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Predictors of Change in Health Care Use After Marital and Family Therapy

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PREDICTORS OF CHANGE IN HEALTH CARE USE AFTER MARITAL AND FAMILY THERAPY

by

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As chair of the candidate's graduate committee, I have read the thesis of Scott H. Payne in its final form and have found that (1) its format, citations, and bibliographical style are consistent and acceptable and fulfill university and department style requirements; (2) its illustrative materials including figures, tables, and charts are in place; and (3) the final manuscript is satisfactory to the graduate committee and is ready for submission to the university library.

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ABSTRACT

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The cost of health care continues to increase. Based on the biopsychosocial model of heath care, it has been shown that the treatment of psychological and social problems can have a cost offset effect on the cost of medical care. While this offset effect has been shown in an MFT population, there are no known studies that have looked at predictors of the change in medical use by those that receive marital and family therapy. This study looked at psychological and social measures of individuals who received marital and family therapy. These measures were evaluated based on the change from intake to one year post intake using best subsets multiple regression. The model for males showed variables that could be affected using a cognitive or cognitive-behavioral model of therapy. The model for females showed variables that could be affected using the emotionally focused model of therapy. The implications of this study are that a therapist could be the most effective in conjoint therapy if they apply concepts from both cognitive and emotionally focused therapeutic models.

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Introduction

Americans spend more of each dollar earned on health care than on food or housing, and about 300,000 individuals lose their health insurance coverage for every one-percent inflation-adjusted increase in premiums each year (Millenson, 2002). Levit, Smith, Cowan, Sensenig, and Catlin (2004) reported that health care spending in 2002 averaged $5,440 per person in the United States. Such issues have a significant impact on families and can be a source of stress within relationships (Simon & Gutheil, 2002). One of the main factors driving health care costs up is overuse of services. According to Cummings (1997) 60% – 70% of medical visits are by somaticizers, or individuals who respond to stress, emotional problems or mental illness by expressing their distress in physical symptoms. This was supported by a recent study where Kisely and Simon (2006) found 62% of those in a primary care population had at least one medically explained somatic symptom. Mental health services for these individuals can have a significant impact both on individual health and on the overall cost of providing care. To better understand this impact, researchers have examined the effects of mental health services on general use of medical care. This effect can be determined by comparing the reduction in the cost of medical treatment to the cost of providing mental health services, and has been termed the "offset effect" or "medical offset" (Shemo, 1985-1986).

Gingrich (2003) noted that "studies have shown that your mental outlook on life and your sense of connection with others have dramatic implications for your health" (p. 71). In other words, when an individual has emotional, psychological and/or social problems his or her physical health may be affected, and vise versa. Engel (1977, 1980) termed this the biopsychosocial model of health care. He noted that there is

interdependence between the biological, psychological and social functioning of an individual. Any one aspect of an individual's life can impact the other aspects. In the mental health field, studies have been done to better understand this approach to health as it relates to medical offset. In their meta-analysis of the offset effect for individual psychotherapy, Chiles, Lambert, and Hatch (1999) reported that 90% of the articles reviewed showed a medical offset effect, and the average decrease in medical service utilization across all articles reviewed was 23.6%.

To date, the majority of the research on offset effect has focused on effects of individual therapy (e.g., Groth-Marnat, & Edkins, 1996; Kessler, Steinwachs, & Hankin, 1982), with a few promising studies on the offset effect of marriage and family therapy (MFT) (e.g., Law & Crane, 2000; Law, Crane, & Berge, 2003; O'Farrell et al., 1996). For example, Law and associates demonstrated a 53% reduction in medical utilization as a result of MFT among high utilizers of health care services.

While MFT has been shown to produce an offset effect, there is still a limited understanding of which characteristics or attributes best predict the offset effect. Thompson et al. (1998) found large offset effects due to antidepressant therapy among those who had a clinical diagnosis of anxiety, coronary heart disease and chronic fatigue syndrome. Fifer et al. (2003) found that subjects' perceptions of general health and physical functioning provided the strongest evidence for increasing medical cost savings. While both of these studies suggested some predictive variables for medical offset, they examined only individual or pharmacological therapy. The purpose of this research is to identify predictors of the medical offset effect among families seeking treatment for marital and family problems. This information will begin to inform the process of

identifying targeted interventions to help decrease somaticization, health care utilization and potentially health care costs to individuals, families and society.

Literature Review

Benefits of Therapeutic Interventions

To better understand the effects of marital and family therapy on an individual's health, it is important to first step back and widen the lens to look at the effect of mental health problems and interventions on individuals and society. For example, studying the effect of generalized anxiety disorder, chronic worry, neuroticism and anxiety on physical symptomology, Hazlett-Stevens, Craske, Mayer, Chang, and Naliboff (2003) found that higher visceral anxiety was associated with irritable bowel syndrome in university students. This provides additional evidence of the cause and effect relationship that may exist between the psychological and biological elements of the biopsychosocial model.

Abbass (2002) provided another perspective of the biopsychosocial model with his research on the effects of providing intensive short-term dynamic psychotherapy (ISTDP) to individuals with DSM IV axis I diagnoses. Among the diagnoses were major depression, somatoform disorder, panic disorder, and dysthymic disorder. Of the 89 participants, 25% had been off work continuously for an average of 53 weeks and 52% of the individuals had been on psychotropic medications for an average of 27 months. After short-term psychotherapy, the average length of stay in a hospital fell from 9.8 days to 3.4 days for a comparable 12-month period. Abbass also found that 71% of those on psychotropic medications entirely stopped taking the drugs and 82% of those not working returned to work.

To understand the effects of psychosocial treatments on bipolar disorder, Huxley, Parikh, and Baldessarini (2000) reviewed 32 studies of group therapy, individual psychotherapy and marital and family therapy. While they noted limitations in research designs they still concluded that the research indicated "group, family, and individual psychosocial interventions [were] feasible… [and] such interventions produce important clinical benefits and economically significant reductions in hospitalization compared to standard treatment" (p. 137).

In their review of 64 articles, Kiecolt-Glaser and Newton (2001) looked at studies that focused on the effects of marital functioning on the individual's physiological processes. They found that negative interactions in the marital relationship both indirectly and directly affected individual health though changes in cardiovascular, immune, and endocrine functioning. One article reviewed by Kiecolt-Glaser and Newton looked at the relationship between marital quality and health among women (Prigerson, Maciejewski, & Rosenheck, 1999). In this article, Prigerson et al. found women slept better, had fewer depressive symptoms and fewer physician visits when there was marital harmony. They also found a relationship between marital dissolution and poorer mental and physical health.

One area of family therapy research has focused on how members of the family system deal with chronic and terminal illnesses (e.g. Cohen, 1999; Gerhardt, Walders, Rosenthal, & Drotar, 2004; Rolland, 1987). For example, Rolland found that beliefs play a significant role in how families deal with illness. In her review Cohen found substantial benefits when families came together and combined their resources to deal with the illness of one of the children. Gerhardt et al. noted that psychological interventions "have

demonstrated improvements in outcomes for children with chronic illness…" (p. 183) and they have provided benefits for other family members as well.

Overall the research points to many benefits in physical and family health from psychological and social interventions. These benefits have been demonstrated in both individual and relational contexts. The important question remains of how to quantify the benefits of these interventions. In his evaluation of the state of health care, Crane (1995) discussed some cost benefits that may help answer this question. He outlined economic benefits to companies and society such as increased productivity and reduced absenteeism by providing mental health services to employees. He also mentioned the potential for a cost offset by providing mental health services. Finally, Crane (1996) outlined many other economic, psychological and social benefits of marital and family therapy interventions.

The Medical Offset Effect

Interventions from psychology. Medical offset is one way these economic, psychological and social benefits are being quantified. This research has found many economic benefits of psychological and social interventions. Gabbard, Lazer, Hornberger, and Spiegel (1997) reviewed 18 articles using a strict set of criteria for medical cost offset. The criteria included the following: studies had to specifically test psychotherapeutic interventions, outcomes had to have cost implications, articles could not be reviews or meta-analyses, and only one article per data set was allowed. They found that 16 of the 18 articles provided support for the notion that psychotherapy may reduce the total cost of health care. Their review also noted "greater earning power, less

welfare income, and strikingly lower hospitalization rates" among those who participated in psychotherapy (p. 151).

In their meta-analysis, Chiles et al. (1999) noted that 90% of the 91 articles studied "reported a decrease in medical utilization following some form of psychological intervention" (p. 209). They also estimated hospital stay savings to be $2,205 per person per year in conjunction with an average reduction in utilization of 15.7% for the treatment group in treatment-control comparison studies. This is significant when compared with the control group's average utilization increase of 12.27%. Holder and Blose (1987) performed a four-year study of the effects on health care costs of federal employees when mental health services were added to the health plan. They saw a reduction in monthly health care costs (from the 12 months prior to the initiation of therapy coverage to the 12 months after the initiation) of $54.49 per person. Holder and Blose also noted that prior to the commencement of therapy coverage, health care costs and utilization trended upward, while costs continued "to drop for up to three years after treatment initiation [began]" (p. 170).

In another study, Sullivan and Stanish (2003) evaluated the economic benefits of psychological interventions that might be obtained through occupational rehabilitation. Participants of this study were individuals off work for an average of 18.3 weeks for soft tissue back injuries. Cognitive-behavioral interventions were applied over the course of 10 weeks with a goal of getting the participants back to work. By the end of the program, 45% of the participants had started working again and another 15% had contacted their employers to begin the process of returning to work. This study showed that psychological intervention had a significant economic impact in that 60% of the

participants went from collecting disability payments and incurring additional medical expenses to earning wages once again.

While such studies have shown that there are economic benefits and a cost offset, not all studies have found this to be the case. For example, Goldberg et al. (1981) found no significant offset, when studying individuals receiving outpatient medical services, after referral to mental health specialists. Subsets of their participants, however, did display a cost offset effect. Sturm (2001) claimed that there is not sufficient evidence to prove the existence of a medical cost offset that warrants policy reformation. However, Cummings (1996) disagreed and said that there has been 35 years of research showing its validity and that any health plan without mental health benefits will experience "over utilization" of medical and surgical services. Given the varying opinions, it is evident that continuing research is needed.

Marriage and family therapy interventions. It is also important to understand what research has shown in the field of marriage and family therapy. In looking at the effectiveness of behavioral marital therapy (BMT) in treating alcoholics, O'Farrell et al. (1996) noted significant cost savings. They evaluated legal and medical costs incurred prior to and after treatment for individuals with alcohol related problems. Average net (i.e., taking into account the cost of providing BMT) cost reductions of $2,900 per client were obtained for those individuals who completed treatment. This amounts to about a 56% reduction from the baseline expenses.

In the first known study to evaluate all types of MFT for medical offset, Law and Crane (2000) found evidence for an offset effect among individuals who received marital and family therapy. They noted a 21.5% reduction in health care utilization for all types

of MFT, a 21% reduction for marital therapy, a 9.5% reduction for the identified patient in family therapy, and a non-significant 30.5% reduction for other members of the family involved in family therapy. In a follow-up study Law et al. (2003) looked at the same dataset to evaluate decreases for those considered high utilizers of health care services. They found that this group saw a 53% reduction in utilization when all types of MFT interventions were combined.

To date, the majority of the evidence points to an offset effect (e.g., Crane, Wood, Law, & Schaalje, 2004). Such research is important because it provides additional knowledge about the medical cost savings that can be obtained through intervening in the psychological and social dimensions of the biopsychosocial model. Importantly, not only are the benefits in the biological, psychological and social functioning of an individual seen, but economic benefits are obtained as well (Crane, Hillin, & Jakubowski, 2005). However, the question still remains as to which elements of psychological and social functioning can be targeted to obtain the biggest social and economic impact.

Predictors of Health Care Utilization and Medical Offset

Several studies have looked at the effect of psychosocial functioning on health (e.g. Christenson, Crane, Hafen, & Schaalje, 2005; Mayou et al., 2000; Nouwen, Freeston, Labbe & Boulet, 1999; Parekh et al., 2003; Riley et al., 1993; Rudy, Lieber, Boston, Gourley, & Baysal, 2003). This research has led to a better understanding of the relationships that exist among the dimensions of the biopsychosocial model. For example, Riley et al. looked at the effect of psychosocial functioning on children's health care utilization. They were able to explain 33% of the variance of health care utilization with their model. Elements of this model included the child's use of medication at entry

into the study, mother's utilization of health care in the past two years, child's use of a school counselor, and family conflict.

In another study, Nouwen et al. (1999) evaluated psychological factors that could be associated with asthmatic patients' emergency room visits. They studied differences that existed between high and low utilizers. They found that those who more frequently visited the emergency room had greater panic and fear symptoms, lower self-efficacy and a greater level of perceived interference from those around them.

Predictive studies can provide us with considerable insight as to the most effective way to approach clients. Unfortunately there are very few studies that examine the predictive value of psychosocial variables in relation to the medical offset effect. For example, Thompson et al. (1998) looked for predictors of medical offset for those receiving antidepressant therapies. They found that individuals with coronary heart disease, cancer, chronic fatigue syndrome, and/or anxiety who stayed on antidepressants for a minimum of 6 months were more likely to manifest a cost offset following treatment.

Fifer et al. (2003) took a different approach to identifying predictors of medical offset. They first divided the sample into those who had shown a reduction in medical costs and those who had experienced an increase in medical costs. All participants presented with anxiety and/or depression and received treatment. Their model yielded five variables that were related to change in medical visits. These were age, somatization-related co morbidities, physical functioning, general health perceptions, and physical role functioning.

Additional research has looked at social support in relation to health practices. In

their meta-analysis, Yarcheski, Mahon, Yarcheski, and Canella (2004) identified several psychosocial predictors of an individual's health practices. The two predictors with the greatest effect size were loneliness and social support. They noted that the lonelier an individual is and the less social support an individual has the less likely they are to take care of themselves physically. Messina et al. (2004) found women who received "lower levels of either emotional/information support or positive social interactions… (both elements of social support) were significantly and independently associated with less frequent use of mammography, CBE (clinical breast examinations), and BSE (breast self-examinations)" (p. 590). If social support can lead to an increase in health practices, what effect can MFT have on social support?

Pasch and Bradbury (1998) noted in their study that a relationship between social support and marital dysfunction and distress existed. Additionally, Allgood, Crane, and Agee (1997) noted that the greater the marital distress, the more likely women were to seek outside social support and eventually therapy. When taken together, social support appears to play a substantial role in marital relationships and those that may have more marital distress may see a reduction in their social support and thus a reduction in their health practices. While these studies have provided insight into predictors, they have focused on individual psychotherapy, pharmacotherapy and the individual's health practices. No known research has been found that looked at predictors related to individuals seeking marital and family therapy for relational problems.

Purpose of the Study

Most studies to date have shown that mental health interventions can have a positive effect on reducing medical utilization, thereby demonstrating a medical offset

effect. If it can be understood how to most effectively impact the individual and family system, it may be possible to begin to develop focused interventions for reducing health care costs for individuals and families. This will potentially provide clinicians with one way to alter the current trend of health care cost increases. One challenge in accomplishing this is the limited research on the predictive value of specific variables as they relate to the offset effect. Those articles found have limited generalizability because of a focus on pharmacotherapy and individual therapy models. Also, the research to date has not looked at the possible contribution of family and social support factors.

The purpose of this study was to identify predictors of medical offset effect among individuals seeking marital and family therapy for relational problems. It was also important to understand psychosocial elements of this group as they had the potential to impact health care utilization both for the individual and the family as a whole as shown by Law and Crane (2000). Galdas, Cheater, and Marshall (2005) noted males and females have different patterns and timing of health care utilization. Additionally, in their evaluation of health care utilization among patients with diabetes, Shalev, Chodick, Heymann, and Kokia (2005) noted that women tend to use more health care than men and have a higher morbidity rate. Because of the potential for differing patterns of health care utilization for men and women it is important to examine related effects separately. Based on these items, the research question was:

1. What demographic, relational, social, and mental health variables across time predict a change in health care utilization for males as a group or for females as a group following MFT interventions?

Method

Sample

Individuals, couples, and families who requested marriage and family services for relationship and/or family problems from the Comprehensive Clinic at Brigham Young University (BYU) provided the participant pool for the study. The sample was drawn from those who received marital and/or family therapy provided by student interns associated with the Marriage and Family Therapy graduate program at BYU. Each participant was compensated $105 for his or her participation in the research project. The sample consisted of 52 individuals. Of those, 54% (n = 28) were male and 46% (n = 24) were female. Additionally, all individuals were married and 14 couples participated in this study. Demographic information showed that the sample was predominantly Caucasian (98%), with an average age of 30 years, and were predominantly college graduates (66% had a bachelor's degree). The mean income was $40,000 per year. Summary statistics for the various demographic variables, as well as independent and dependent variables are in Table 1.

Table 1 About Here

Procedure

Following approval of the study by the University Institutional Review Board, all persons who requested services from the clinic were invited to participate in this study. If they expressed interest, information about possible inclusion in the study was sent to them. Initial contact regarding participation was made over the phone or during the

clinic's intake procedures. During the clinic intake procedure, the intake officer provided an explanation of the study and the voluntary nature of participation. People interested in participating, were sent a packet of questionnaires (Appendix A). Included in the packet was the research consent form (Appendix B).

To ensure participant confidentiality, all returned packets and health information were kept in a locked cabinet. Private health information was only made accessible to the principal investigator. Assignment of a case number was made at the time the packet was mailed. This number allowed any information collected to be associated with a master list of participant information should any follow-up contacts be required. After the assessments (Time 1-pretherapy) were returned, the individual was formally included as a participant in the study. Twelve months after the Time 1 packet was received, another packet was sent (Time 2-followup). This packet contained the same information as the first packet. With each receipt, the participant consent form, which contains the name, was separated from the assessment and stored in the locked cabinet after the identifying number had been confirmed on the assessment packet. Of those participants that completed the packet at Time 1 (n = 229), 42% completed the packet at Time 2 (n = 96). There are no differences known to exist between those who completed the packet at Time 3 and those who did not.

Measures

Participants were asked to fill out seven unique measures as well as demographic information (Appendix A). All measures and demographic information were collected at Time 1 and Time 2.

Multidimensional Health Profile-Psychosocial Functioning (MHP-P). The MHP-P assesses psychosocial functioning. It accomplishes this through the assessment of items such as life stress, coping skills, social resources, psychological distress, and life satisfaction. Ruehlman, Lanyon, and Karoly (1998) found significant correlations ($p<.001$) through the employment of test-retest procedures to establish reliability of this measure.

Patient Assessment Questionnaire (PAQ). The PAQ was a device developed to measure various aspects of health care utilization and quality of life. This study focused on the health care utilization questions. These questions look at specific information related to the use of medical services within the last six months. To date, no psychometric information has been published by Wells (1999) who was involved in the creation of this measure for the Partners in Care study. However, Hafen (2003) found the measure both reliable and valid in collecting the number of physician visits and hospital stays. He found emergency room visits and mental health visits reliable but questioned their validity.

RAND-36 Item Health Survey (RAND-36). Developed as part of the Medical Outcomes Study, the RAND-36 measures an individual's physical and mental health-related quality of life. This is accomplished through eight subscales: physical functioning ($\alpha = .93$), role limitations due to physical health ($\alpha = .84$), role limitations due to emotional problems ($\alpha = .83$), energy/fatigue ($\alpha = .86$), emotional well-being ($\alpha = .90$), social functioning ($\alpha = .85$), pain ($\alpha = .78$), and general health ($\alpha = .78$), as well as a single item that measures a perceived change in health (Hays, Sherbourne, & Mazel, 1995).

Family Emotional Involvement and Criticism Scale (FEICS). This device was developed to measure the two concepts of perceived criticism (PC) and emotional involvement (EI) within the concept of expressed emotion. An evaluation of this measure reported a Cronbach's alpha of .82 and .74 for the PC and EI subscales, respectively (Shields, Franks, Harp, McDaniel, & Campbell, 1992). When a confirmatory factor analysis was run during this same evaluation it was found that all questions loaded on one or the other of the two factors with the loadings being greater than or equal to .50.

Revised Dyadic Adjustment Scale (R-DAS). The R-DAS is a modification of the original dyadic adjustment scale developed by Spanier (1976). There are four measurements provided by this device. They are: an overall R-DAS score (range = 0-69, $\alpha = .90$) and three subscale scores for consensus ($\alpha = .81$), satisfaction ($\alpha = .85$), and cohesion ($\alpha = .80$) (Busby, Crane, Larson, & Christiansen, 1995). Crane, Middleton, and Bean (2000) noted a cutoff score of 48 for the overall measure, which has been shown to distinguish between distressed and non-distressed couples.

Family Assessment Device (FAD). The FAD is a Likert type scale developed to measure family functioning. It is composed of seven subscales; namely, general functioning, problem solving, communication, roles, affective responsiveness, affective involvement, and behavioral control. Each subscale has been found to have good internal validity with Cronbach's alpha ranging from .72 to .92 (Epstein, Baldwin, & Bishop, 1983). Although, some have discussed reorganization due to some overlap in the subscales (Ridnour, Daly, & Reich, 1999), Miller, Ryan, Keitner, Bishop and Epstein (2000) argue that the overlap is related to the General Functioning subscale which was

developed as a multidimensional measure and therefore should have a high correlation to the other subscales.

Brief Symptom Inventory (BSI). The BSI was developed to reveal psychological symptom patterns in individuals. There are nine subscales that measure symptoms. They are: somatization, obsessive-compulsive, interpersonal-sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. Additionally, three scales measure the general psychological functioning of the individual, namely, the general severity index, the positive symptoms total, and the positive symptom distress index. The nine symptom subscales were found to have internal consistency coefficients between .71 and .85 (Derogatis, 1993). The psychological positioning scales were found to have scores ranging from .80 for the positive symptom total to .90 for the general severity index in a test-retest analysis.

Analysis of Data

Preliminary analysis. In order to prepare the data for analysis, only participants who had completed packets at Time 1 and Time 2 were extracted from the dataset (n = 96). Each female participant was then evaluated to determine if there was a pregnancy during the study. We removed them from our sample due to the potential for a pregnancy to skew our dependent variable (n = 18). Individuals were also excluded if they didn't have a treatment ratio of 3:1 with family and couple sessions being the predominant form of therapy (n = 17) (Law & Crane, 2000). Individuals that did not have three sessions of therapy were also removed from our analysis (n = 8) (Allgood & Crane, 1991). Finally, we excluded those individuals that were not currently married from our sample (n = 1). Based on the available research, variables that had been found in previous research to

have an effect on medical offset were included in the initial analysis. These variables included age, somatization-related co-morbidities, physical functioning, general health perceptions, physical role functioning, hostility, anxiety, family conflict, and social support (Christenson, 2003; Fifer et al., 2003; Nouwen et al., 1999; Riley et al., 1993; Thompson et al., 1998; Yarcheski et al., 2004).

Research question. What demographic, relational, social, and mental health variables across time predict a change in health care utilization for males as a group or for females as a group following MFT interventions? This research focused on trying to find psychosocial targets that could be concentrated on in a therapeutic setting to affect a change in medical use of the client seeking therapy. Due to the limited research currently available, this was an exploratory study. Several steps were taken in order to determine the variables most likely to predict a change in health care utilization after MFT. Best subsets multiple regression using Minitab was employed. This analysis was done by looking at changes between Time 1 and Time 2 in a two-tiered approach to determine the best group of predictors. The variables were broken down into four groupings of like type and regressions were run on each of these component groups (e.g. demographic, relational measures, social measures, and mental health measures). The subset of variables from each component listed above that produced the largest adjusted multiple correlation squared value in conjunction with the lowest Mallows C-p statistic was used in the across-component analysis. Table 1 lists all variables used in this analysis.

The second tier of the analysis was comprised of the subsets from each of the components that were determined, by review, to be the strongest subset for our model. Each of the four strongest components subsets were then combined into one set. The

analysis process was then run again to determine the strongest across-component subset based on the metric described above.

The resulting models were then evaluated for ease of understanding. Each model contained variables from several different psychosocial measures. Due to the complexity of understanding the resulting models, some of the variables were inverted to allow all variables in the resulting model to move in concert to each other in relation to the dependent variable. Recodoing the variables did not influence their logical effects. As the individual becomes healthier, according to the psychosocial measure, their health care utilization decreased.

In order to determine the variables that are most likely to predict a change in health care utilization across time for men and for women, the main focus of the question was to evaluate which change statistics, as a group, were the strongest predictors of changes in health care utilization. The resulting model may provide intervention targets that could be applied in therapy.

Results

Research Question – What demographic, relational, social, and mental health variables across time predict a change in health care utilization for males as a group or for females as a group following MFT interventions?

The research question evaluated the subset of the change in variables, from Time 1 to Time 2, in relation to the change in health care utilization. The selection of each component subset and the across-component model were made in a subjective manner with the goal of maximizing the adjusted R^2 and minimizing the C-p Mallows statistic.

Analysis for males. The across-component analysis of males was composed of eight variables. Four of those variables, defined by the model, were found to have the anticipated negative correlation. The results of these four variables showed that as the individual became healthier, as measured by each specific psychosocial measure, health care utilization decreased in Time 2. The variables were dyadic cohesion ($p < .01$); total coping ($p < .001$); general health perceptions ($p < .05$), and the individual's level of anxiety ($p < .001$). The remaining four variables, determined by the model, were positively correlated with the dependent variable. These variables were negative social exchange with friends and family ($p < .05$), the individual's somatic complaints ($p < .001$), the individual's obsessive-compulsivity ($p < .001$), and phobic anxiety ($p < .001$). Overall the eight variable model was statistically significant (F (8, 19) = 6.95, $p < .001$) and explained 63.8% ($R^2_{adj} = .638$) of the variance of an individual's change in health care use after therapy. All findings along with their standardized coefficients can be found in Table 2.

Table 2 About Here

Analysis for females. The across-component analysis of females was composed of 8 variables. Four of those variables showed that as the individual became healthier, as measured by each specific psychosocial measure, health care utilization decreased in Time 2 when compared to Time 1. The variables were; perceived criticism from family ($p < .01$), the emotional involvement of family ($p < .01$), perceived change in health over the last year ($p < .01$), and a global severity index measuring the severity of all mental

health problems ($p < .01$). The remaining four variables, determined by the model, were positively correlated with the dependent variable. These variables were the individual's global environmental and social stress ($p < .05$), negative social exchange from friends and family ($p < .10$), the individual's emotional well being ($p < .001$), and the individual's paranoid ideation ($p < .01$). Overall the model was statistically significant (F (8, 15) = 15.51, $p < .001$) and explained 83.5% ($R^2_{adj} = .835$) of the variance of an individual's change in health care use after therapy. See Table 3 for the results for women.

Table 3 About Here

Discussion

These findings provide the only known information on predictors of health care utilization over time for individuals seeking marital and family therapy. They provide a substantial amount of information about relationships that exists between an individual's psychosocial functioning and their use of health care.

Since this was an exploratory study, the decision was made to look at the change in psychosocial variables, change statistics, from Time 1 to Time 2 and their relationship to the change in health care utilization.

Men's health care utilization predictors

For men, the more their perceived health improved post therapy, the less they used health care after therapy ended. This result is in line with the Fifer et al. (2003) findings which noted an individual's perception of their health as one of the variables

associated with the largest cost offset. In addition, health care decreased as cohesion with their spouse increased. Also a decrease in tensions was associated with less health care use. Finally, the more that men's ability to cope with life stresses increased during therapy, the less they used health care. The more control in handling their interpersonal problems and the less anxiety men felt they had the greater the reduction in health care utilization. These findings for men provide valuable insight as to interventions that may be effective when working with them in therapy. The teaching of communication skills, anxiety reducing strategies and other behavioral interventions could have an impact on reducing men's utilization of health care based on the relationships that were found in this study.

One area of concern for men was found among the mental health variables. The more obsessive-compulsive a man was, the more somatic complaints he expressed, and the more phobic anxiety he exhibited the less he used health care. These men may be avoiding medical care as one possible coping strategy. If this is the case, they may be missing important preventative care and disease management.

Women's health care utilization predictors

Women's health care utilization decreased as their perception of being criticized by their family decreased. This could further explain the Prigerson et al. (1999) findings that found women slept better, had fewer depressive symptoms and fewer physician visits when there was marital harmony. Being criticized could be a form of marital disharmony which was found to have a relationship with more physician visits.

It was also noted that the more their emotional involvment increased with their family and the better they perceived their health to be from the year prior, the greater the

reduction in their health care utilization One of the interesting differences noted between men and women was the greater the increase in physical and mental problems women felt the more they utilized health care, whereas physical and mental problems had the opposite effect on men. This may occur as men generally want to solve their own problems and therefore may be less likely to seek outside advice and opinions about the problems they are facing.

An interesting effect noted for women was the less happy they felt, the more stress they had and the more negative they felt others were being toward them the less they utilized health care. These findings were supported by the meta-analysis of Yarcheski et al. (2004). They noted that the less social support and the more stress individuals had the less likely they were to have positive health practices. Lastly, the model showed the more women felt others would take advantage of them the lower their utilization of health care. This may relate to issues of trust. It could be when women do not feel they can trust others, they may think doctors will take advantage of them and not go. For women, many of the predictors found tied back to an emotional motivation. Based on the findings of this study, it is believed that when women felt emotionally connected and experienced positive interactions in their close interpersonal relationships it appeared they took better care of themselves and may utilize health care in a more preventative format.

The findings of this study allude to different types of interventions for women and men to bring about positive changes after therapy. It appeared for women, improving their emotional connection with their spouse may have very positive effects on how they take care of themselves and how they utilize health care. For MFTs, applying the

principles and concepts of Emotionally Focused Therapy during the therapeutic process could bring about the emotional connection women are seeking. Additionally, therapists may want to consider conjoint formats of therapy for women since they were found to be seeking an emotional connection. The connection formed with the therapist during the therapeutic process where the husband is not present may prove problematic when the female client wants to terminate therapy and has not formed that bond with her husband.

The resulting models of this study show that men and women require different formats in therapy to bring about positive effects related to their utilization of health care. Using a model such as Behavioral Marital Therapy may only provide males with the needed changes to affect their health care utilization. Conversely, using a model such as Emotionally Focused Therapy may only provide females with what they need to affect health care utilization. It would seem that a combination of the two along with preventative health care visits would be the most effective in providing the couple with what they need to improve their biological, psychological and social functioning. Finally, based on Crane, Soderquist and Frank's (1995) findings that the woman's Marital Status Inventory score is more predictive of divorce, the therapist may want to consider working on the emotional connection first if a high probability of divorce exists.

One last item worth mentioning is the sample's change in health care use. The male participants in this study had a mean reduction in health care use of .68 visits ($p <$ .10). The female participants in this study had virtually no change with a mean increase of .08. The female's change was not statistically significant. One reason men in our sample may have had a statistically significant reduction in health care use while women did not could have to do with the models of therapy taught and used by the student

therapists in our sample. Most students used some form of cognitive and/or behavioral therapeutic model. This study has provided results that support a greater effect for males when cognitive and/or behavioral models are used. This may be the main reason we saw the resulting change in health care use for males and not for females.

Limitations

Although these finding provide a substantial amount of insight into predictors of health care utilization, there are some limitations which warrant attention. The sample size was fairly small given the number of predictors found (8 in each model) for men (n = 28) and women (n = 24). Some of the predictors found may not have measured the exact concepts we were trying to measure. Therapy services were being provided in a training center environment, this may have caused some effects to be less consistent. The therapeutic models used could have produced stronger results for one gender over the other.

Recommendations

Future studies should look at these findings in an environment outside of the training clinic environment. In addition, measures should be evaluated for inclusion and exclusion based on how closely they measure the findings of this research. It would also be beneficial to study the effects of providing behavioral and emotionally focused interventions to males and to females in a conjoint therapeutic setting to more appropriately evaluate their effect on health care utilization. Finally, further research should also be done on males' use of health care related to their mental health to understand that relationship better.

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Appendix A: Measures

Today's date: _____
To begin, we have a few general questions about you:
1) What is your age (in years)? _____

2) What is your gender? (Circle one)
A. Male
B. Female

3) What is your race? (Circle one)

A. Hispanic
B. African American
C. Asian
D. Pacific Islander
E. Caucasian
F. Other _____ (please specify)

4) What is your family's gross annual income (rounded to the nearest$1,000)?
_____
For example if Sam earned $25,400 and Mary earned $32,000, the total gross family income would be $57,000.

5) How many years of school have you completed (example: high school graduate would be 12 years)? _____

6) Average number of hours you work per week? _____

7) What is your religious affiliation? _____

8) What is your marital status? (Circle one)
A. Single
B. Married
C. Separated
D. Divorced
E. Other _____ (please specify)

9) How many children do you have that live with you? _____
Can you tell us the ages and genders?
_____
Are you a foster parent to any of these children? _____

10) If married, how many years have you been married? _____

11) If married, how many times have you been married (example: if this is your first time enter 1 or if this is your fourth time enter 4)? _____
MHP-P

Directions:
The following questions have been carefully chosen to give as much helpful information as possible to the researchers. Please read each item carefully and mark your answers directly on this booklet. Don't spend too long thinking about any one item. There are no right or wrong answers; everybody is different and everybody will give a different pattern of answers.

Over the **past year**, which of the following events have you experienced? Circle 1 ("No") if you **have not experienced** an event. Circle 2 ("Yes") if you **have experienced** an event. For each event that you **have experienced**, please rate how much stress or strain this event has caused you using the scale next to that item.

			If Yes, How Stressful Was This?					
	No	Yes		Not at all Stressful				Very Stressful
1. Moved to a different house or apartment.	1	2->	If Yes	1	2	3	4	5
2. Legal problems.	1	2->	If Yes	1	2	3	4	5
3. Began a new job.	1	2->	If Yes	1	2	3	4	5
4. A child in trouble at school, work or with the law.	1	2->	If Yes	1	2	3	4	5
5. Started or stopped going to school.	1	2->	If Yes	1	2	3	4	5
6. An increase in arguments with your spouse or other family member.	1	2->	If Yes	1	2	3	4	5
7. A serious illness of a close friend or close family member.	1	2->	If Yes	1	2	3	4	5
8. Financial problems	1	2->	If Yes	1	2	3	4	5
9. The death of a close friend or close family member.	1	2->	If Yes	1	2	3	4	5
10. A child moving away from home.	1	2->	If Yes	1	2	3	4	5
11. A close friend had serious trouble.	1	2->	If Yes	1	2	3	4	5
12. The birth or adoption of a child.	1	2->	If Yes	1	2	3	4	5

13. Fired or laid off from your job.	1	2-> If Yes	1	2	3	4	5	
14. A serious illness of your own.	1	2-> If Yes	1	2	3	4	5	
15. Trouble with you boss or co-workers.	1	2-> If Yes	1	2	3	4	5	
16. Moved to a new city.	1	2-> If Yes	1	2	3	4	5	
17. Bought a new home.	1	2-> If Yes	1	2	3	4	5	

	No Stress At All				A Great Deal
18. **Overall**, how much stress or strain have you felt over the past **year**?	1	2	3	4	5

Please rate the extent to which each of the following statements describes you when you are under stress.

	Does not Describe Me at All				Describes Me Very Well
19. I try to accept my feelings.	1	2	3	4	5
20. I make specific plans to solve my problems.	1	2	3	4	5
21. My main goal is to feel better.	1	2	3	4	5
22. I focus on controlling the situation.	1	2	3	4	5
23. I try to remain calm.	1	2	3	4	5
24. I try to find out more about the situation.	1	2	3	4	5

The following 13 questions refer to your relationships over the **past year** with close friends or close family **who are adults**.

	None				A Great Deal
25. Over the past **year**, how much emotional support did you receive from close friends or family?	1	2	3	4	5
26. How much emotional support will be available in the near future?	1	2	3	4	5

	Not at all Satisfied				Very Satisfied
27. How satisfied were you with whatever emotional support you received?	1	2	3	4	5

28. Over the past **year**, how much advice, information, or guidance did you receive from close friends or close family?	None 1 2 3 4 5	A Great Deal
29. How much advice, information, or guidance will be available in the near future?	None 1 2 3 4 5	A Great Deal
30. How satisfied were you with whatever advice, information, or guidance you received?	Not at all Satisfied 1 2 3 4 5	Very Satisfied
31. Over the past **year**, how often did close friends or close family do things for you or give you things you needed?	Not at all 1 2 3 4 5	A Great Deal
32. How likely is it that they will do things for you or give you things in the near future?	Not at all Likely 1 2 3 4 5	Very Likely
33. How satisfied were you with whatever they did for you or gave you?	Not at all Satisfied 1 2 3 4 5	Very Satisfied

When answering each of the following questions, please think **only** about close friends or close family **who are adults**.

34. Over the past **year**, how often were your close friends or close family angry, hostile, or impatient with you?	Never 1 2 3 4 5	Very Often
35. Over the past **year**, how often did your close friends or close family make fun of you, gossip about you, or reject you?	1 2 3 4 5	
36. Over the past **year**, how often did your close friends or close family act insensitively or inconsiderate or take you for granted?	1 2 3 4 5	
37. Over the past **year**, how often were your close friends or close family demanding, distracting, or in your way?	1 2 3 4 5	

Answer the following questions in terms of how you have been in the **past week or two**.

	Not at all				Very
38. How tired have you felt?	1	2	3	4	5
39. How depressed have you felt?	1	2	3	4	5
40. How **dissatisfied** have you felt with your life as a whole?	1	2	3	4	5
41. How easily have you felt scared?	1	2	3	4	5
42. How energetic have you felt?	1	2	3	4	5
43. How often do you have a "knot" in you stomach?	1	2	3	4	5
44. How often have you felt shaky or jittery?	1	2	3	4	5
45. How often have you had trouble with your memory?	1	2	3	4	5
46. How much has your mood been generally happy, upbeat, or positive?	1	2	3	4	5
47. How close to ideal has your life been?	1	2	3	4	5
48. How often have you "feared the worst"?	1	2	3	4	5
49. How satisfied have you felt with your life as a whole?	1	2	3	4	5
	Not at all				Very
50. How easily could you put your fears out of your mind?	1	2	3	4	5
51. How much have you though about your failures?	1	2	3	4	5
52. How much have you tended to blame yourself when things go wrong?	1	2	3	4	5
53. How hard has it been to focus on the things that you do?	1	2	3	4	5
54. How much have you lost interest in things?	1	2	3	4	5
55. How much have you tended to feel guilty when things go wrong?	1	2	3	4	5
56. How often have you felt worried?	1	2	3	4	5
57. How often have you felt light headed or dizzy?	1	2	3	4	5
58. How worn out have you felt?	1	2	3	4	5

PAQ

IMPORTANT INSTRUCTIONS-PLEASE READ

1. Please answer every question unless an arrow tells you to skip a question.
2. Answer the questions by circling your answer or writing your answer in the space provided.
3. If you are not sure of an answer, please give your best estimate.
4. If you have any question about how to complete this form, please call Russell Crane, (801) 422-3888.

This section is about visits you have made to doctors and other health care

professionals

1. During the past 6 months, how many total nights did you stay in a hospital or other treatment facility for treatment of physical problems?

WRITE IN THE NUMBER OF DIFFERENT NIGHTS: ☐☐

IF NONE, WRITE IN 00 AND GO TO Q4

---

2. Were the costs for your hospital stay completely covered by health insurance, paid for entirely out-of-pocket by you, or partly paid by insurance?

(Circle One)

Completely covered by health insurance .....1►GO TO Q4
Paid for entirely out of pocket 2
Partly covered by health insurance 3

---

3. Roughly how much did you have to pay in total for these hospital stays during the past 6 months?

WRITE IN THE AMOUNT: $☐☐☐☐

(WRITE IN 00000 IF NONE)

---

4. Have you ever been an overnight patient in a hospital for any emotional or mental problems?

(Circle One)

Yes, in the past six months 1
Yes, but not in the past six months .....2►GO TO Q8
No.....3►GO TO Q8

---

5. During the past 6 months, how many total nights did you stay in a hospital or other treatment facility for any personal or emotional problems? Count all overnight stays.

WRITE IN THE NUMBER OF NIGHTS: ☐☐

IF NONE, WRITE IN 00 AND GO TO Q8

---

6. Were the costs for you hospital stay completely covered by health insurance, paid for entirely out-of-pocket by you, or partly paid by insurance?

(Circle One)

Completely covered by health insurance .....1►GO TO Q8
Paid for entirely out of pocket 2
Partly covered by health insurance 3

---

7. Roughly how much did you have to pay in total for these hospital stays during the <u>past 6 months</u>?

WRITE IN THE AMOUNT: $ ☐☐☐☐☐

(WRITE IN 00000 IF NONE)

---

8. During the <u>past 6 months</u>, how many visits did you make to a hospital emergency room?

WRITE IN THE NUMBER OF VISITS: ☐☐

IF NONE WRITE IN 00 AND GO TO Q12

---

9. During how many of these hospital emergency room visits did you discuss personal or emotional problems such as emotions, nerves, alcohol, drugs, or mental health?

WRITE IN THE NUMBER OF VISITS: ☐☐

IF NONE, WRITE IN 00

10. Roughly how much did you have to pay in total out-of-pocket for hospital emergency room visits you made during the past 6 months?

WRITE IN THE AMOUNT: $ ☐☐☐☐☐

(WRITE IN 00000 IF NONE)

11. Were any of these visits to hospital emergency rooms which were not covered by your regular health plan?

(Circle One)

Yes 1
No.....2

12. During the past 6 months, how many visits did you make to medical providers such as primary care or family doctors, internists, surgeons or medical specialists, physicians assistants or medical nurse practitioners? (This question refers to office or clinic visits. Please do not include visits to a hospital emergency room, overnight stays in a hospital, nursing home, or other health care facility.)

WRITE IN THE NUMBER OF VISITS: ☐☐

IF NONE WRITE IN 00 AND GO TO Q17

13. In the past 6 months, were the costs for you visits completely covered by health insurance, paid for entirely out of pocket by you, or partly paid by insurance?

(Circle One)

Completely covered by health insurance .....1►GO TO Q15
Paid for entirely out of pocket 2
Partly covered by health insurance 3

14. Roughly how much did you have to pay in total for these visits during the past 6 months?

WRITE IN THE AMOUNT: $☐☐☐☐☐

IF NONE, WRITE IN 00

---

15. Were any of these visits to health professionals who were not covered by your regular health plan?

(Circle One)

Yes 1
No.....2

---

16. During how many of these visits to a medical provider did you bring up or discuss personal or emotional problems such as emotions, nerves, alcohol, drugs, or mental health?

WRITE IN THE NUMBER OF VISITS: ☐☐

IF NONE, WRITE IN 00

---

17. In your lifetime, have you ever received counseling or psychotherapy (individual, group, or family) from a health professional?

(Circle One)

Yes 1
No.....2

---

18. In you lifetime, have you ever visited a psychiatrist, psychologist, social worker, psychiatric nurse, or counselor?

(Circle One)

Yes 1

No..... 2►IF NO SKIP Q19-Q26

---

19. During the past 6 months, how many visits did you make to psychiatrists, psychologists, social workers, psychiatric nurses, or counselors? (Do not include visits to a hospital emergency room or visits that occurred while you were an overnight patient in a hospital or other healthcare facility)

WRITE IN THE NUMBER OF VISITS: ☐☐

IF NONE, WRITE IN 00 AND SKIP Q20 THROUGH Q27

---

20. What kind of mental health specialist did you see?

(Circle All That Apply)

Psychiatrist	1
Psychologist	2
Social Worker	3
Psychiatric Nurses	4
Counselor	5
Other	6
Don't know	7

---

21. Were any of these visits to mental health specialist who were not covered by you regular health plan?

(Circle One)

Yes 1
No.....2

---

22. In the past 6 months, were the costs for your visits with mental health specialists covered by health insurance, paid for entirely out-of-pocket by you or partly paid by insurance?

(Circle One)

Completely covered by health insurance .....1 ►SKIP TO Q24
Paid for entirely out of pocket 2
Partly covered by health insurance 3

---

23. Roughly how much did you have to pay in total for these visits during the past 6 months?

WRITE IN THE AMOUNT: $☐☐☐☐☐

(WRITE IN 00000 IF NONE)

---

24. How many of these visits included counseling for yourself only?

WRITE IN NUMBER OF VISITS: ☐☐

---

25. How many of these visits included counseling with other patients in a group?

WRITE IN NUMBER OF VISITS: ☐☐

---

26. How many of these visits included counseling with other member of your family or you partner?

WRITE IN THE NUMBER OF VISITS: ☐☐

---

27. If you received counselling from a mental health specialist, how much did the specialist who provided the counselling do any of the following?

(Circle One Number On Each Line)

	A Lot	Some	A Little	Not At All	Did not get Counselling
a. Encouraged you to do more of the things you enjoy	1	2	3	4	5
b. Helped you solve problems in your life	1	2	3	4	5
c. Helped you reduce or let go of thoughts that keep you down	1	2	3	4	5
d Helped you feel better about your life as it is	1	2	3	4	5
e. Told you about his or her own personal problems	1	2	3	4	5

_____

R-PAQ

IMPORTANT INSTRUCTIONS-PLEASE READ

1) Please answer every question unless the question does not apply to you.
2) Answer the questions by writing your answer in the space provided.
3) If you are not sure of an answer, please give your best estimate.
4) If you have any question about how to complete this form, please call Russell Crane, (801) 422-3888.

This section is about visits significant family members have made to doctors and other health care professionals

1) If married, during the last 6 months how many time has **your spouse** visited his/her primary care physician? _____

2) If married, during the last 6 months how many total nights did **your spouse** stay in a hospital or other treatment facility for treatment of a physical problem?

_____

3) If married, during the last 6 months how many total nights did **your spouse** stay in a hospital or other treatment facility for any personal or emotional problem?

_____

4) If married, during the last 6 months how many visits did **your spouse** make to a hospital emergency room? _____

5) If a parent, during the last 6 months how many time has **your oldest child** (under 18 years of age) visited his/her primary care physician? _____

6) If a parent, during the last 6 months how many total nights did **your oldest child** (under 18 years of age) stay in a hospital or other treatment facility for treatment of a physical problem? _____

7) If a parent, during the last 6 months how many total nights did **your oldest child** (under 18 years of age) stay in a hospital or other treatment facility for any personal or emotional problem? _____

8) If a parent, during the last 6 months how many visits did **your oldest child** (under 18 years of age) make to a hospital emergency room? _____

9) Do you have a physical disability? Yes/No (Circle one). If so, please specify.

_____

10) Does your spouse have a physical disability? Yes/No (Circle one).
If so, please specify. _____

11) Does your oldest child (under 18 years of age) have a physical disability? Yes/No (Circle one). If so, please specify. _____

12) Do you have a chronic illness? Yes/No (Circle one). If so, please specify.

_____

13) Does your spouse have a chronic illness? Yes/No (Circle one). If so, please specify.

_____

14) Does your child have a chronic illness? Yes/No (Circle one). If so, please specify.

_____

RAND 36

1. In general, would you say your health is:

Excellent	1
Very good	2

Good	3
Fair	4
Poor	5

2. **Compared to one year ago**, how would your rate your health in general **now**?

Much better now than one year ago	1
Somewhat better now than one year ago	2
About the same	3
Somewhat worse now than one year ago	4
Much worse now than one year ago	5

The following items are about activities you might do during a typical day. Does **your health now limit you** in these activities? If so, how much?

(Circle One Number on Each Line)

	Yes, Limited a Lot	Yes, Limited a Little	No, Not Limited at All
3. **Vigorous activities**, such as running, lifting heavy objects, participating in strenuous sports	1	2	3
4. **Moderate activities**, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf	1	2	3
5. Lifting or carrying groceries	1	2	3
6. Climbing **several** flights of stairs	1	2	3
7. Climbing **one** flight of stairs	1	2	3
8. Bending, kneeling, or stooping	1	2	3
9. Walking **more than a mile**	1	2	3
10. Walking **several blocks**	1	2	3
11. Walking **one block**	1	2	3
12. Bathing or dressing yourself	1	2	3

During the **past 4 weeks**, have you had any of the following problems with your work or other regular daily **activities as a result of your physical health**?

(Circle One Number on Each Line)

	Yes	No
13. Cut down the amount of time you spent on work or other activities	1	2
14. **Accomplished less** than you would like	1	2
15. Were limited in the **kind** of work or other activities	1	2
16. Had **difficulty** performing the work or other activities (for example, it took extra effort)	1	2

During the **past 4 weeks**, have you had any of the following problems with your work or

other regular daily activities **as a result of any emotional problems** (such as feeling depressed or anxious)?

(Circle One Number on Each Line)

	Yes	No
17. Cut down the **amount of time** you spent on work or other activities	1	2
18. **Accomplished less** than you would like	1	2
19. Didn't do work or other activities as **carefull**y as usual	1	2

20. During the **past 4 weeks**, to what extent has your physical health or emotional problems interfered with your normal social activities with family, friends, neighbors, or groups?

(Circle One Number)

Not at all	Slightly	Moderately	Quite a bit	Extremely
1	2	3	4	5

21. How much **bodily** pain have you had during the **past 4 weeks**?

(Circle One Number)

None	Very Mild	Mild	Moderate	Severe	Very Severe
1	2	3	4	5	6

22. During the **past 4 weeks**, how much did pain interfere with your normal work (including both work outside the home and housework)?

(Circle One Number)

Not at all	A little bit	Moderately	Quite a bit	Extremely
1	2	3	4	5

These questions are about how you feel and how things have been with you **during the past 4 weeks**. For each question, please give the one answer that comes closest to the way you have been feeling.

How much of the time during the past 4 weeks . . .

(Circle One Number on Each Line)

	All of the Time	Most of the Time	A good bit of the Time	Some of the Time	A Little of the Time	None of the Time
23. Did you feel full of pep?	1	2	3	4	5	6

24. Have you been a very nervous person?	1	2	3	4	5	6
25. Have you felt so down in the dumps that nothing could cheer you up?	1	2	3	4	5	6
26. Have you felt calm and peaceful?	1	2	3	4	5	6
27. Did you have a lot of energy?	1	2	3	4	5	6
28. Have you felt downhearted and blue?	1	2	3	4	5	6

	All of the Time	Most of the Time	A good bit of the Time	Some of the Time	A Little of the Time	None of the Time
29. Did you feel worn out?	1	2	3	4	5	6
30. Have you been a happy person?	1	2	3	4	5	6
31. Did you feel tired?	1	2	3	4	5	6

32. During the **past 4 weeks**, how much of the time has your **physical health or emotional problems** interfered with your social activities (like visiting with friends, relatives, etc.)?

All of the Time	Most of the Time	Some of the Time	A Little of the Time	None of the Time
1	2	3	4	5

How TRUE or FALSE is **each** of the following statements for you.

(Circle One Number on Each Line)

	Definitely True	Mostly True	Don't Know	Mostly False	Definitely False
33. I seem to get sick a little easier than other people	1	2	3	4	5
34. I am as healthy as anybody I know	1	2	3	4	5
35. I expect my health to get worse	1	2	3	4	5
36. My health is excellent	1	2	3	4	5

FEICS

DESCRIBE YOUR FAMILY:

Almost Never	Once in a While	Sometimes	Often	Almost Always
1	2	3	4	5

1. _____ I am upset if anyone else in my family is upset.
2. _____ My family approves of most everything I do.

3. _____ My family knows what I am feeling most of the time.
4. _____ My family finds fault with my friends.
5. _____ Family members give me money when I need it.
6. _____ My family complains about the way I handle money.
7. _____ My family knows what I am thinking before I tell them.
8. _____ My family approves of my friends.
9. _____ I often know what my family members are thinking before they tell me.
10. _____ My family complains about what I do for fun.
11. _____ If I am upset, people in my family get upset too.
12. _____ My family is always trying to get me to change.
13. _____ If I have no way of getting somewhere my family will take me.
14. _____ I have to be careful what I do or my family will put me down.

RDAS

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

	Always agree	Almost always agree	Occasion-ally agree	Frequently disagree	Almost always disagree	Always disagree
1. Religious matters	_____	_____	_____	_____	_____	_____
2. Demonstration of affection	_____	_____	_____	_____	_____	_____
3. Making major decisions	_____	_____	_____	_____	_____	_____
4. Sex relations	_____	_____	_____	_____	_____	_____
5. Conventionality (correct or proper behavior)	_____	_____	_____	_____	_____	_____
6. Career decisions	_____	_____	_____	_____	_____	_____

	All the time	Most of the time	More often than not	Occasion-ally	Rarely	Never
7. How often do you discuss or have you considered divorce, separation, or terminating your relationship?	_____	_____	_____	_____	_____	_____
8. How often do you and your partner quarrel?	_____	_____	_____	_____	_____	_____
9. Do you ever regret that you married (or live together)?	_____	_____	_____	_____	_____	_____
10. How often do you and your mate “get on each others nerves”?	_____	_____	_____	_____	_____	_____

	Every day	Almost every day	Occasion-ally	Rarely	Never
11. Do you and you mate engage in outside interests together?	_____	_____	_____	_____	_____

How often would you say the following occur between you and your mate?

	Never	Less than once a month	Once or twice a month	Once or twice a week	Once a day	More often
12. Have a stimulating exchange of ideas.	_____	_____	_____	_____	_____	_____
13. Work together on a project.	_____	_____	_____	_____	_____	_____
14. Calmly discuss something.	_____	_____	_____	_____	_____	_____

FAD

Attached are some statements about families. Please read each statement carefully, to see how well it describes your own family. You may feel that some of the statements are true for some family members and false for others. Please answer according to your best impression overall.

Each statement has four possible responses:

Strongly Agree (SA)
You feel that the statement describes your family very accurately.
Agree (A)
You feel that the statement describes your family for the most part.
Disagree (D)
You feel that the statement does not describe you family for the most part.
Strongly Disagree (SD)
You feel that the statement does not describe your family at all.

Try not to spend too much time thinking about each statement, but respond as quickly and as honestly as you can. If you have trouble with any statement, answer with your first reaction.

Remember, do not try to figure out how other members see the family. We would like to know what your family seems like to *you.*

Please be sure to answer every statement by placing an "X" or checkmark in the space provided next to each statement.

1. Planning family activities is difficult because we misunderstand each other.	____SA ____A ____D ____SD

2. We resolve most everyday problems around the house.	____SA	____A	____D	____SD
3. When someone is upset the others know why.	____SA	____A	____D	____SD
4. When you ask someone to do something, you have to check that they did it.	____SA	____A	____D	____SD
5. If someone is in trouble, the others become too involved.	____SA	____A	____D	____SD
6. In times of crisis we can turn to each other for support.	____SA	____A	____D	____SD
7. We don't know what to do when an emergency comes up.	____SA	____A	____D	____SD
8. We sometimes run out of things that we need.	____SA	____A	____D	____SD
9. We are reluctant to show our affection for each other.	____SA	____A	____D	____SD
10. We make sure members meet their family responsibilities.	____SA	____A	____D	____SD
11. We cannot talk to each other about the sadness we feel.	____SA	____A	____D	____SD
12. We usually act on our decisions regarding problems.	____SA	____A	____D	____SD
13. You only get the interest of others when something is important to them.	____SA	____A	____D	____SD
14. You can't tell how a person is feeling from what they are saying.	____SA	____A	____D	____SD
15. Family tasks don't get spread around enough.	____SA	____A	____D	____SD
16. Individuals are accepted for what they are.	____SA	____A	____D	____SD
17. You can easily get away with breaking the rules.	____SA	____A	____D	____SD
18. People come right out and say things instead of hinting at them.	____SA	____A	____D	____SD
19. Some of us just don't respond emotionally.	____SA	____A	____D	____SD
20. We know what to do in an emergency.	____SA	____A	____D	____SD
21. We avoid discussing our fears and concerns.	____SA	____A	____D	____SD
22. It is difficult to talk to each other about tender feelings.	____SA	____A	____D	____SD
23. We have trouble meeting our bills.	____SA	____A	____D	____SD

24. After our family tries to solve a problem, we usually discuss whether it worked or not.	____SA	____A	____D	____SD
25. We are too self-centered.	____SA	____A	____D	____SD
26. We can express feelings to each other.	____SA	____A	____D	____SD
27. We have no clear expectations about toilet habits.	____SA	____A	____D	____SD
28. We do not show our love for each other.	____SA	____A	____D	____SD
29. We talk to people directly rather than through go-betweens.	____SA	____A	____D	____SD
30. Each of us has particular duties and responsibilities.	____SA	____A	____D	____SD
31. There are lots of bad feelings in the family.	____SA	____A	____D	____SD
32. We have rules about hitting people.	____SA	____A	____D	____SD
33. We get involved with each other only when something interests us.	____SA	____A	____D	____SD
34. There's little time to explore personal interests.	____SA	____A	____D	____SD
35. We often don't say what we mean.	____SA	____A	____D	____SD
36. We feel accepted for who we are.	____SA	____A	____D	____SD
37. We show interest in each other when we can get something out of it personally.	____SA	____A	____D	____SD
38. We resolve most emotional upsets that come up.	____SA	____A	____D	____SD
39. Tenderness takes second place to other thing in our family.	____SA	____A	____D	____SD
40. We discuss who is to do household jobs.	____SA	____A	____D	____SD
41. Making decisions is a problem for our family.	____SA	____A	____D	____SD
42. Our family shows interest in each other only when they can get something out of it.	____SA	____A	____D	____SD
43. We are frank with each other.	____SA	____A	____D	____SD
44. We don't hold to any rules or standards.	____SA	____A	____D	____SD
45. If people are asked to do something, they need reminding.	____SA	____A	____D	____SD
46. We are able to make decisions about how to solve problems.	____SA	____A	____D	____SD
47. If the rules are broken, we don't know what to expect.	____SA	____A	____D	____SD

48. Anything goes in our family.	SA	A	D	SD
49. We express tenderness.	SA	A	D	SD
50. We confront problems involving feelings.	SA	A	D	SD
51. We don't get along well together.	SA	A	D	SD
52. We don't talk to each other when we are angry.	SA	A	D	SD
53. We are generally dissatisfied with the family duties assigned to us.	SA	A	D	SD
54. Even though we mean well, we intrude too much into each others lives.	SA	A	D	SD
55. There are rules about dangerous situations.	SA	A	D	SD
56. We confide in each other.	SA	A	D	SD
57. We cry openly.	SA	A	D	SD
58. We don't have reasonable transportation.	SA	A	D	SD
59. When we don't like what someone has done, we tell them.	SA	A	D	SD
60. We try to think of different ways to solve problems.	SA	A	D	SD

BSI

Below is a list of problems and complaints that people sometimes have. Please circle a number between **0** and **4** that best describes how much that problem has **BOTHERED OR DISTRESSED** you or how much you've **EXPERIENCED IT** in the **PAST TWO WEEKS,** including today.

YOUR FIRST REACTION TO EACH QUESTION SHOULD BE YOUR ANSWER.

0	1	2	3	4
Not at All (NA)	**slightly (s)**	**moderately (m)**	**quite a bit (q)**	**Extremely (E)**

HOW MUCH WERE YOU BOTHERED BY OR DID YOU EXPERIENCE:

		NA	s	m	q	E
1.	Nervousness or shakiness inside	0	1	2	3	4
2.	Faintness or dizziness	0	1	2	3	4
3.	The idea that someone else can control your mind	0	1	2	3	4
4.	Feeling others are to blame for most of your troubles	0	1	2	3	4

5.	Trouble remembering things	0	1	2	3	4
6.	Feeling easily annoyed or irritated	0	1	2	3	4
7.	Pains in heart or chest	0	1	2	3	4
8.	Feeling afraid in open spaces.	0	1	2	3	4
9.	Thoughts of ending your life.	0	1	2	3	4
10.	Feeling that most people cannot be trusted	0	1	2	3	4
11.	Poor appetite	0	1	2	3	4
12.	Suddenly scared for no reason	0	1	2	3	4
13.	Temper outbursts that you could not control	0	1	2	3	4
14.	Feeling lonely even when you are with people	0	1	2	3	4
15.	Feeling blocked in getting things done	0	1	2	3	4
16.	Feeling lonely	0	1	2	3	4
17.	Feeling blue.	0	1	2	3	4
18.	Feeling no interest in things.	0	1	2	3	4
19.	Feeling fearful	0	1	2	3	4
20.	Your feelings being easily hurt	0	1	2	3	4
21.	Feeling that people are unfriendly or dislike you	0	1	2	3	4
22.	Feeling inferior to others	0	1	2	3	4
23.	Nausea or upset stomach	0	1	2	3	4
24.	Feeling that you are watched or talked about by others	0	1	2	3	4
25.	Trouble falling asleep	0	1	2	3	4
26.	Having to check and double check what you do	0	1	2	3	4
27.	Difficulty making decisions	0	1	2	3	4
28.	Feeling afraid to travel on buses, subways, or trains	0	1	2	3	4

HOW MUCH WERE YOU BOTHERED BY OR DID YOU EXPERIENCE:

		NA	**s**	**m**	**q**	**E**
29.	Trouble getting your breath	0	1	2	3	4
30.	Hot or cold spells	0	1	2	3	4
31.	Having to avoid certain things, places or activities because they frighten you.	0	1	2	3	4
32.	Your mind going blank	0	1	2	3	4
33.	Numbness or tingling in parts of your body	0	1	2	3	4

34.	The idea that you should be punished for your sins	0	1	2	3	4
35.	Feeling hopeless about the future	0	1	2	3	4
36.	Trouble concentrating	0	1	2	3	4
37.	Feeling weak in parts of your body	0	1	2	3	4
38.	Feeling tense or keyed up	0	1	2	3	4
39.	Thoughts of death or dying	0	1	2	3	4
40.	Having urges to beat, injure or harm someone	0	1	2	3	4
41.	Having urges to break or smash things	0	1	2	3	4
42.	Feeling very self conscious with others	0	1	2	3	4
43.	Feeling uneasy in crowds	0	1	2	3	4
44.	Never feeling close to another person	0	1	2	3	4
45.	Spells of terror or panic	0	1	2	3	4
46.	Getting into frequent arguments	0	1	2	3	4
47.	Feeling nervous when you are left alone	0	1	2	3	4
48.	Others not giving you proper credit for your achievements	0	1	2	3	4
49.	Feeling so restless you couldn't sit still	0	1	2	3	4
50.	Feeling of worthlessness	0	1	2	3	4
51.	Feeling people will take advantage of you if you let them	0	1	2	3	4
52.	Feelings of guilt	0	1	2	3	4
53.	The idea that something is wrong with your mind	0	1	2	3	4

Appendix B: Consent Form

Families and Health Research Project
Consent to Be a Research Subject

The purpose of this research study is to determine how marriage and family therapy affects general health care use. D. Russell Crane, a professor of marriage and family therapy, at Brigham Young University, is conducting this study. You were selected for participation because you indicated a willingness to be contacted about participating in research when you began receiving services at the Brigham Young University Comprehensive Clinic.

As part of your participation, you will be asked to arrive for your first appointment with this packet of information filled out. The measures and forms ask for information about marital, family and individual functioning as well as medical use. These forms require about forty minutes to complete.

Though there are minimal risks for participation in this study, there is the potential for discomfort associated with providing information of a personal and sensitive nature. While there are no known benefits to you for participating in this study, society and people in general will likely benefit from the knowledge gained regarding how marriage and family therapy can influence general medical use.

Participation in this research is voluntary. You have the right to refuse participate and the right to withdraw later without any jeopardy to the quality of health care received. Strict confidentiality will be maintained. No individual identifying information will be disclosed. Where possible, all identifying references will be removed and replaced by control numbers. All data collected in this research study will be stored in a secure area and access will be given to only personnel associated with the study.

For participating in this study you will be paid $5.00 (enclosed) for simply reviewing these materials and an additional $30 when the packet is returned. Also, you will be paid another $35.00 for completing the packet again at follow ups of six months after therapy has ended and $35.00 again one year after therapy has ended. If you choose not to participate in the study, you are free to keep the enclosed $5.00.

Regardless of compensation paid, you have the right to withdraw from the study or refuse to participate. Your decision will in no way affect the services you receive at the Comprehensive Clinic.

If you have any questions regarding this research project, you may contact D. Russell Crane by mailing questions to 274 Taylor Building, Brigham Young University, Provo, UT, or by calling (801) 422-5623. If you have questions regarding your rights as a participant in a research project, you may contact Dr. Renea Beckstrand, Chair of the Institutional Review Board, 422 SWKT, Brigham Young University, Provo, Utah 84602; phone, (801) 422-3873.

I have read, understood, and received a copy of the above consent, and desire of my own free will and volition, to participate in this study.

Research subject _____

Date _____

Table 1

Summary statistics for men and women for demographic, relational functioning, social functioning, and mental health variables and the dependant variable

Component and Variable	M or M change (SD) or % of Sample	Range
Males (n = 28)		
Demographics		
Age[b]	29.29 (7.216)	22-51
Race (% White)[b]	96.4%	N/A
Income[b]	$36,036 (27,618)	5,000-110,000
Education (% bachelor's degree)[b]	75%	N/A
Number of children living with you[b]	1.71 (1.65)	0-5
Number of therapy sessions[c]	14.39 (13.60)	3-73
Relationship functioning[a]		
Total dyadic distress[d]	-.36 (8.18)	-24 to +13
Dyadic consensus[d]	.18 (4.87)	-14 to +7
Dyadic satisfaction[d]	-.75 (2.17)	-7 to +2
Dyadic cohesion[d]	.21 (2.74)	-7 to +5
General family functioning[e]	-.009 (.418)	-0.92 to +1.0
Problem solving[e]	.137 (.267)	-0.33 to +0.67
Communication[e]	.087 (.438)	-0.67 to +0.89
Roles[e]	.055 (.337)	-0.55 to +1.09

Affective responsiveness[e]	-.012 (.437)	-0.83 to +1.0
Affective involvement[e]	-.076 (.461)	-1.14 to +1.0
Behavior control[e]	-.142 (.495)	-1.08 to +.79
Social functioning [a]		
Number of stressful events[f]	-.86 (2.34)	-6 to +5
Perceived stress[f]	-2.86 (8.14)	-25 to +21
Global stress[f]	-.11 (1.20)	-3 to +3
Total coping[f]	.18 (3.31)	-6 to +5
Total social support[f]	1.32 (5.77)	-8 to +13
Emotional support[f]	1.07 (2.65)	-3 to +6
Informational support[f]	.14 (2.42)	-5 to +5
Tangible support[f]	11.54 (3.46)	+5 to +19
Negative social exchange[f]	.29 (3.94)	-4 to +16
Total psychological distress[f]	1.43 (9.01)	-16 to 22
Depressed affect[f]	-.14 (2.01)	-6 to +2
Guilt[f]	-.18 (2.98)	-6 to +6
Motor retardation[f]	.71 (2.69)	-4 to +5
Anxious affect[f]	.25 (1.97)	-3 to +6
Somatic complaints[f]	.71 (1.54)	-2 to +4
Cognitive disturbance[f]	.07 (1.98)	-4 to +6
Life satisfaction[f]	-.32 (3.12)	-8 to +6
Perceived criticism[g]	1.14 (6.71)	-13 to +23
Emotional involvement[g]	-.75 (3.23)	-9 to +8

Mental health [a]		
Physical functioning[h]	-1.96 (13.01)	-60 to +15
Role limitations due to physical health[h]	-4.46 (36.68)	-100 to +100
Role limitations due to emotional problems[h]	1.19 (33.31)	-100 to +100
Energy/fatigue[h]	.00 (15.69)	-30 to +25
Emotional well being[h]	.571 (15.39)	-32 to +36
Social functioning[h]	-3.39 (20.16)	-65 to +32.5
Bodily pain[h]	-3.93 (19.33)	-45 to +35
General health perceptions[h]	-1.96 (15.42)	-40 to +30
Perceived change in health[h]	3.57 (24.26)	-50 to +50
Somatization[i]	.524 (.760)	-0.79 to +3.08
Obsessive-compulsive[i]	.006 (.678)	-1.50 to +1.33
Interpersonal sensitivity[i]	-.018 (.652)	-1.25 to +1.50
Depression[i]	-.042 (.681)	-1.50 to +1.83
Anxiety[i]	-.101 (.732)	-2.00 to +2.33
Hostility[i]	-.086 (.526)	-2.00 to +0.60
Phobic anxiety[i]	.007 (.437)	-1.40 to +1.40
Paranoid ideation[i]	-.093 (.506)	-1.00 to +1.20
Psychoticism[i]	-.064 (.706)	-2.00 to +1.60
Global severity index[i]	-.026 (.378)	-0.74 to +0.89
Positive symptom total[i]	-2.54 (8.85)	-19.0 to +16.0
Positive symptom distress index[i]	.002 (.616)	-2.18 to +0.94

Dependent variable [a]		
Medical use (# of visits)[j]	-.68 (2.09)	-6 to +3
Females (n = 24)		
Demographics		
Age[b]	31.50 (9.655)	20-52
Race (% White) [b]	100.0%	N/A
Income[b]	$46,022 (31,939)	6,500-110,000
Education (% bachelor's degree) [b]	54%	N/A
Number of children living with you [b]	1.96 (1.68)	0-5
Number of therapy sessions [c]	13.79 (7.88)	4-33
Relationship functioning [a]		
Total dyadic distress [d]	2.88 (7.06)	-15 to +16
Dyadic consensus [d]	1.42 (4.02)	-11 to +7
Dyadic satisfaction [d]	1.17 (2.33)	-3 to +6
Dyadic cohesion [d]	.29 (2.61)	-4 to +6
General family functioning[e]	.049 (.401)	-0.83 to +0.75
Problem solving[e]	.042 (.352)	-0.67 to +0.83
Communication[e]	-.083 (.321)	-1.00 to +0.33
Roles[e]	-.046 (.317)	-0.73 to +1.09
Affective responsiveness[e]	-.028 (.500)	-0.83 to +1.50
Affective involvement[e]	-.066 (.467)	-0.86 to +1.14
Behavior control[e]	-.510 (.400)	-1.46 to +0.13

Social functioning [a]		
Number of stressful events[f]	-.04 (2.88)	-5 to +6
Perceived stress[f]	1.25 (9.72)	-10 to +28
Global stress[f]	-.21 (1.29)	-3 to +3
Total coping[f]	.83 (3.19)	-5 to +7
Total social support[f]	.33 (7.10)	-13 to +11
Emotional support[f]	1.00 (3.07)	-6 to +7
Informational support[f]	-.13 (3.07)	-5 to +6
Tangible support[f]	10.63 (3.94)	+1 to +19
Negative social exchange[f]	-1.25 (3.35)	-8 to +5
Total psychological distress[f]	-4.63 (10.86)	-31 to +15
Depressed affect[f]	-1.50 (2.80)	-9 to +3
Guilt[f]	-.67 (3.29)	-6 to +7
Motor retardation[f]	-.17 (2.20)	-6 to +3
Anxious affect[f]	-.79 (3.35)	-7 to +6
Somatic complaints[f]	-.96 (2.56)	-6 to +4
Cognitive disturbance[f]	-.54 (2.02)	-5 to +4
Life satisfaction[f]	1.08 (3.31)	-4 to +9
Perceived criticism[g]	.00 (2.77)	-6 to +8
Emotional involvement[g]	-.04 (3.59)	-9 to +6
Mental health [a]		
Physical functioning[h]	-0.42 (8.33)	-25 to +15
Role limitations due to physical health[h]	0.00 (32.97)	-100 to +75

Role limitations due to emotional problems[h]	6.94 (41.68)	-66.7 to +100
Energy/fatigue[h]	-1.67 (19.15)	-30 to +45
Emotional well being[h]	6.83 (22.27)	-44 to +48
Social functioning[h]	1.77 (24.08)	-62.5 to +35
Bodily pain[h]	4.69 (18.38)	-35 to +32.5
General health perceptions[h]	5.00 (20.64)	-45 to +40
Perceived change in health[h]	9.38 (33.63)	-50 to +75
Somatization[i]	.950 (.638)	-.13 to +2.24
Obsessive-compulsive[i]	-.139 (.682)	-2.17 to +1.17
Interpersonal sensitivity[i]	-.219 (.693)	-1.25 to +1.50
Depression[i]	-.146 (.768)	-1.33 to +1.67
Anxiety[i]	-.278 (.646)	-1.50 to +1.00
Hostility[i]	-.333 (.609)	-1.60 to +0.80
Phobic anxiety[i]	-.050 (.430)	-1.40 to +1.20
Paranoid ideation[i]	-.025 (.796)	-2.0 to +1.40
Psychoticism[i]	-.200 (.400)	-1.20 to +0.80
Global severity index[i]	-.156 (.422)	-1.06 to +0.51
Positive symptom total[i]	-3.17 (9.62)	-23 to +14
Positive symptom distress index[i]	-.077 (.350)	-0.71 to +0.67
Dependent variable [a]		
Medical use (# of visits)[j]	.08 (3.80)	-8 to +11

a-The values shown are the means and standard deviations of the change from T1 (Time 1) to T2 (Time 2). b-Demographic Questionnaire taken from T2, c-Obtained from clients

clinic records, d- Revised Dyadic Adjustment Scale, e- Family Assessment Device, f-Multidimensional Health Profile-Psychosocial Functioning, g- Family Emotional Involvement and Criticism Scale, h-RAND-36 Health Survey, i-Brief Symptom Inventory, j-Patient Assessment Questionnaire.

Table 2

Results from the across-component multiple regression analyses for male subjects evaluating the change between Time 1 and Time 2 with the standardized coefficient and the partial correlation for each variable

Component and Variable (Males only)	Standardized coefficient	Partial *R*
Across-component analysis		
Dyadic cohesion – The healthier the response at Time 2 when compared to Time 1 the greater the reduction in health care use at Time 2.	-.508***	-.599
Total coping – The healthier the response at Time 2 when compared to Time 1 the greater the reduction in health care use at Time 2.	-.587****	-.664
Negative social exchange [a] – The healthier the response at Time 2 when compared to Time 1 the greater the increase in health care use at Time 2.	.339**	.511
Somatic complaints [a] – The healthier the response at Time 2 when compared to Time 1 the greater the increase in health care use at Time 2.	.481****	.649
General health perceptions – The healthier the response at Time 2 when compared to Time 1 the greater the reduction in health care use at Time 2.	-.367**	-.486
Obsessive-compulsive [a] – The healthier the response at Time 2 when compared to Time 1 the greater the increase in health care use at Time 2.	.844****	.729
Anxiety [a] – The healthier the response at Time 2 when compared to Time 1 the greater the reduction in health care use at Time 2.	-.741****	-.654
Phobic anxiety [a] – The healthier the response at Time 2 when compared to Time 1 the greater the increase in health care use at Time 2.	.687****	.674

a-The values shown for these variables are based on the inverse of the response for ease in understanding the results.

*p<.10, **p<.05, ***p<.01, ****p<.001

Table 3

Results from the across-component multiple regression analyses for female subjects evaluating the change between Time 1 and Time 2 with the standardized coefficient and the partial correlation for each variable

Component and Variable (Females only)	Standardized coefficient	Partial *R*
Across-component analysis		
Global stress [a] – The healthier the response at Time 2 when compared to Time 1 the greater the increase in health care use at Time 2.	.227**	.517
Negative social exchange [a] – The healthier the response at Time 2 when compared to Time 1 the greater the increase in health care use at Time 2.	.184*	.431
Perceived criticism [a] – The healthier the response at Time 2 when compared to Time 1 the greater the reduction in health care use at Time 2.	-.421***	-.704
Emotional involvement [a] – The healthier the response at Time 2 when compared to Time 1 the greater the reduction in health care use at Time 2.	-.299***	-.616
Emotional well being [a] – The healthier the response at Time 2 when compared to Time 1 the greater the increase in health care use at Time 2.	.414****	.730
Perceived change in health [a] – The healthier the response at Time 2 when compared to Time 1 the greater the reduction in health care use at Time 2.	-.334***	-.702
Paranoid ideation [a] – The healthier the response at Time 2 when compared to Time 1 the greater the increase in health care use at Time 2.	.591***	.615
Global severity index [a] – The healthier the response at Time 2 when compared to Time 1 the greater the reduction in health care use at Time 2.	-.680***	-.656

a-The values shown for these variables are based on the inverse of the response for ease in understanding the results.

*p<.10, **p<.05, ***p<.01, ****p<.001