>
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<td>.90**</td>
<td>.90**</td>
<td>-.62**</td>
<td>.08</td>
<td>.29</td>
<td>.31</td>
<td></td>
</tr>
<tr>
<td>3. KMSQ2F</td>
<td>1.00</td>
<td>.98**</td>
<td>.49*</td>
<td>.27</td>
<td>.28</td>
<td>.35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. KMSQ3F</td>
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<td>.49</td>
<td>.27</td>
<td>.29</td>
<td>.34</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. DASTSM</td>
<td>1.00</td>
<td>-.07</td>
<td>-.58**</td>
<td>-.58**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. KMSQ1M</td>
<td>1.00</td>
<td>.53*</td>
<td>.53*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. KMSQ2M</td>
<td>1.00</td>
<td>.93**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>8. KMSQ3M</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

* Correlation is statistically significant at the .05 level (2-tailed).
** Correlation is statistically significant at the .01 level (2-tailed).

The KMS question one, how satisfied are you with your marriage/relationship, was particularly perplexing. For male partners, their DAS Total Score and the female patient response to KMS question one had no statistically significant correlation. Yet, their DAS Total Score had a strong statistically significant relationship with the female patient responses to KMS questions two and three. For female patients, their DAS Total Score had a strong negative correlation to their own response to the KMS question one.
but no statistically significant correlation to their KMS question two nor question three answers.

The male partner DAS Total Score was found to have a strong, negative, statistically significant correlation with all three of the female patient KMS question scores. The female patient DAS Total Score was found to have a strong, negative, statistically significant correlation with the male partner KMS scores for questions one and two.

**Statistically Significant Correlations Related to Marital Satisfaction**

As shown in Table 4.6, fourteen statistically significant correlations related to marital satisfaction were identified in the study.

Table 4.6

*Statistically Significant Correlations Related to Marital Satisfaction*

<table>
<thead>
<tr>
<th>Variable 1</th>
<th>Variable 2</th>
<th>Correlation</th>
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<tbody>
<tr>
<td>DASTSM</td>
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<tr>
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<td>DASTSM</td>
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<td>DASTM</td>
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<tr>
<td>KMSPBM</td>
<td>EFM</td>
<td>-0.51</td>
</tr>
<tr>
<td>KMSPBM</td>
<td>MSQTSM</td>
<td>0.47</td>
</tr>
<tr>
<td>KMSPBM</td>
<td>DASTSM</td>
<td>-0.66</td>
</tr>
<tr>
<td>KMSPBM</td>
<td>KMSTSM</td>
<td>0.66</td>
</tr>
<tr>
<td>KMSPBM</td>
<td>KMSTSF</td>
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</tr>
<tr>
<td>KMSPBM</td>
<td>RFRF</td>
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</tr>
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<td>KMSPBF</td>
<td>MSQTSF</td>
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</tr>
<tr>
<td>KMSPBF</td>
<td>DASTSM</td>
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<td>KMSPBF</td>
<td>KMSTSF</td>
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<tr>
<td>AGEM</td>
<td>KMSTSM</td>
<td>-0.53</td>
</tr>
<tr>
<td>MGYRS</td>
<td>DASTSM</td>
<td>0.49</td>
</tr>
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</table>

p < .05 level
Study Question 3b: What is the correlation, if any, between the patient’s predicted partner level of marital satisfaction and the actual spouse’s reported level of marital satisfaction on the KMS?

No significant correlation was found between the patient’s predicted partner score on the KMS and the actual partner KMS score. A moderately strong positive relationship \((r (18) = 0.51, p < .05)\) was found between the female predicted male KMS score and the KMS (self-reported) score for women. The majority of the men reported higher levels of satisfaction than their female partners predicted.

Study Question 3c: What is the correlation, if any, between the partner’s predicted patient level of marital satisfaction and the patient’s actual reported level of marital satisfaction as measured by the KMS?

There was a moderately strong positive relationship \((r (18) = 0.52, p < .05)\) between the partner predicted patient KMS score and the actual patient reported KMS score.

Study Question 4: To what extent, if any, do the background factors of age, length of relationship and number of years with migraine correlate with the DAS marital satisfaction Total Score and/or the KMS Total Score?

A moderately strong negative relationship \((r (18) = -0.53, p < .05)\) was found between male age and KMS total score for men. A moderately strong negative relationship \((r (18) = -0.49, p < .05)\) was found between female age and KMS total score for women. A moderately strong positive relationship \((r (18) = 0.49, p < .05)\) was found between years of having migraine and DAS total score for men.
**Patients Only Correlation Analyses**

**Study Question 5:** To what extent, if any, are the MSQ Total Score, BDI II Depression Total Score and DAS marital satisfaction Total Score correlated in the patient only sample?

As shown in Table 4.7, two statistically significant correlations were found. A moderately strong negative relationship was found between the quality of life score and the depression score. A weak negative relationship was found between the marital satisfaction score on the KMS and the marital satisfaction score on the DAS.

Table 4.7

*Women Only Variable Descriptive Statistical Summary and Correlation Matrix*

<table>
<thead>
<tr>
<th>Variable</th>
<th>MSQTSF</th>
<th>DASTSF</th>
<th>BDITSF</th>
<th>KMSTSF</th>
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<td>11.79</td>
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<td>3.25</td>
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</table>

<table>
<thead>
<tr>
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<th>DASTSF</th>
<th>BDITSF</th>
<th>KMSTSF</th>
</tr>
</thead>
<tbody>
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<td></td>
<td></td>
</tr>
<tr>
<td>DASTSF</td>
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</tr>
<tr>
<td>BDITSF</td>
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<td>0.0955</td>
<td>1.0000</td>
<td></td>
</tr>
<tr>
<td>KMSTSF</td>
<td>-0.0649</td>
<td>0.2993*</td>
<td>-0.0840</td>
<td>1.0000</td>
</tr>
</tbody>
</table>

*p<.05 level.

**Summary**

Twenty couples participated in the study, ranging in age from 23 – 55 years of age. Fifty-five percent of the patients and 45% of the partners held college degrees. Eleven of the patients worked at least part time and all twenty of the partners were employed. All twenty patients reported being diagnosed with migraine by a health care professional, and all twenty had seen their physician in the past year. The average length of relationship was 12 years.
The self-reported impact of migraine on the patient’s partner in the domains of role restriction, role prevention and emotional function ranged from minimal to modest. No significant relationship was found between the patient and partner MSQ Total Score. The patient’s severity of impact did not predict the severity of impact reported by the partner.

A significant negative relationship was found between the MSQ Total Score and the Beck Depression Total Score for both the patients and partners. For both groups, as the quality of life score dropped, the depression score rose and vice versa.

While both patient’s and partner’s DAS marital satisfaction scores were about 25 points below the normed scores for the general population, both reported fairly high levels of marital satisfaction. The DAS mean total score for patients was 88.7, and partners averaged a score of 90.25. KMS total score mean for patients was 16.75, and 15.9 for partners. Both measures indicate that the patients and partners report their levels of marital satisfaction as being very similar. When predicting levels of satisfaction, partners were more accurate at predicting the patients’ level of satisfaction than vice versa. Patients tended to rate the partner’s level of satisfaction as being lower than the actual reported score. For both the patient and the partner, marital satisfaction scores decreased as the age of the respondent increased.

In addition to the analysis of the twenty couples, an analysis of sixty-five female migraine patients, ages 23 – 55, who completed the study was also conducted. Forty-six of these respondents worked at least part time and 38 had earned at least a bachelor’s degree. All sixty-five reported being diagnosed with migraine by a health-care professional. Sixty-three had seen a physician in the past year. The mean length of
relationship was 12 years. Twenty three percent of the 65 patient only respondents had a BDI score indicating clinical depression.

For the patient only sample, two statistically significant relationships were found. A moderately strong negative relationship was found between the quality of life score and the depression score and a weak negative relationship was found between the marital satisfaction scores on the KMS and the DAS.
Chapter 5

DISCUSSION

Introduction

The primary purpose of this study was to explore the impact of migraine headaches on the male partner of the female patient. Specifically, the impact on quality of life, level of depression and marital satisfaction of the partner as reported by the partner, was targeted for this study. In this chapter, findings from the posed study questions are discussed relevant to current research and within the conceptual framework of family systems theory. Implications of the findings for practice, study limitations and suggestions for further research are also presented.

Impact of Migraine on Quality of Life

Using a family systems framework, the subsystem of husband and wife (or heterosexual cohabitating partners) is examined within the context of a chronic illness, specifically migraine headache. The presence of migraine headache in a family member, in this case the female partner, directly affects the male partner. In turn, the male partner’s reaction to the migraine has a direct effect on the patient. Each partner’s behavior becomes the other partner’s information or source of feedback. According to the family systems theory, all interactions among family members are reciprocal. Such information or feedback will serve as the basis on which future actions are taken.

In the dyadic subsystem of husband and wife, a balance is needed in which each individual is protected from the other’s demands (buffering), yet allows the two
individuals to remain close (bondedness). This balance is particularly challenging in couples where one partner is experiencing chronic migraine. Such experiences affect the function of the subsystem and impact the ability of the subsystem to meet its mutually agreed upon goals. A couple’s ability to cope with migraine will be influenced by the couple’s access to resources as well as their ability to be flexible regarding expectations. Assisting couples to access such resources and aiding in their skill development (i.e. communication skill building, healthy negotiating skills, increasing empathic behaviors, etc.) are all within the realm of most health care professionals, mental health counselors and human service providers.

The unpredictability of migraine frequency and severity requires a high level of flexibility in the subsystem to cope effectively. Migraine couples may find their subsystem boundaries difficult to maintain. Couples may be challenged in their efforts to maintain their boundaries between family members, employers, parenting roles, social networks, and leisure pursuits, among others. Rules of transformation may need to be renegotiated in order to maintain a healthy subsystem.

Instability and conflict are two of the reported struggles commonly found in the migraine couple subsystem. Consensus, cohesion, affection and sexual relationships are also shown to be impacted for this subsystem. The manner in which the subsystem functions has a direct impact on patient treatment outcomes, as well as the depression status and level of relationship satisfaction experienced by each member. Couple dysfunction can lead to increased pain levels and depression in patients and has been shown to negatively impact both the physical and mental health of the partner. Health care professionals and human service professionals can positively impact both the
physical and mental health of their patients/clients by addressing the subsystem, not just the individual patient, in their treatment and service planning. Specific recommendations for such practice are further discussed in the later implications for practice section.

Impact on Partner

Research suggests that patients with pain and their partners present greater psychological, marital and sexual difficulties compared to pain-free couples (Waxman, Tripp & Flamenbaum, 2008). Lipton et al. (2003) conducted a telephone survey of migraine patients and partners and reported that migraines impacted the division of household work, the ability to attend social and leisure functions and the likelihood of partner arguments, all potential factors influencing quality of life.

In this study, using the Migraine Specific Quality of Life instrument, partner impact was measured in the domains of role function restriction, role function prevention and emotional function. The mean score for the role function restriction subdomain was 29.5. The possible raw score range for this subdomain was 7 to 42. The limitations to leisure pursuits, ability to engage in daily activities and get work done were modest. For role function prevention, the mean score was 18.1, with a possible raw score range of 4 to 24. Reports of cancelled work, needing help with routine tasks and inability to attend social functions were relatively limited for the partners in the study. In the subdomain of emotional function, partner mean score was 8.6 with a range of possible scores from 3 to 18. Partners reported moderate levels of feeling frustrated, burdened or afraid of letting others down due to their partner’s migraines. Consistent with current literature linked to the impact of chronic illness on partners, the MSQ scores demonstrate that the partners
did acknowledge a direct impact of the patient’s migraine in various domains of their life, however, the impact was not deemed to be severe, as evidenced by the self-reported scores.

**Impact on Patient**

This study found strong positive relationships between the patient’s age and both the role function prevention score and the quality of life total score. The older the patient, the less impacted they were in the domain of role function prevention. In addition, with age comes an improved quality of life (related specifically to migraine impact). While correlational analysis cannot establish a cause and effect relationship, this researcher suggests that older patients may have learned to successfully accommodate their migraine symptoms and/or perhaps renegotiated their roles. Similarly, a moderately strong relationship was found between number of years with migraine and quality of life total score. Again, this may suggest a level of successful adaptation or accommodation. According to Diamond (2007), perimenopause is linked to worsening migraine attacks. Thus, while a women ages, she can expect her migraines to become more impactful. This lends support to the belief that the positive relationships found in this study may indeed result from patient adaptation or accommodation.

**Impact of Migraine on Depression Level**

**Impact on Partner**

Schwartz et al. (1991) studied marital couples within which one partner experienced chronic illness. Twenty-eight percent of the well spouses in their sample reported experiencing a significantly depressed mood. Bigatti & Cronan (2002) examined
the psychological well-being of spouses of women with fibromyalgia syndrome. Husbands reported more loneliness, greater subjective stress, lower activity levels, and more fatigue than husbands in the comparison group. The migraine partners in this study completed the Beck Depression Inventory to assess their level of depression. None of the partners scored at a level indicating severe clinical depression. Raw scores for partners ranged from 0 – 23, with a mean of 8.6. A minimum score of 31 was needed to reach the level of severe clinical depression. Perhaps the self-reported minimal impact of migraine on partner quality of life helps one to understand the lack of self-reported depression among the partners in the study. Research findings by Roy (2006) suggested a high prevalence of depression in partners of chronic pain patients. This study suggests that for partners of migraine patients, such a connection may not always occur.

Significant negative relationships between partner BDI scores and quality of life subdomain and total scores were identified in the study. Partners who reported high scores in the MSQ subdomains of role function prevention and emotional function and the MSQ Total Score all had very low BDI scores. Again, low depression scores would be expected among partners reporting little to no impact of partner migraine on their quality of life.

Impact on Patient

Migraine can inflict a significant burden on the psychological wellbeing of women by interfering with their ability to spend time with family/friends, disrupting recreational activities, and restricting activities of daily living (Stronks, Tulen & Pepplinkhuizen, 1999). Rist (2012) reported that women who have migraines are more
likely to develop depression than women who have never had migraines. Buse, Manack, Serrano, Turkel & Lipton (2010) studied the comorbidity profiles of migraine patients and found that increased headache frequency (such as chronic migraine) is associated with higher rates of depression. Similarly, Ashina, Serrano, Liptom, Maizels, Manack, Turkel, Reed, & Buse (2012) found that depression is often associated with worsening of the disease such as the progression from episodic migraine to chronic migraine. Bruti, Magnotti & Iannetti (2012) reported findings suggesting that in some cases, migraine and depression may be bidirectional co-morbidities. Both migraine and depression are thought to be related to a dysfunction in the regulation of serotonin. However, in clinical practice the improvement of migraine disability and depressive symptoms by using SSRI’s (selective serotonin reuptake inhibitors) are often not correlated (Bruti et al., 2012). Environmental risk factors may someday provide a better explanation of the link between these two diseases.

When reviewing the results of the BDI – II for the sixty-five individual patients, 38 scored a 17 point or higher total score, with 17 being the threshold for borderline clinical depression. Fifteen of the 38 patients had self-reported scores indicating severe or extreme clinical depression. However, only six of the patients reported having depression when asked in the background information form to identify any health problems they currently have in addition to migraine. Neither the patients themselves, nor their health care providers, seem to be making the connection between migraine and the associated increased risk of depression. This finding will be discussed further in the implications/recommendations section of this chapter. Two strong negative relationships were found between the patient’s BDI Total Scores and (1) the patient’s MSQ EF
subdomain score and (2) the MSQ Total Score. Since the EF score is a subdomain of the MSQ Total Score, the correlation is basically intuitive as is the relationship between a rise in the depression score as the emotional function score drops. This suggests that patients who frequently feel frustrated and fed up have more symptoms of depression.

Impact of Migraine on Marital Satisfaction

Impact on Partner

Flor, Turk, & Scholz (1987) studied the impact of chronic pain on spouses and focused specifically on marital and emotional consequences. Study results indicated that marital discord increases for the spouses of chronic pain patients after the onset of the pain condition and has been reported to be higher in spouses compared with the person afflicted with chronic pain. Spouses of persons with chronic pain reported decreases in marital communication, commitment and sexual frequency. Feinauer & Steele (1992) published a study that contradicted such findings, reporting that marital satisfaction is comparable in couples with and without chronic pain.

In this study, partners completed two marital satisfaction measures, the KMS and the DAS. For both measures, the higher the total score, the higher the level of marital satisfaction. For the KMS, partners had a mean score of 15.9 (range possible was 3 – 21). KMS scores indicate that the majority of partners reported that they were in fact fairly satisfied with their mate and their relationship overall. The DAS mean score for partners was 90.25 (range possible was 0-151). While this was below the norm score of 114 for married couples in the general population, it exceeded the norm score of 70 for now divorced couples in the general population.
Several statistically significant correlations were found related to marital satisfaction. Of particular interest, was the contradiction in the relationship between the partner total scores for the KMS and DAS. A moderately strong negative relationship was found between the two total scores. According to the analysis results, the higher the score on the KMS, the lower the score was on the DAS and vice versa. Both measures are purported to be valid, reliable, frequently used measures of general marital satisfaction.

The DAS asks respondents about specific behaviors occurring in their relationship. The KMS asks respondents about perceptions, namely their subjective assessment of satisfaction level regarding their partner/relationship. The raw data demonstrate that one could report, for example, a lack of affection, minimal kissing and minimal shared interests on the DAS resulting in a low score, yet still report a rating of very satisfied for the KMS questions regarding level of satisfaction with spouse and/or relationship. Participants in the study did, in fact, often report a low frequency of specific positive couple behaviors, but still often rated themselves as feeling very satisfied with their partners. Here we see that the perception of the spouse may be driving their reported level of marital satisfaction, rather than frequency of certain specific caring behaviors.

In an effort to further understand the moderately strong negative relationship between the two measures of marital satisfaction, an additional analysis was conducted. Results of the KMS individual item and DAS Total Score correlation analysis for this sample actually contradicted the findings published by Schumm (1986) citing the concurrent validity of the two measures. If the two measures shared concurrent validity, one would expect to find the correlations to be strong and positive. In fact, the
relationships between items in the two measures often were found to be non-significant, or significantly negative.

One possible interpretation of the negative relationship between the male partner Total Score on the DAS and the female patient scores on the KMS items is that the men are making a significant amount of adjustments in their relationship to accommodate their spouse’s migraines, which may be burdensome to them but pleasing to their spouse. If that were to be the case, this adjustment is not reflecting in the partner MSQ impact subdomain scores, nor is it affecting the partner’s depression status.

Impact on Patient

Patient self-reported scores on the DAS and KMS measures were strikingly similar to the self-reported scores by the partners. Patients in this study also rated their level of marital satisfaction as fairly high. Of interest in this subset of data was the fact that the patients actually projected their partners’ level of marital satisfaction to be slightly lower than the partners actually reported. Some of the patients in the study seemed to make the assumption that their migraines had a significant, negative, effect on their partners, whereas the self-reported partner scores in this study suggest that the impact is not significant, that the partners do not perceive the impact to be substantial or they do not want to report it is so as to not increase the patient’s distress.

Revisiting the conflicting results of the KMS and DAS, the patient DAS Total Score and the KMS patient score for question one revealed a strong, statistically significant, negative correlation. The patient’s answer to KMS question one, how satisfied are you with your marriage/relationship, may be interpreted as being related to
the patient’s level of resentment. Perhaps the more the female engages in the caring behaviors listed in the DAS, the more she may resent her relationship. She may perceive the key behaviors as a burden that must be met rather than an act of love. Perhaps she does not feel her efforts toward such behaviors are being reciprocated or rewarded. She may feel that engaging in such caring behaviors, in addition to coping with chronic migraine, is asking too much, yet she continues to do so to meet the expectations of her partner and other family members. Alternatively, the patient may be self-imposing such expectations to meet her own definition of what it means to be a good wife or partner, whether her partner shares that same definition or not.

Summary

Several statistically significant relationships were found between the variables of interest. The unique contribution that this study offers is the ability to report the impact of migraine on the partner of the female patient, as reported by the partner himself. Partners completed measures related to quality of life, level of depression and marital satisfaction. Partners reported that patient migraine did in fact have a measurable impact on their own quality of life. However, analysis of partner scores revealed that the reported level of depression was not significantly influenced by patient migraine. Moreover, the assessment of partner marital satisfaction based on scores from two different measures yielded conflicting results. Overall, partners did not report that patient migraine had a significantly negative impact on their quality of life.
Implications for Practice

Healthcare Professionals

Given the strong relationship between having migraine and experiencing depression, health care professionals who treat migraine patients should be screening for depression at initial intake, upon patient reported increase in migraine intensity, and upon entering perimenopause. Professionals shouldn’t wait for the patient to self-report signs and symptoms of depression, as they may be unaware of such, as suggested in this study. Comorbidities such as depression can complicate treatment strategies. Concurrent disease management of both conditions may be key to successful patient outcomes.

Development of treatment plans that involve the spouse/partner can improve patient outcomes and reduce or minimize the impact of the disease on family relationships. A couples relationship status/level of functioning should be a consideration in treatment planning. Family/couple counseling may be a critical component in the treatment plan. Healthy coping skills may be taught by a counselor. Cognitive behavioral therapy for both patient and partner can enhance communication, improve empathy, enhance insight, outline appropriate support techniques and model healthy responses to pain. Cano et al. (2000) reported that cognitive behavioral pain management groups for patients and their spouses significantly improved indices of marital satisfaction, coping with pain, and psychological distress in both patients and spouses. Cano et al. (2000) further proposed that involving chronic pain patient’s spouses in research can allow researchers to examine how maladaptive negative marital communications affect both patients and partners. Results may lead to more effective marital therapy which may
lower pain levels in the patient, lessen depressive symptoms for both patient/partner and reduce marital discord for couples.

Dindo et al. (2012) piloted a behavioral treatment program for patients with comorbid depression and migraine. The one-day program focused on acceptance and commitment training as well as migraine education. Patient participants exhibited significantly greater improvements in depressive symptoms, functioning and migraine related disability than did the control group. The program’s efficacy may be enhanced by including the spouse/partner in the training. Similar programs for patients with osteoarthritis have also showed improved functional status, marital satisfaction and couple well-being (Cremeans-Smith, Stephens, Franks, Martire, Druley, & Wojno, 2003). Migraine patients and their partners can benefit from similar program initiatives.

**Patient Educators**

Human services professionals, health educators, social service case managers and other allied health professionals can play a critical role in the well-being of migraine patients and their families. Educators can empower patients by raising their awareness about the potential impact of their migraine experience on their spouse/family. Patients need to learn how to check in with their partners regarding their perception about the migraine experience and its impact on the family/relationship. Patients may be overestimating the burden their migraine imposes on their spouse, and carrying unnecessary guilt. Couples can benefit from learning the importance of healthy, open, frequent communication, reflective listening skills and the use of “I” messages.
Patients and partners need to gain an awareness of the signs and symptoms of depression. A partner might be the one most likely to recognize depression in the patient. Patients need to be aware of high risk periods in which onset of depression is likely, such as approaching perimenopause, or when episodic migraines transform to chronic migraines. Knowledge of resources to manage depression should be shared as well.

Patient educators/advocates can support migraine families by providing resource lists that are specific to their geographic location, or can be found on-line. Referrals to counseling resources, patient/partner support groups, health care professionals knowledgeable about migraine, coping skills workshops, patient advocacy groups, national migraine patient-driven organizations, etc. can help families identify social support sources and tools for successfully managing migraine impact on the family.

Limitations of Study

These study results can only be generalized to a very limited degree to any other population. They are primarily reflective of this sample population only. The non-random, convenience sample participants were mostly recruited from online communities such as Facebook pages related to migraine or migraine-related websites. Participants were required to have access to a computer with internet access. This sample had fairly high education levels that may differ from a more general migraine population, and perhaps also had more access to resources in general. Partners who participated probably did so at the request of their patient mate, since partners were not targeted specifically for recruitment. The responses might have been different if partners were recruited
independently. One might question how responses would vary if the men who said no to their patient mate’s request to participate were somehow engaged in the study.

This exploratory study used a correlational research design. Due to the simplicity of the statistical procedure, no attempt was made to suggest a cause and effect relationship between any study variables. A larger sample would have allowed the researcher to employ more sophisticated statistical analyses such as regression which may have led to a more in-depth explanation of the relationship between the variables themselves as well as related background factors.

The study exhibited conflicting results upon comparison of marital satisfaction total scores. If only one of the marital satisfaction measures were used, the interpretation of this variable would vary greatly. The researcher believes that more thought should have been given to what specific construct or facet of marital satisfaction should have been measured, and which tool would have most effectively measured that variable.

Potential HIPPA privacy violations and lack of partnerships with health care professionals in the field limited access to a larger, more diverse patient recruitment pool. Lack of financial resources, a limited timeframe in which to conduct the study and minimal access to statistical expertise also influenced the study design, scope and ability to generalize findings across other populations.

**Implications for Future Research**

Replication of the study is recommended. Building upon what was learned by this smaller exploratory study, a larger, more diverse sample size may yield more informative results. A larger sample would also allow a more sophisticated statistical analysis of the
data. For example, a multiple regression model would allow greater explanation of how study variables interact with each other as well as with other significant background or demographic factors. A review of the various marital satisfaction scales available may lead to the identification of a more focused tool that would be more effective in measuring specific relational aspects affected by chronic illness.

This study sample reported having few co-morbidities. However, it may be beneficial to explore in an in-depth manner how comorbidities such as depression or other frequently reported illnesses impact treatment planning for migraine patients. Comprehensive planning of care and treatment strategies that are inclusive of partners may prove to be more effective and beneficial to the patient and the family as a whole. Moreover, further exploration of the perceived impact versus the measureable/observable impact of migraine for both patient and the spouse will lend itself to more efficacious strategies and interventions targeted at improved coping behaviors as well as relationship satisfaction. Such knowledge would allow counselors to be more effective when implementing treatment modalities such as cognitive behavior therapy and coping skill development for couples.

Further exploration of the migraine patient accommodation/adaptation strategies that are developed over time is needed. If such strategies can be identified, they may be shared with or taught to others at earlier stages of the disease process, resulting in improved quality of life.

Focus groups and or private interviews with partners of migraine patients may yield additional themes for further exploratory research. Systems theory and similar
chronic pain research results predict that there will be a measurable impact on partners of migraine patients, and that this impact will be profound. One wonders why partners in this study sample aren’t acknowledging or identifying a greater impact of patient migraine on their own lives? Do they separate the impact or compartmentalize it so as to not perceive it or not to let it bother them? Do they have their own pattern of accommodation/adaptation that could be identified and shared with other partners of chronically ill patients? Why are they not experiencing/reporting feelings of depression when research on other chronic illness patient spouses are demonstrating such an impact? Such questions may call for a different research approach. Perhaps qualitative methodologies such as case studies or phenomenological approaches may yield more effective answers to these questions.
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Appendix A: Recruitment targets.

Online targets:

- ACHE: American Council for Headache Education
- AHS: American Headache Society
- American Migraine Foundation
- Craig’s List - Volunteers
- Drugs.com Migraine Support Group
- Facebook Migraine Related Pages:
  - American Headache and Migraine Foundation
  - Chronic Migraine Awareness
  - Headache and Migraine News
  - Hemiplegic Migraine Foundation
  - MAGNUM
  - Migraine Action
  - Migraine Action Coalition
  - Migraine Awareness
  - Migraine Headache and Disorder Awareness
  - Migraine Misfits
  - Migraine Monologues
  - Migraine Relief
  - Migraine Talk
  - Migrainuers – we count
  - The Daily Headache
- The Migraine Chick
- The Migraine Revolution
- The Migraine Trust

- Headache Australia
- Health Central/My Migraine Connection
- I Hate Headaches
- Inspire
- Lifescript
- MD Junction Migraine Support
- Migraine Free Cooking
- Migraine Ireland
- Migraine Sufferers Support Group
- Migraine Talk
- Migraine.com
- National Headache Foundation
- Putting Our Heads Together
- Ronda's Migraine Page
- Western New York Support Group
- World Headache Alliance

Non-internet Related Targets:

Sixty-seven Albuquerque Neurologists

Three Albuquerque Snap Fitness health clubs

Chicago Reader Newspaper and online classified paid advertisement
Appendix B: Recruitment Material Samples

(Research Group letterhead or Department/School)

Date

Dear ___:

This letter is a request for [name of organization]'s assistance with a project I am conducting as part of my Doctoral degree in the Department of Individual, Family, and Community Education (IFCE), Family Studies Program at the University of New Mexico under the supervision of Dr. Virginia Shipman. The title of my research project is “Migraine headache: A family affair”. I would like to provide you with more information about this project that explores the impact of migraine headaches on the loved ones of patients.

The purpose of this study is to explore the impact of migraine headache on the quality of life of the female with migraine and her male spouse or cohabitating partner. Knowledge and information generated from this study may help other health care professionals, researchers, and families dealing with this chronic illness.

It is my hope to connect with couples who are engaged in the programs or activities of the [name of organization] to invite them to participate in this research project. I believe that the participants and families of your organization have unique understandings and experiences with chronic migraine. During the course of this study, I will be collecting data from couples through on-line surveys.

To respect the privacy and rights of the [name of organization] and its participants/members, I will not be contacting the families directly. Rather, I would like to ask for your support by announcing to your members/audience the opportunity to participate in this study. If a couple is interested in participating they should be invited to contact me directly at bacher@unm.edu to learn more about participation in this study and how to access the on-line survey.

Participation is completely voluntary. Each partner will make their own independent decision as to whether or not they would like to be involved. All participants will be informed and reminded of their rights to participate or withdraw before any interview, or at any time in the study. Participants will receive detailed information about this study and be provided with informed consent forms.

To support the findings of this study, responses will be used labelled with numeric identifiers to protect the identity of the participants. Participants will not be identifiable, and only described as patient or spouse/partner.
All electronic data will be stored for a short time after completion of the study on a CD with no personal identifiers. Finally, only I and my advisor, Dr. Shipman, have access to these materials. This study has been reviewed and received ethics clearance through the UNM Internal Review Board.

If you have any questions regarding this study or would like additional information to assist you in reaching a decision about participation, please feel free to contact me at bacher@unm.edu or my advisor, Dr. Virginia Shipman, Professor, at vshipman@unm.edu

Thank you in advance for your assistance with this project.

Yours sincerely,

Karen Bacher

Doctoral Student, Family Studies

University of New Mexico
Hello,

My name is **Karen Bacher** and I am a PhD student (and chronic migraine patient of more than 25 years) working under the supervision of Dr. Virginia Shipman, Professor, from the Family Studies Program in the College of Education, Department of Individual, Family and Community Education (IFCE), at University of New Mexico. We are conducting a study entitled “Migraine headache: A family affair,” and are currently seeking volunteers to participate in this study. The study seeks to explore the impact of migraine headaches on patients with migraine and their spouses/partners. We are seeking married or cohabitating heterosexual couples in which the female experiences chronic migraine and the male is migraine free. Participation in this study involves completing an on-line survey. Both patient and partner complete their own version of the on-line survey at their own individual convenience. This study has been reviewed and received ethics clearance from the UNM Internal Review Board. Interested couples can contact me at [bacher@unm.edu](mailto:bacher@unm.edu) for eligibility criteria, study details and the link to the on-line survey.
Hello,

My name is Karen Bacher and I am a PhD student working under the supervision of Dr. Virginia Shipman, Professor, from the Family Studies Program in the College of Education, Department of Individual, Family and Community Education (IFCE), at the University of New Mexico. The reason that I am contacting you is that we are conducting a study entitled “Migraine headache: A family affair,” and are currently seeking volunteers to participant in this study. The study seeks to explore the impact of migraine headaches on quality of life of both patients and their spouses/partners. We are seeking married or cohabitating heterosexual couples in which the female experiences chronic migraine and the male is migraine free.

Participation in this study involves completing an on-line survey. Both patient and partner complete their own version of the on-line survey at their own individual convenience. Participation in this study would take approximately 45 minutes per person. The study has been reviewed and received ethics clearance through the UNM Internal Review Board.

As a migraine support group leader and/or patient advocate, I hope that you will share this invitation for participation with your members/patients. Couples interested in participating may contact me at bacher@unm.edu. I will then reply with a more detailed description of the study, full eligibility criteria, benefits of participation and the link to which participants can access the survey on-line. Thank you so much for your consideration and support.

Sincerely,

Karen Bacher
Appendix C: Background Information Form/Instrument Flow of On-line Survey

1. Please check the description that applies to you:
   ___ I am a female who has been diagnosed with migraine headaches and am currently in a relationship with (for at least one year or more) and living with a male spouse or partner who does not have migraine headaches.
   ___ I am a male who does not experience migraine headaches but am currently in a relationship with (for at least one year or more) and living with a female spouse or partner who has been diagnosed with migraine headaches.
   ___ Neither statement applies to me.

_______________________________________________________________________
If neither: go to thank you screen without drawing information
If female or male go to second level of eligibility screens

Female version

1. Are you between 21 and 55 years of age? (branch)
2. Have you been married to and living with or unmarried but cohabitating (living) with your spouse/partner for at least one year? (branch)
   3. Have you experienced migraine headaches for longer than the past 6 months? (branch)

If yes to all, go to International Headache Society Criteria check. If no to any, go to thank you screen.
If pass IHS checklist, then to informed consent screen
From consent go to female background screen

Male version

1. Have you been married to and living with or unmarried and cohabitating (living) with your spouse/partner for at least one year? YES NO (branch)
   2. Are you between the ages of 21 and 55? YES NO (branch)

If yes to both, go to informed consent. If no to either, go to thank you screen.
Female background information form content

1. Create your unique, confidential identifier here by entering your initials, your partner’s initials and the last 3 digits of your zip code. See example below:

   Sally Jones and Tim Jones reside in zip code 87121, so your code would be: SJTJ121

2. What is your current age?
3. What is your current employment status?
   Full time employee (30 or more hours per week)
   Part time employee (Less than 30 hours per week)
   Type of job you hold: occupation choices listed
   Not employed

4. What is your level of education:
   __ 10th – 12th grade
   __ Received high school diploma/GED
   __ Some college coursework
   __ Two years of college (Associates degree or vocational training)
   __ College graduate (Bachelor’s degree)
   __ Some graduate level coursework
   __ Master’s degree
   __ Doctoral or professional degree

5. Please list the age, sex and your relationship to anyone living in your household other than your partner. Offer option of no one.

6. Has a physician/health care professional diagnosed you with migraine? YES NO

7. Before being diagnosed with migraine, did you have close contact with someone else (such as a friend or family member) who experienced migraines? YES NO
8. In the past 12 months, how often did you visit a health care professional for care of your migraine?
   - 1-3 times
   - 4 – 6 times
   - 7 or more times

9. In what year did you first experience migraine? Enter year
10. In what year did your relationship with your spouse/partner begin? Enter year

11. Do you have any chronic illnesses other than migraine? YES NO if yes, please list any other chronic illness(es) you have:

12. To what extent do you think your spouse/partner’s quality of life is impacted by your migraines?
   
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<td>No</td>
<td>minimal</td>
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13. How frequently do you have contact with a face to face or on-line migraine support group?
   
   _ No contact
   _ I have contact with a support group about 2 – 3 times per year
   _ I have contact with a support group about once per month or less
   _ I have contact with a support group more than once per month
   _ I have contact with a support group almost weekly or more

KMS instrument (Likert Scale 1 – 7)
How satisfied are you with your relationship/marriage?
How satisfied are you with your partner/husband as a partner/spouse?
How satisfied are you with your relationship with your partner/husband?

Next to MSQ patient questionnaire
Next: to BDI/Hope Helpline screen
Next to DAS
Next to PROJECTION OF PARTNER KMS ANSWERS
Next to: thank you screen with info to enter drawing

END for Female.
Male background information form content

1. Unique id enter here: initials and zip
2. Do you have a chronic illness or chronic pain condition? YES/NO
   If yes, what illness or condition(s) do you have?

3. What is your current age?
4. What is your current employment status?
   Full time employee (30 or more hours per week)
   Part time employee (Less than 30 hours per week)
   Type of job you hold: choices listed
   Not employed

5. What is your level of education?
   __ 10th – 12th grade
   __ Received high school diploma/GED
   __ Some college coursework
   __ Two years of college (Associates degree or vocational training)
   __ College graduate (Bachelor’s degree)
   __ Some graduate level coursework
   __ Master’s degree
   __ Doctoral or professional degree

6. Before meeting your current wife/partner, did you have close contact with someone else (such as a friend or family member) who experienced migraines? YES NO

7. How frequently do you have contact with a face to face or on-line migraine support group?
   __ No contact
   __ I have contact with a support group about 2 – 3 times per year
   __ I have contact with a support group about once per month or less
   __ I have contact with a support group more than once per month
   __ I have contact with a support group almost weekly or more
8. In what year did you begin your relationship with your partner? Enter year

9. To what extent do you think your wife/partner’s quality of life is negatively impacted by her migraines?

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<td></td>
<td>No</td>
<td>minimal</td>
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Impact impact impacted impacted impacted

**START KMS HERE** (Likert Scale 1 – 7)

11. How satisfied are you with your relationship/marriage?
12. How satisfied are you with your partner/husband as a partner/spouse?
13. How satisfied are you with your relationship with your partner/husband?

NEXT: GO TO MSQ PARTNER VERSION
Next to BDI/Hope Hotline Screen
Next to DAS
Next to projection of KMS questions by partners:
How satisfied do you think your partner is with your relationship/marriage?
How satisfied do you think your partner is with you as a partner?
How satisfied do you think your partner is with her relationship with you as his partner?

Next to thank you screen with drawing information. END for male.
Appendix D: MSQ Instrument Permission Letter

Permission to Utilize the Migraine-Specific Quality of Life Questionnaire (MSQv2.1)

Thank you for requesting permission to utilize the GlaxoSmithKline instrument entitled the Migraine-Specific Quality of Life Questionnaire-v2.1 (the "Instrument") in connection with a pilot study and final project as part of a dissertation. The purpose of this causal-comparative study is to identify the perceived impact of migraine on the quality of life for both the patient and their partner.

The study pilot and final project will run from August of 2011 through December of 2012. I understand that the studies will be conducted in the following country: United States. You would like to obtain permission to use the English version of the Instrument.

We are pleased to grant you permission to reproduce and distribute electronic copies of the Instrument in connection with the aforementioned clinical research activities conducted by Karen Bacher, subject to the following conditions: (1) you may not modify the Instrument or combine it with other instruments without the prior written approval of GlaxoSmithKline, (2) you must include the copyright information appearing on the bottom of each page of the Instrument on all copies of the Instrument, (3) you must utilize the Instrument in its entirety, (4) the use of the Instrument shall be limited to the specified studies only, the use of the Instrument in other studies would require a separate permission agreement, (5) upon request for the purpose of conducting psychometric analysis, you agree to promptly furnish GlaxoSmithKline with Instrument data, and (6) you agree to utilize only the most current version of the Instrument, as supplied to you by GlaxoSmithKline. Please note that you will need to seek separate permission to reproduce the Instrument in any other media, including electronic media.

Karen Bacher does request permission to post the questionnaire on Survey Monkey so that submissions may be submitted electronically. In addition, Karen Bacher requests permission to also post a spousal version of the instrument which will ask the spouse the same questions simply substituting “your partner’s migraines” instead of “my migraines.”

There is no charge for the foregoing permission. This permission is granted solely for the specified clinical study, and GlaxoSmithKline prohibits the reproduction or use of this Instrument for any other purpose without our prior written consent. We reserve the right to revoke our permission at any time;
however, such revocation will not affect any use by Karen Bacher of the Instrument in accordance with the permission granted herein prior to such revocation.

Please note that we are not able to make, and hereby disclaim, any representation or warranties about this Instrument, including any warranties as to additional permissions that may be required for its use. Our permission above is given on an “as is” basis.

We are pleased to be of assistance in this matter. Please contact me if you have any questions. Please confirm our understanding by having an authorized representative sign and return a copy of this letter agreement to me. Once we receive your signed confirmation, you may proceed with your proposed use of the Instrument.

Sincerely,

GLAXOSMITHKLINE, PLC

By: __________________________
M. Chris Runken, Pharm.D
USP Health Outcomes Manager
Appendix E: **MIGRAINE SPECIFIC QUALITY OF LIFE QUESTIONNAIRE**

**(VERSION 2.1)**

**PATIENT INSTRUCTIONS:**

Please fill out this questionnaire. It will help us understand the effects of migraine headache on your daily activities.

The questionnaire has been designed so that it can be completed quickly and easily. Please check only one answer for each question. You should answer every question.

Thank you for your time.
While answering the following questions, please think about all migraine attacks you may have had in the past 4 weeks.

1. In the past 4 weeks, how often have migraines interfered with how well you dealt with family, friends and others who are close to you? (Select only one response.)
   1. None of the time
   2. A little bit of the time
   3. Some of the time
   4. A good bit of the time
   5. Most of the time
   6. All of the time

2. In the past 4 weeks, how often have migraines interfered with your leisure time activities, such as reading or exercising? (Select only one response.)
   1. None of the time
   2. A little bit of the time
   3. Some of the time
   4. A good bit of the time
   5. Most of the time
   6. All of the time

3. In the past 4 weeks, how often have you had difficulty in performing work or daily activities because of migraine symptoms? (Select only one response.)
   1. None of the time
   2. A little bit of the time
   3. Some of the time
   4. A good bit of the time
   5. Most of the time
   6. All of the time
4. In the past 4 weeks, how often did migraines keep you from getting as much done at work or at home? (Select only one response.)

1. None of the time
2. A little bit of the time
3. Some of the time
4. A good bit of the time
5. Most of the time
6. All of the time

5. In the past 4 weeks, how often did migraines limit your ability to concentrate on work or daily activities? (Select only one response.)

1. None of the time
2. A little bit of the time
3. Some of the time
4. A good bit of the time
5. Most of the time
6. All of the time

6. In the past 4 weeks, how often have migraines left you too tired to do work or daily activities? (Select only one response.)

1. None of the time
2. A little bit of the time
3. Some of the time
4. A good bit of the time
5. Most of the time
6. All of the time
7. In the past 4 weeks, how often have migraines limited the number of days you have felt energetic? (Select only one response.)

1. None of the time
2. A little bit of the time
3. Some of the time
4. A good bit of the time
5. Most of the time
6. All of the time

8. In the past 4 weeks, how often have you had to cancel work or daily activities because you had a migraine? (Select only one response.)

1. None of the time
2. A little bit of the time
3. Some of the time
4. A good bit of the time
5. Most of the time
6. All of the time

9. In the past 4 weeks, how often did you need help in handling routine tasks such as every day household chores, doing necessary business, shopping, or caring for others, when you had a migraine? (Select only one response.)

1. None of the time
2. A little bit of the time
3. Some of the time
4. A good bit of the time
5. Most of the time
6. All of the time
10. In the past 4 weeks, how often did you have to stop work or daily activities to deal with migraine symptoms? (Select only one response.)

1. None of the time
2. A little bit of the time
3. Some of the time
4. A good bit of the time
5. Most of the time
6. All of the time

11. In the past 4 weeks, how often were you not able to go to social activities such as parties, dinner with friends, because you had a migraine? (Select only one response.)

1. None of the time
2. A little bit of the time
3. Some of the time
4. A good bit of the time
5. Most of the time
6. All of the time

12. In the past 4 weeks, how often have you felt fed up or frustrated because of your migraines? (Select only one response.)

1. None of the time
2. A little bit of the time
3. Some of the time
4. A good bit of the time
5. Most of the time
6. All of the time
13. In the past 4 weeks, how often have you felt like you were a burden on others because of your migraines? (Select only one response.)

1  None of the time
2  A little bit of the time
3  Some of the time
4  A good bit of the time
5  Most of the time
6  All of the time

14. In the past 4 weeks, how often have you been afraid of letting others down because of your migraines? (Select only one response.)

1  None of the time
2  A little bit of the time
3  Some of the time
4  A good bit of the time
5  Most of the time
6  All of the time
Appendix F: Beck’s Depression Inventory II

This depression inventory can be self-scored. The scoring scale is at the end of the questionnaire.

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

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

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

4.
0 I get as much satisfaction out of things as I used to.
1 I don't enjoy things the way I used to.
2 I don't get real satisfaction out of anything anymore.
3 I am dissatisfied or bored with everything.
5.
0 I don't feel particularly guilty
1 I feel guilty a good part of the time.
2 I feel quite guilty most of the time.
3 I feel guilty all of the time.

6.
0 I don't feel I am being punished.
1 I feel I may be punished.
2 I expect to be punished.
3 I feel I am being punished.

7.
0 I don't feel disappointed in myself.
1 I am disappointed in myself.
2 I am disgusted with myself.
3 I hate myself.

8.
0 I don't feel I am any worse than anybody else.
1 I am critical of myself for my weaknesses or mistakes.
2 I blame myself all the time for my faults.
3 I blame myself for everything bad that happens.

9.
0 I don't have any thoughts of killing myself.
1 I have thoughts of killing myself, but I would not carry them out.
2 I would like to kill myself.

3 I would kill myself if I had the chance.

10.

0 I don't cry any more than usual.

1 I cry more now than I used to.

2 I cry all the time now.

3 I used to be able to cry, but now I can't cry even though I want to. 11.

0 I am no more irritated by things than I ever was.

1 I am slightly more irritated now than usual.

2 I am quite annoyed or irritated a good deal of the time.

3 I feel irritated all the time.

12.

0 I have no lost interest in other people.

1 I am less interested in other people than I used to be.

2 I have lost most of my interest in other people.

3 I have lost all of my interest in other people.

13.

0 I make decisions about as well as I ever could.

1 I put off making decisions more than I used to.

2 I have greater difficulty in making decisions more than I used to.

3 I can't make decisions at all anymore.

14.

0 I don't feel that I look any worse than I used to.
1 I am worried that I am looking old or unattractive.

2 I feel there are permanent changes in my appearance that make me look unattractive

3 I believe that I look ugly.

15.

0 I can work about as well as before.

1 It takes an extra effort to get started at doing something.

2 I have to push myself very hard to do anything.

3 I can't do any work at all.

16.

0 I can sleep as well as usual.

1 I don't sleep as well as I used to.

2 I wake up 1-2 hours earlier than usual and find it hard to get back to sleep.

3 I wake up several hours earlier than I used to and cannot get back to sleep.

17.

0 I don't get more tired than usual.

1 I get tired more easily than I used to.

2 I get tired from doing almost anything.

3 I am too tired to do anything.

18.

0 My appetite is no worse than usual.

1 My appetite is not as good as it used to be.

2 My appetite is much worse now.
3 I have no appetite at all anymore.

19.
0 I haven't lost much weight, if any, lately.

1 I have lost more than five pounds.

2 I have lost more than ten pounds.

3 I have lost more than fifteen pounds.

20.
0 I am no more worried about my health than usual.

1 I am worried about physical problems like aches, pains, upset stomach, or constipation.

2 I am very worried about physical problems and it's hard to think of much else.

3 I am so worried about my physical problems that I cannot think of anything else.

21.
0 I have not noticed any recent change in my interest in sex.

1 I am less interested in sex than I used to be.

2 I have almost no interest in sex.

3 I have lost interest in sex completely

Total Score_________________Levels of Depression
1-10________________________These ups and downs are considered normal
11-16________________________Mild mood disturbance
17-20________________________Borderline clinical depression
21-30________________________Moderate depression
31-40________________________Severe depression
over 40________________________Extreme depression
Appendix G: Kansas Marital Satisfaction Scale Questions

How satisfied are you with your marriage?

<table>
<thead>
<tr>
<th>Extremely Dissatisfied</th>
<th>Very Dissatisfied</th>
<th>Somewhat Dissatisfied</th>
<th>Mixed Satisfied</th>
<th>Somewhat Satisfied</th>
<th>Very Satisfied</th>
</tr>
</thead>
</table>

How satisfied are you with your husband as a spouse?

<table>
<thead>
<tr>
<th>Extremely Dissatisfied</th>
<th>Very Dissatisfied</th>
<th>Somewhat Dissatisfied</th>
<th>Mixed Satisfied</th>
<th>Somewhat Satisfied</th>
<th>Very Satisfied</th>
</tr>
</thead>
</table>

How satisfied are you with your relationship with your husband?

<table>
<thead>
<tr>
<th>Extremely Dissatisfied</th>
<th>Very Dissatisfied</th>
<th>Somewhat Dissatisfied</th>
<th>Mixed Satisfied</th>
<th>Somewhat Satisfied</th>
<th>Very Satisfied</th>
</tr>
</thead>
</table>

The above questions were revised for the survey to read:

How satisfied are you with your relationship/marriage?

How satisfied are you with your partner/husband or wife as a partner/spouse?

How satisfied are you with your relationship with your partner/husband or wife?
Appendix H: Dyadic Adjustment Scale Questions

Most persons have disagreements with their relationships. Please indicate below the appropriate extent of the agreement or disagreement between you and your partner for each item on the following list.

5 = Always agree  
4 = Almost always agree  
3 = Occasionally disagree  
2 = Frequently disagree  
1 = Almost always disagree  
0 = Always disagree

1. Handling family finances  
2. Matters of recreation  
3. Religious matters  
4. Demonstration of affection  
5. Friends  
6. Sex relations  
7. Conventionality (correct or proper behavior)  
8. Philosophy of life  
9. Ways of dealing with in-laws  
10. Aims, goals and things believed important  
11. Amount of time spent together  
12. Making major decisions  
13. Household tasks  
14. Leisure time interests  
15. Career decisions

Please indicate below approximately how often the following items occur between you and your partner.

1 = All the time  
2 = Most of the time  
3 = more often than not  
4 = Occasionally  
5 = Rarely  
6 = Never

16. How often do you discuss or have you considered divorce, separation or terminating the relationship?  
17. How often do you or your mate leave the house after a fight?  
18. In general, how often do you think things between you and your partner are going well?  
19. Do you confide in your mate?  
20. Do you regret that you married? (or lived together)
21. How often do you and your partner quarrel?
22. How often do you and your mate “get on each other’s nerves”?

23. Do you kiss your mate?
- Every day (4)
- Almost every day (3)
- Occasionally (2)
- Rarely (1)
- Never (0)

24. Do you and your mate engage in outside interests together?
- All of them (4)
- Most of them (3)
- Some of them (2)
- Very few of them (1)
- None of them (0)

How often would you say the following events occur between you and your mate?
1 = Never
2 = Less than once a month
3 = Once or twice a month
4 = Once a day
5 = More often

25. Have a stimulating exchange of ideas
26. Laugh together
27. Calmly discuss something
28. Work together on a project

There are some things about which couples sometimes agree and sometimes disagree. Indicate if either item below caused differences of opinions or problems in your relationship in the past few weeks (yes or no).
29. Being too tired for sex
30. Not showing love

31. The numbers on the following line represent different degrees of happiness in your relationship. The middle point, “happy,” represents the degree of happiness of most relationships. Please circle the number that best describes the degree of happiness, all things considered, of your relationship:

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32. Please circle the number of one of the following statements that best describes how you feel about the future of your relationship.

5  I want desperately for my relationship to succeed, and would go to almost any length to see that it does.
4  I want very much for my relationship to succeed, and will do all that I can to see that it does.
3 I want very much for my relationship, and will do my fair share to see that it does.
2 It would be nice if my relationship succeeded, but I can’t do much more than I am doing now to make it succeed.
1 It would be nice if it succeeded, but I refuse to do any more than I am doing now to keep the relationship going.
0 My relationship can never succeed, and there is no more that I can do to keep the relationship going.
Appendix I: Informed Consent/HIPPA Form

The University of New Mexico IRB
Consent to Participate in Research

Migraine headache: A family affair

Purpose and General Information
You are being asked to participate in a research study that is being done by Karen Bacher, a doctoral student at the University of New Mexico under the supervision of Dr. Virginia Shipman, Professor. This research is being done to evaluate the impact of migraine headaches on the quality of life of the female with migraine and their male spouse/partner. You are being asked to participate because you are a female migraine patient currently married or cohabitating with a male, or you are the partner of a migraine patient to whom you are married or cohabitating. Approximately 50 couples will take part in this study.

This form will explain the study to you, including the possible risks as well as the possible benefits of participating. This is so you can make an informed choice about whether or not to participate in this study. Please read this Consent Form carefully. Please feel free to email bacher@unm.edu if you need to ask the investigators to explain any words or information that you do not clearly understand.

What will happen if I participate?
If you agree to be in this study, you will be asked to read and electronically sign this Consent Form. After you sign the Consent Form, the following things will happen: You will be directed to a series of questions that will assess if you meet the study eligibility requirements. If you qualify, you will be directed to an on-line questionnaire containing questions regarding your background (such as age, education level, length of relationship etc.). If you do not meet the eligibility requirements you will be notified and the survey will conclude. For those meeting eligibility requirements, access will be granted to a second series of questions that will ask you about ways that migraine headache has impacted your life. Lastly, a series of questions will ask about your current feelings or emotional state. Participation in this study will take a total of 45-60 minutes.

What are the possible risks or discomforts of being in this study?
Every effort will be made to protect the information you give us. However, there is a small risk of loss of confidentiality that may result in others learning about your migraine experience. There is a possibility that the questions asked may result in you feeling some degree of stress or emotional distress since they will ask you to give some thought to the many ways in which migraines may have impacted various aspects of your everyday life.

The survey will ask for your initials, initials of your partner/spouse, and the last 3 numbers of your zip code. No other identifying information will be requested. Identifying information (your names and email address) will be maintained in locked files, available only to the researcher and her advisor for the duration of the study. Any personal identifying information (your initials and partial zip code) and any record linking that information to study ID numbers will be destroyed when the study is completed. Information resulting from this study will be used for research purposes and final results
may be published; however, you and your partner will not be identified by initials in any publications.

Information from your participation in this study may be reviewed by federal and state regulatory agencies and by the UNM IRB which provides regulatory and ethical oversight of human research.

**What are the benefits to being in this study?**
There may or may not be direct benefit to you from being in this study. Participants who complete the study measures may choose to enter a drawing for a gift card valued at $100. Your participation may help us find out how migraine impacts the family members (particularly partners or spouses). Such knowledge may help health professionals; patient advocates and counselors better serve migraine patients and their families in minimizing the impact of chronic migraine on everyday living. Participants also have the opportunity to request a copy of the study summary of group results at no charge. To request a copy of the study findings, please notify Karen Bacher at bacher@unm.edu. Study findings are expected to be available in Spring, 2014.

**What other choices do I have if I don’t participate?**
Taking part in this study is voluntary so you can choose not to participate.

**Can I stop being in the study once I begin?**
Yes. You can withdraw from this study at any time with no consequence. The investigators have the right to end your participation in this study if they determine that you no longer qualify to take part, if you do not follow study procedures, or if it is in your best interest or the study’s best interest to stop your participation.

**Authorization for Use and Disclosure of Your Protected Health Information (HIPAA)**
As part of this study, we will be collecting health information about you. This information is “protected” because it is identifiable or “linked” to you.

**Protected Health Information (PHI)**
By signing this Consent Document, you are allowing the investigators to use your protected health information for the purposes of this study. This information may include: the signs and symptoms you experience related to migraine (for the patient only), how your daily living experience may have changed as a result of migraine both patient and partner), your feelings about having migraines or being in a relationship with someone who has migraines, your current feelings or emotional state (both patient and partner).

In addition to researchers and staff at UNM, there is a chance that your health information may be shared (re-disclosed) outside of the research study and no longer be protected by federal privacy laws. Examples of this include disclosures for law enforcement, judicial proceeding, health oversight activities and public health measures.

**Right to Withdraw Your Authorization**
Your authorization for the use and disclosure of your health information for this study shall not expire unless you cancel this authorization. Your health information will be used or disclosed as long as it is needed for this study. However, you may withdraw
your authorization at any time provided you notify the UNM investigators in writing. To do this, please send an email notifying them of your withdrawal to: Karen Bacher at bacher@unm.edu. Please be aware that the research team will not be required to destroy or retrieve any of your health information that has already been used or shared before your withdrawal is received.

**Refusal to Sign**
If you choose not to sign this consent form and authorization for the use and disclosure of your PHI, you will not be allowed to take part in the research study.

**What if I have questions or complaints about this study?**
If you have any questions, concerns or complaints at any time about the research study, Karen Bacher, or her advisor will be glad to answer them. Please contact Karen Bacher at bacher@unm.edu or Professor Virginia Shipman at vshipman@unm.edu. If you would like to speak with someone other than the research team, you may call the UNM IRB office at (505) 272-1129. The IRB is a group of people from UNM and the community who provide independent oversight of safety and ethical issues related to research involving human subjects.

**What are my rights as a research subject?**
If you have questions regarding your rights as a research subject, you may call the IRB at (505) 272-1129 or visit the IRB website at http://hsc.unm.edu/som/research/HRRC.

**Consent and Authorization**
You are making a decision whether to participate in this study. Your checking of a box below indicates that you read the information provided (or the information was read to you). By checking a box regarding the Consent Form, you are not waiving any of your legal rights as a research subject.

Thank you for your interest,
Karen Bacher
Doctoral Student
University of New Mexico

__________________________________________________________

I have had an opportunity to ask questions and all questions have been answered to my satisfaction. By checking the first box below regarding the Consent Form, I agree to participate in this study and give permission for my health information to be used or disclosed as described in this Consent Form.

___ Click here to continue to study questionnaire. By clicking this option you are acknowledging your voluntary participation in the study and agree to all terms included in the consent form.

___ Click here if you do not wish to participate. Thank you for your time!
Appendix J: Matched Couples Complete Correlation Matrix

Items with a * indicate statistical significance at a level of .05.

**MSQ Domain Subscores**

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Male and Female Prediction of Partner KMS Scores and Male and Female Age

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