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MARITAL SATISFACTION IN COUPLES WITH CHRONIC
ILLNESS IN LATER ADULTHOOD,
THE CASE OF DIABETES

A Thesis
Presented to the
Faculty of
California State University,
San Bernardino

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts
in
Psychology: Life-Span Developmental

by
Lara Lynn Campbell

June 1998

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ILLNESS IN LATER ADULthood,
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June 1998

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ABSTRACT

Studies on marital satisfaction in couples with chronic illness are discussed. Marital satisfaction in older aged men and women where one partner has Diabetes was compared to a control group of married couples without chronic illness. Participants were: 17 Diabetics, 9 spouses of Diabetics, and 7 controls. Scores for participants were then analyzed in groups by gender and illness status. Hypotheses are: 1) Couples with a Diabetic would be lower in marital satisfaction than control group couples, 2) Diabetics were expected to be higher in marital satisfaction than their healthy spouses, 3) Diabetics with lower scores on a Diabetes knowledge test would be lower in marital satisfaction than Diabetics with higher knowledge scores, and 4) Diabetics with higher scores on a Diabetes quality of life scale would be higher in marital satisfaction than Diabetics with lower scores. All participants were given questionnaires on marital satisfaction. Diabetics only were given additional questionnaires assessing Diabetes knowledge and quality of life. Various t-tests were conducted to compare marital satisfaction between couples and by gender and illness status. Regression was performed on Diabetes

knowledge scores and marital satisfaction scores and again for Diabetes quality of life scores and marital satisfaction. Results were nonsignificant except for a finding that men with Diabetes were more satisfied in marriage than a control group of men. Findings are discussed and future studies are recommended.

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INTRODUCTION

Chronic illness impacts the daily lives of many individuals. Chronic illnesses vary in pain intensity, threat to life, and treatment regimens. For chronically ill patients who are married, there are special worries. Research indicates that the healthy spouse is affected in many ways: high stress; lifestyle changes; role changes; increased care giving, and even giving medical treatment to the ill spouse (Baider, Perez, & De-Nour, 1989; Hafstrom & Schram, 1984; Rolland, 1994; Sexton & Munro, 1985). These research studies illustrate the strain experienced by chronically ill patients and their spouses and indicate that marital satisfaction (adjustment) is often lower for the ill and their partners than for healthy couples.

Marital adjustment is defined as the amount of accommodation that husbands and wives make for each other at a given time (Locke & Wallace, 1959). Gilford (1984) defines marital satisfaction as the amount of positive interaction and negative sentiment within a marriage. Of the research examining the relationship between marital satisfaction and chronic illness, a majority of the studies have not been conducted on one age group at a time. Separate age groups should be studied in order to determine if there is an age difference in marital satisfaction. It also would seem necessary to assess the effects of a particular illness on

the marital satisfaction of patients and their spouses. Because chronic illnesses vary in severity, different illnesses may impact marital satisfaction differently. It also seems logical that both genders should be studied so that husbands who are ill can be compared to husbands who are not ill, and wives who are ill can be compared to wives who are not ill, and ill husbands can be compared with ill wives, and non-ill husbands can be compared with non-ill wives in terms of their marital satisfaction. When researchers group together all couples with chronic illness regardless of age, they then cannot assess age differences in marital satisfaction when chronic illness is present because they may not have enough volunteers in each age group to properly analyze the age differences. Another problem in many of the previous studies is that many do not use control groups. The lack of a control group means that the researchers cannot assess if the level of marital satisfaction in couples where one spouse has a chronic illness is similar or not to the level of marital satisfaction in couples without chronic illness.

Age and Marital Satisfaction

Marital satisfaction differs in couples of different age groups (Pineo, 1961). Pineo states that marital satisfaction declines after the newly married stage and either continues to decrease or levels off in the later

stages. However, in another study (Rollins & Cannon, 1974), it is suggested that there is a slightly curvilinear association between marital satisfaction and age, where satisfaction declines in the early years and increases in the later years. Still others, Spanier, Lewis, and Cole (1975) indicate that the evidence is not sufficient because it is possible that the high scores on the marital adjustment scale in older age are due to further age delineation, social desirability, and cohort effects more than actual changes in the relationship. They indicate that all we know about marital satisfaction over the lifespan is that there is no linear decline due to age, length of marriage, or stage of the life cycle. The findings of a curvilinear relationship also are criticized by Lee (1978) because the studies are cross-sectional and may be confounded with cohort effects; he contends that the studies are also greatly affected by the problem of divorce because unsatisfied couples will most likely get divorced rather than stay unhappily married. This assertion by Lee is supported by Heaton and Albrecht (1991). Heaton and Albrecht conducted a study on unhappy but stable marriages and found that only seven percent of their sample of marriages reported being "unhappily married". This is probably a reflection of the belief that marriages should be happy; but also may indicate a possible confound of social desirability

where even if couples are unhappy they will answer questions to pretend they are happy.

Although there are not many studies of marital satisfaction for different age groups, particularly middle- and older-aged adults, there are a few investigations. Levensen, Carstensen, and Gottman (1993) conducted a study on marital satisfaction in middle- and older-aged couples who are in long-term marriages. The middle-aged couples had to be married for at least 15 years and the older couples had been married for at least 35 years. Couples were tested in laboratory sessions where they had conversations about (1) events of the day, (2) a problem area of disagreement in their marriage, and (3) a pleasant topic. Levensen et al. (1993) found that middle- and older-aged couples did not differ in marital satisfaction. But it should be noted that all of the couples were married for at least 15 years, and one might expect similarities between the two age groups in marital satisfaction. Another interesting finding was that wives reported more dissatisfaction with the marriage when they were ill. There was no explanation offered for this phenomenon although it could be due to the lack of husbands' ability to support the wives emotionally. These findings should apply to chronic illness in the same way: wives who are chronically ill may report less satisfaction with the marriage than healthy wives.

Another study on older couples' marital satisfaction was conducted by Gilford (1984). The participants were ages 55 to 90 and were divided into three age groups for assessment. Gilford found that of the three age groups, the second group (63 to 69 years of age) scored highest on marital satisfaction which indicated that they have high amounts of positive interaction and low amounts of negative sentiment. The youngest and oldest groups were both lower in number of positive interactions and higher in negative sentiment than the 63-69 group. It seems that around retirement age marital satisfaction is highest but gradually declines in the later years. Gilford believes the decline in satisfaction is due to increasing health problems. She also suggests that as future generations reach old age, they are expected to be healthier and wealthier than the current sample which may impact the future generations' marital satisfaction in a more positive way. Gilford's findings suggest that as health declines, so does marital satisfaction, but in the retirement years marital satisfaction is surprisingly high (possibly due to the advances in health care in the last ten to fifteen years).

In another study on marital satisfaction in long-term marriages, the participants were followed-up from the Division of Family Study from 1957 and 1960 (Mudd & Taubin, 1982). The couples were married for an average of 37 years.

The findings of this study indicated that the couples were happy and optimistic about future happiness in the marriage even though some of the participants had illnesses and/or surgeries. But these illnesses and surgeries were sporadic and unexpected (they occurred after the first assessment and were not originally part of the study).

In summary, it appears that most older, married couples are content to be married and satisfied with their partners. Even though many researchers acknowledged the possible confounds in the study of marital satisfaction of older couples, some of those possible confounds apply to younger married couples as well, such as social desirability and even self-selection due to divorce rate. The younger cohorts may be more accepting of divorce than older couples. As stated earlier, studies seem to have ignored the older married couples who have not been married long-term and have excluded them from their marital satisfaction studies (Gilford, 1984). This information would be valuable as it seems that many older people are remarrying after divorce and widowhood.

A couple of the previously reviewed studies found a relationship between illness and marital satisfaction where couples with an ill spouse had lower marital satisfaction than healthy couples (Gilford, 1984; & Levensen et al., 1993). However, one study found that some older couples with

illnesses and hospitalizations had high marital satisfaction (Mudd & Taubin, 1982). This evidence can be easily explained by individual differences because the type of chronic illness in this study was not controlled for; the onset of illnesses occurred after the study began; and the illnesses appeared in only a small percentage of the sample.

The Impact of Chronic Illness on Marriage

Young adults with chronic illness were studied by Gortmaker et al., (1993) to see if presence of a chronic illness seems to deter patients from getting married. According to Gortmaker, young people with chronic illness (both males and females) were married at a similar rate to those without a chronic illness. The males also were found to graduate from high school more often than males without illness. The authors were surprised to find that this population of young people were average for their age group in self-esteem, level of education, income, and marriage rate. The authors explain that most of their participants' illnesses were not severe (Arthritis, Diabetes, Asthma, Epilepsy, Cerebral Palsy, and others), but within each of these diagnoses there are varying levels of severity. The results of this study suggest that most chronically ill young people are marrying at an average rate for their age group; therefore, it can be inferred that studies on chronic illness and marital satisfaction are probably not suffering

from self-selection problems due to low marriage rates in this population.

According to Rolland (1994), couples dealing with chronic illness may require counseling to get through some of the emotional and power issues that come up. Rolland believes that men are torn between feeling inadequate as family providers and realizing that it is acceptable to be nurtured when they are ill. When women are ill, the men are often inexperienced and anxious about taking care of their partner and themselves emotionally (Rolland, 1994). It also is stated that men are likely to hire a housekeeper instead of taking on the role themselves, while healthy wives of ill partners usually attempt to add the roles that the husband used to handle. These lifestyle changes can lead to burnout, feelings of guilt, and resentment in the wives (Rolland, 1994). The genders do appear to react differently to illness in themselves and their spouses, which may help explain why some couples in these situations may need counseling.

In addition to emotional upheaval, many ill partners can no longer function sexually. As a result, some healthy partners start affairs (Rolland, 1994). Rolland indicates that in middle and older adults, especially men, more healthy partners either leave the marriage or start affairs because they have already withstood long-term relationship problems and cannot go through the illness as well. They

reevaluate personal and relationship goals. This seems to indicate that marital satisfaction after the illness is affected by the pre-illness relationship.

Stress also was found to increase in couples with chronic illness (Sexton & Munro, 1985). In Sexton and Munro's study, husbands with chronic obstructive pulmonary disease and their wives were assessed on levels of stress and life satisfaction. It was found that wives with ill husbands had higher stress and lower life satisfaction than a control group. The life satisfaction measure included assessments of age, financial status, employment, health status, sleep quality, frequency of sexual relations, and severity of stress. The wives of the patients in the study also reported more of their own health problems than did wives in the control group.

Another negative effect on spouses of ill husbands and wives was found in a study by Baider, Perez, and De-Nour (1989). The participants in this study were older couples: mean age for men was 68 years and women were an average of 63 years old. The authors used colon cancer as a chronic illness in this study. Baider et al. found that in couples where the husband was ill, both spouses reported similar, minimal amounts of psychological distress. However, in couples where the wives had cancer, it was found that both the husbands and the wives reported higher amounts of

psychological distress and more problems (in work, social, sexual, and domestic domains). In fact, the healthy husbands of ill wives reported even more problems than the husbands with cancer. Baider et al. attempted to explain this finding by indicating that there is the possibility that the wives' attitudes are contagious; when she worries, so does the husband. However, the explanation given by Rolland (1994) seems more plausible: husbands have an expectation that they will get ill and pass away before their wives. They are also inexperienced as caregivers and emotional supporters, and resent being put in the position of caregiver. This resentment may cause them to perceive more problems associated with the wives' illnesses.

A problem with the Baider et al. (1989) study is that colon cancer may not be considered a chronic illness by many people. Cancer has the ability to go into remission and be practically nonexistent at times. If cancer is removed and no longer detected, the patient may not need medication anymore so many people would not call them ill. Cancer also can be more serious than many other chronic illnesses. Differences in marital satisfaction may be found if a different illness like diabetes is assessed instead of cancer.

It appears that people with chronic illnesses are getting married at the same rate as healthy people. The

couples with illness do have additional adjustments to make; such as dealing with emotionally charged issues of sexual relations, care giving and receiving, role variations, marriage dissolution or unhappiness, and work and personal sacrifices. The Rolland study seems to find that marital satisfaction after the illness is partially related to satisfaction before the illness and plans for the future (Rolland, 1994). For couples who meet after the illness is diagnosed, the healthy partner would need to adjust to the illness, but the relationship would not have to change, because there was no relationship prior to the illness.

Marital Satisfaction in Couples With Chronic Illness

Various studies have assessed marital satisfaction (happiness in the marriage) in couples living with chronic illness (Baider et al., 1989; Carter & Carter, 1994; Gilden, Hendryx, Casia, & Singh, 1989; Hafstrom & Schram, 1984; Jensen, 1985; Jensen, 1986; Lewis et al., 1989; Sexton & Munro, 1985; White, Richter, & Fry, 1992; & Woods, Haberman, & Packard, 1993). But, it should be noted that some methodological problems appear to be present in many of these studies. For example, many studies did not compare their samples with control groups (see, for example, Lewis et al., 1989; Carter and Carter, 1994; Jensen, 1985; Jensen, 1986; White et al., 1992; and Woods et al., 1993). Without control groups, it cannot be known if the marital

satisfaction in the sample couples is normal or not for their age and gender when chronic illness is present. Other studies assess marital satisfaction for only wives or husbands, but not both genders (Hafstrom & Schram, 1984; Lewis et al., 1989; Sexton & Munro, 1985; White et al., 1992; and Woods et al., 1993). By eliminating one gender from the study, they are in effect, missing one-half of the marriage. Also, many of the studies are assessing marital satisfaction in couples who have varied illnesses (Woods, Haberman, & Packard, 1993; Lewis, Woods, Hough, & Bensley, 1989; Hafstrom & Schram, 1984; and Carter & Carter, 1994). This procedure is open to a possible confound because varied illnesses may affect couples in different ways.

One study assessed marital satisfaction and adaptation to illness in women with various illnesses (Woods, Haberman, & Packard, 1993). The illnesses included Diabetes, Nonmetastatic Breast Disease, Breast Cancer, or Fibrocystic Breast Changes (Woods, Haberman, & Packard, 1993). The women ranged in age from 28 to 62 years with a mean of 41. Results indicated that all of the women had some depressed mood, but good overall family functioning. But, when illness demands were assessed: disease effects (such as nausea), personal disruption (symptom monitoring and others), and environmental transactions (family functions, etc.), they found more interesting results. Women who reported having

more illness demands had higher amounts of depression and lower marital satisfaction than those reporting fewer demands. The authors suggest this finding indicates that women who have long-term symptoms may be at greater risk for lower quality of family life. Since most chronic illnesses carry with them the burden of long-term symptoms, it would seem that almost all chronically ill women would be at risk for low marital satisfaction and depression. The problem with this study is that the illnesses assessed vary in severity and long-term treatment which may be a confound. The participants were all female as well, so the finding may not be true for males.

In another study sampling those with varied illnesses, husbands' marital satisfaction was assessed. Their wives had either Breast Cancer, Fibrocystic Breast Disease, or Diabetes (Lewis, Woods, Hough, & Bensley 1989). The men whose wives had Breast Cancer were found to be higher in adjustment than those whose wives had Diabetes or Fibrocystic Breast Disease. Upon further study it was found that the husbands of wives with Breast Cancer explained much of the wives' disagreeable behavior by attributing it to the illness. The authors believed this difference was due to the stability of the illnesses. Diabetes and Fibrocystic Breast Disease are stable, so after a period of adjustment it does not matter how long the patients have lived with the

disease, nothing seems to change so husbands do not make attributions to the disease. But Breast Cancer is unstable in that it could get worse very quickly or be removed quickly. Since no control group was used, the study did not indicate if marital satisfaction in the husbands of Breast Cancer patients was comparable to marital satisfaction in husbands of healthy wives.

In a study assessing marital satisfaction of both husbands and wives, the husbands were on home hemodialysis (Brackney, 1979). The men had a mean age of 50 years. It was found that the husbands had high marital satisfaction if the wife was psychologically strong and there was little conflict in the marriage. Wives' satisfaction was related to the health of their husbands and the amount of conflict in the marriage. A major problem in the Brackney study is that data were analyzed to determine the relationship between marital satisfaction, health, treatment of illness, and conflict in the marriage; however, they did not report the means for marital satisfaction in husbands vs. wives or healthy vs. ill partners.

Palmer, Canzon, and Wai (1982) also studied home dialysis patients and their spouses. Sixty-six percent of the patients were male. The mean age of the patients was 48 (range 21-74). Palmer et al. found that spouses felt closer to each other as a result of home dialysis and that patients

were more satisfied with the marriage than their healthy spouses. The opposite effect was found for sexual satisfaction; patients were less satisfied than their spouses. Again, it is not clear if the patient's marital satisfaction is comparable to satisfaction in healthy couples.

A study by Hafstrom and Schram (1984) looked at marital satisfaction of wives in couples with an ill husband who was employed. The illnesses varied and included such problems as allergies, Cancer, and others. Hafstrom and Schram found that wives of ill husbands reported less marital satisfaction than did wives with healthy husbands. When the wives were ill, their marital satisfaction did not differ significantly from healthy wives. These results are surprising because the illnesses vary greatly in severity and also may greatly affect marital satisfaction. Also, the husbands were all working at the time, so the illnesses were probably not physically disabling, yet there was a statistically significant difference in marital satisfaction for the wives. This may be evidence that the illnesses are psychologically traumatic or emotionally disabling.

Another study looked at marital satisfaction in older couples with Parkinson's Disease (Carter & Carter, 1994). There were both male and female Parkinson's patients who were married to healthy as well as chronically ill partners.

Results indicated that marital satisfaction was about equal for both patients and spouses regardless of the non-Parkinson's spouses health. They also found that both of the spouse pairs were low in cohesion and consensus (subscales of marital satisfaction). Another interesting finding was that the patient-well spouse pairs were more negative about the course of the illness than the patient-ill spouse pairs. This may be due to the prior experience of dealing successfully with illness. It seems that marital satisfaction is low for both pairs of spouses but may actually be worse in the patient-well spouse pairs because they are more negative than the other pairs.

Overall, these studies found a relationship between illness and marital satisfaction. In some cases, the ill person is more satisfied with the marriage than the well spouse (Brackney, 1979; Hafstrom & Schram, 1984; and Palmer et al., 1982). In most studies the well spouse had low marital satisfaction, but it depended on the illness (Lewis et al., 1989; Hafstrom & Schram, 1984; Carter & Carter, 1994; and Palmer et al., 1982). In studies where high marital satisfaction was found, it was not clear if satisfaction was comparable to that of healthy couples (Lewis et al., 1989; and Palmer et al., 1982).

Most of the previous studies did not focus on one age group at a time. Research presented earlier on age and

marital satisfaction indicates that many older adults tend to score higher on marital satisfaction than younger adults. Studies assessing marital satisfaction in couples with various illnesses may have confounds due to the severity of each illness. Research needs to focus on one illness at a time in attempt to assess differences in marital satisfaction due to separate illnesses even though each illness effects people differently. The illness assessed in the current study is Diabetes.

Adjustment to Diabetes

According to the American Diabetes Association (ADA) there are two main types of Diabetes: insulin-dependent, also known as type I, and non-insulin-dependent, also known as type II (ADA, 1984). Type I Diabetes occurs when the pancreas doesn't make enough insulin. People with type I Diabetes must inject insulin daily. Those with type II Diabetes are not able to use insulin effectively. Type II Diabetes can be controlled with diet and exercise but some people may need oral medication or insulin as well. People with either type of Diabetes need to monitor their blood sugar levels, and both types of Diabetes can lead to blindness, kidney disease, amputations, heart disease, strokes, impotence in men, and birth defects (ADA, 1984). Diabetes can onset in anyone at any age.

In addition to the problems listed above, Hamburg and

Inoff (1983) indicate that there are many crises that people with Diabetes must overcome. These include distressing medical symptoms, hospitalizations, failure to respond to some therapies, possible amputations, and threat of death. These problems also may threaten close relationships because of their severity. Hamburg and Inoff also found that communication often breaks down between marital partners when one of the spouses has Diabetes. Hamburg and Inoff believe that many families may need professional assistance in dealing with problems associated with Diabetes.

White, Richter, and Fry (1992) studied adaptation to Diabetes in women. They found that women did not differ in health outcomes or psychosocial adjustment due to the length of time living with the illness. The researchers also found that communication and interactions with the family were only slightly affected by the illness. Social roles were seemingly unaffected. There were small amounts of psychological distress found in the patients (depression, low self-esteem, hostility, etc.) but it did not appear to interfere with family and social relations. The findings on self-esteem seem to contradict those found in Gortmaker et al. (1993), who found self-esteem in patients to be comparable to healthy people the same age, while the White et al. (1992) study found self-esteem to be lower than expected. There may be an age difference in self-esteem

because the White et al. study surveyed all ages of adults while Gortmaker et al. assessed effects in young adults only.

Another researcher assessed emotional aspects in Diabetes at two different times; the first study surveyed patients and their spouses and the second study questioned only the patients (Jensen, 1985, and Jensen, 1986). In the 1985 study, Jensen found that patients feared that their spouses would leave them more often than healthy spouses believed the Diabetics would leave. Jensen (1985) also found that the Diabetic husbands believed that their wives wanted more information on the influence of the disease on marriage, but this belief was disconfirmed by a poll of the wives. This finding may be an indication of a slight communication problem between the husbands and wives. In the 1986 Jensen study, Diabetics were assessed on their feelings about themselves and what they thought their spouses felt. Jensen (1986) found that the Diabetics perceived themselves as having more emotional problems than their spouses regardless of gender. In addition to gender, studies have assessed the effects that age may have on marital satisfaction where Diabetes is present.

Jenny (1984) clearly found an effect of age in adaptation to the continuing treatment and effects of Diabetes. This study surveyed four age groups: 1) the young

group ranged in age from 16-24; 2) mid-adults were 25-45; 3) older adults were 46-65; and 4) the aged, 66 and older. The aged had the least amount of social support. In fact, most of the women indicated that even though they were married, their husbands were not supportive. The older and aged groups were more concerned about the seriousness of the illness than the younger groups. It also was found that the middle-aged and older adults were most concerned about future health problems while the aged were least concerned. The older groups were found to be the least informed about treatment and control except in the areas of foot care and diet. Doctors seem to be giving Diabetes information to patients differently based in part on age. This lack of information may help explain why the older age groups are more concerned about future health problems.

One study found that Diabetes education could increase quality of life and reduce stress in older Diabetes patients and their spouses (Gilden, Hendryx, Casia, & Singh, 1989). The participants were put in a six week Diabetes education program after pretests on quality of life and stress. The researchers found that after the program the older participants scored as well as a group of younger patients. The older patients reported improvements in quality of life after the program; and no difference in stress immediately after the program, but reported reduced stress six months

after the program ended. It also was found that the older patients with participating spouses improved more than those without participating spouses which may indicate higher spousal support in the first group. Information on Diabetes seems to be an important factor in adjustment to Diabetes.

In summary, chronic illness has been found to affect marital satisfaction in many of the studies reviewed. Most studies found that couples with chronic illness had at least one partner who was not as satisfied in the marriage as would be expected in couples without the presence of chronic illness (Woods et al., 1993; Hafstrom & Schram, 1984; and Carter & Carter, 1994). A few studies did not find a difference in marital satisfaction for couples with a chronic illness present, but it should be reiterated that many methodological problems appeared to be present in most of the studies reviewed. For example: lack of control groups, omission of one gender of spouses, use of various illnesses in a single study, and assessment of all ages of couples at once. These problems leave many unanswered questions: Is the ill partner or healthy partner more satisfied with the marriage? Is the husband or the wife more satisfied with the marriage? Which illnesses are associated with the most satisfied or least satisfied couples? Are the couples in which a chronic illness is present more or less satisfied in marriage than a control group of married

couples? Is there an age difference in marital satisfaction when chronic illness is present? These questions are important to answer, but they cannot all be answered in a single study.

The purpose of this study is to explore the relationship between Diabetes and marital satisfaction in older adult couples. Diabetes was chosen because it is a serious illness that affects all ages and both genders of people equally. Both genders of patients and spouses will be assessed, and the sample will be compared to a control group.

Hypotheses

1) It is predicted that older couples in which at least one spouse has Diabetes will be lower in marital satisfaction than couples without chronic illness.

2) Diabetes patients are also expected to be higher in marital satisfaction than their healthy (non-Diabetic) spouses.

3) There is also an expectation that Diabetes patients with lower scores on the Diabetes Related Knowledge subscale of the Diabetes Related Knowledge and Psychosocial Function Questionnaire (DKPFQ) will be lower in marital satisfaction than Diabetes patients with higher scores on the Diabetes Related Knowledge subscale.

4) It is also expected that scores on the Psychosocial

Function subscale of the DKPFQ will be positively correlated with scores on the Marital Adjustment Test.

METHOD

Participants

There were 17 Diabetic participants (13 males and 4 females), 9 spouses of Diabetics (4 males and 5 females), and 7 control participants; people without chronic illness who were married to people without chronic illness (4 males and 3 females). To participate in the study, at least one spouse in each marriage had to be at least 55 years old. Age ranged from 38 to 83 years ($M = 63$) with 6 participants under the age of 55. All participants were married at the time of study. No one was excluded from the study based on ethnicity (58% White, 13% Asian American, 6% Hispanic, 13% Other, and 13% declined to state).

Diabetic participants and their spouses were recruited through area hospitals, Diabetes treatment centers, Diabetes education groups, support groups, senior centers and local Lion's Club functions. Control group participants were found at senior centers and Lion's Club functions.

All participants were treated in accordance with the American Psychological Association (APA) guidelines (APA, 1992).

Materials

Informed consent forms (see Appendix A) indicated the nature of the study, informed the participants of their right to anonymity, and their right to withdraw from the

study for any reason. A debriefing statement accompanied the questionnaires given to all participants describing the general purpose of the study and who to contact for information on results or marital counseling (see Appendix B).

Demographic variables for the chronic illness group assessed age, sex, number of years married, length of time living with Diabetes, type of Diabetes, any health complications due to Diabetes, presence or absence of Diabetes in the spouse, socio-economic status, and ethnicity (see Appendix C). Age of onset of Diabetes and whether the onset of Diabetes was before or after marriage was calculated using this information.

Demographics for the control group are included: age, sex, length of marriage, presence of chronic illness in self or spouse, type of illness if any, socio-economic status, and ethnicity (see Appendix D). If a control group participant has a chronic illness, he/she and his/her spouse were excluded from the analysis.

There were four questionnaires used: The Diabetes-Related Knowledge and Psychosocial Function Questionnaire (Appendix E) developed by Gilden et al., 1989; the Locke-Wallace (1959) Marital Adjustment Test (see Appendix F) created by Locke & Wallace in 1959; the Strength of Religious Beliefs scale (see Appendix G) developed by

Greeley, 1963; and the Effect of Diabetes scale (see Appendix H) designed by the author and advisors.

Diabetes Knowledge and Psychosocial Function Measures

The Diabetes questionnaire has 67 items and is split into two main parts; the first tests knowledge about diabetes with subscales for general knowledge, nutrition, and pharmacy; and the second part assesses psychosocial adjustment with subscales for quality of life, stress, family involvement, and social activity (see Appendix E for entire scale).

The Diabetes knowledge portion of the questionnaire has internal consistency measured by Cronbach's alpha of .69. Face validity was tested by the opinion of doctors who specialize in treatment of Diabetes and other professionals (Gilden et al., 1989). The quality of life subscale of the questionnaire has a Cronbach's alpha measure of .91; the Diabetes-associated stress subscale reliability (Cronbach's alpha) was .94; the family involvement subscale had internal consistency of .96 (Cronbach's alpha); and the social involvement subscale had a reliability of .91 (Cronbach's alpha).

Marital Adjustment

The Locke-Wallace Marital Adjustment Test is a widely used measure for marital satisfaction. It was called an "Adjustment" test because it was developed mainly for

newlywed couples who had to adjust to being married. It contains 15 items. The test has a split-half Spearman-Brown reliability coefficient of .90 (see Appendix F). The Locke-Wallace test was designed for use primarily with young couples, but many studies with older samples have used the test (Brackney, 1979; Levensen et al., 1993; and Rollins & Cannon, 1974).

Strength of Religious Beliefs

The Strength of Religious Beliefs scale was also used (Greeley, 1963). It consists of four items measuring: frequency of attendance at religious services, strength of religious affiliation, belief in life after death, and membership in a religious organization (see Appendix G). Data is not available on validity or reliability, but it appears to have face validity.

Diabetes Effect Scale

Two more questions will be included which assess the positive or negative effect of Diabetes on marriage. The questionnaire is called the Diabetes Effect Scale (see Appendix H). These questions were developed by the author and thesis advisors. There are two forms of each question and they are designed specifically for the healthy spouses of Diabetics as well as the Diabetics, themselves. Data is not available for reliability or validity of this scale.

Design and Procedure

Participants with Diabetes were given the informed consent form, the appropriate demographic form, the Diabetes-Related Knowledge and Psychosocial Function Questionnaire, the Locke-Wallace Marital Adjustment Test, the Strength of Religious Beliefs scale, and the Effect of Diabetes scale. The scales and questionnaires were counterbalanced and randomized in attempt to control for order effects.

Spouses of Diabetes participants and the control group participants were given the informed consent form, the demographic sheet for the control group, the Marital Adjustment Test, the Strength of Religious Beliefs scale, and the Effect of Diabetes questions. The control group participants were instructed to ignore the Effect of Diabetes scale. As in the Diabetes group, the scales were arranged in counterbalanced order and randomized.

Scoring and Analysis

For the Diabetes questionnaire, the questions on the subscales for general knowledge, nutrition, and pharmacy are scored two points for each correct answer. A high score indicates more Diabetes knowledge. For psychosocial adjustment subscale concerning quality of life, scores were based on a five-point scale from "strongly agree" to "strongly disagree." A high score indicates less

interference of Diabetes with quality of life. The stress subscale is scored on a three point scale from "agree," "don't know," to "disagree." A higher score indicates fewer stress-related problems. The family involvement subscale is scored on a five-point scale from "never" to "at least once a day." The higher scores mean there is more family involvement. The social involvement subscale is based on a five-point scale from "very frequently" to "very rarely." A higher score indicates more social involvement.

The Marital Adjustment Test is scored using a pre-determined weighted scale for each question. The higher scores indicate higher satisfaction.

The Strength of Religious Beliefs scale is scored by adding the scores for each question. The first question is an eight-point scale for frequency of attendance at religious services (scores from 0-8). The remaining three questions are dichotomous, each worth zero or one point. A higher score indicates stronger religious beliefs.

The Effect of Diabetes scale has three choices based on change if onset was after marriage, or the effect of Diabetes if the onset occurred before the marriage: a positive way, no way at all, or a negative way. There is no score. The results are recorded in frequencies.

To test the first hypothesis that older couples with Diabetes will be lower in marital satisfaction than couples

with no chronic illness present, a t-test will be conducted.

For the prediction that the Diabetic spouses would be more satisfied in marriage than their healthy spouses, a t-test was employed.

To assess whether Diabetics with more knowledge of Diabetes are more satisfied in marriage than Diabetics with less knowledge, a regression was performed with knowledge regressed on marital satisfaction.

For the final prediction, Diabetes quality of life will be regressed on marital satisfaction to determine if higher quality of life predicts higher marital satisfaction among Diabetics.

RESULTS

To ensure similarity in age, income, number of years married, and religion scores between couples with Diabetes and couples without chronic illness; t -tests were performed on the couples in each illness category with alpha set at .05. The means and standard deviations for couples with Diabetes present were: age ($M = 63.7$, $SD = 11.4$), income category ($M = 3.3$, $SD = .77$), number of years married ($M = 38.1$, $SD = 15.9$), and religion ($M = 5.84$, $SD = 3.6$). For control group couples, means and standard deviations were: age ($M = 58.1$, $SD = 5.5$), income ($M = 3.25$, $SD = .4$), years married ($M = 34.8$, $SD = 6.8$), and religion ($M = 1.3$, $SD = 1.5$). The t -tests indicated no significant differences between the groups in age, income, or number of years married ($p > .05$). But, there was a significant difference in religion with Diabetic couples higher than control group couples: $t(32) = 3.5$, $p < .05$. After placing individuals in groups by gender and illness category, and testing similarity of groups, there was a significant difference in religion between Control group men ($M = 1.2$, $SD = 1.1$) and Diabetic men ($M = 4.7$, $SD = 3.9$) where the Diabetic men were more religious than the control group men: $t(16) = 2.0$, $p < .05$.

To test marital satisfaction among couples with Diabetes and couples without illness; scores from the Locke-

Wallace Marital Adjustment Test were compared. Couples with Diabetes (\underline{M} = 116.19, \underline{SD} = 25.26) tended to be higher in marital satisfaction than the control group couples (\underline{M} = 101.25, \underline{SD} = 25.18), $\underline{t}(32) = 1.45$, but the result was not significant. Comparisons also were made between Diabetics and their spouses on marital satisfaction. Diabetics (\underline{M} = 121.70, \underline{SD} = 23.99) were not significantly different from their spouses (\underline{M} = 105.77, \underline{SD} = 26.52), $\underline{t}(24) = -1.55$, in Marital Satisfaction.

Previous studies found differences in marital satisfaction by gender and illness status so \underline{t} -tests were performed for the gender and illness categories. Table 1 lists the means and standard deviations for marital satisfaction of men and women in each illness category.

Table 1
Means of Marital Satisfaction Scores
in Gender and Illness Categories

<u>Females</u>		
Women with Diabetes	\underline{M} = 126.5	\underline{SD} = 26.90
Wives of Diabetics	\underline{M} = 93	\underline{SD} = 29.99
Control group women	\underline{M} = 101	\underline{SD} = 52.33
<u>Males</u>		
Men with Diabetes	\underline{M} = 120.2	\underline{SD} = 24.01
Husbands of Diabetics	\underline{M} = 121.75	\underline{SD} = 8.02
Control group men	\underline{M} = 104.4	\underline{SD} = 18.84

At face value, the means above appear to show that Diabetic women are the most satisfied with their marriages, followed by their husbands, then Diabetic men (following closely behind). However, only one comparison was significant as indicated by t -test results which can be seen in Table 2. As seen in Table 2, the only significant difference in marital satisfaction due to gender or illness category occurred between Diabetic men and control group men where the Diabetic men were more satisfied in their marriages than the men in the control group.

Table 2
Results of t-tests for Gender and Illness
Groups on Marital Satisfaction

Control males vs. Control females	$t(5) = -.140$
Male spouses of Diabetics vs. Female spouses of Diabetics	$t(7) = -1.84$
Diabetic males vs. Diabetic females	$t(15) = .44$
Diabetic females vs. Control females	$t(4) = .84$
Diabetic males vs. Control males	$t(17) = 2.10^*$
Female spouses of Diabetics vs. Control females	$t(5) = -.26$
Control males vs. male spouses of Diabetics	$t(7) = 1.70$

* = $p < .05$

Frequencies were taken on the number of participants who feel that the presence of Diabetes had a positive, negative, or no effect on their marriage. Results of frequencies are listed in Table 3.

Table 3

Frequencies for Effect of Diabetes on Marriage

	Diabetics	Spouses
Positive	3	1
Negative	2	3
No Effect	10	5

It appears that in both groups (Diabetics and their spouses), more people felt that the presence of Diabetes had no effect at all on their marriages.

A regression was performed on the data to determine if more knowledge of Diabetes (determined by scores from the Diabetes Knowledge subscale of the DKPFQ) predicted higher marital satisfaction among Diabetics. The regression was not significant; knowledge does not predict marital satisfaction.

Another regression was conducted to determine whether high scores on Diabetes quality of life (based on the scores from the Quality of Life subscale from the DKPFQ) predicted higher marital satisfaction among Diabetes patients. The regression was not significant; quality of life scores do not predict marital satisfaction.

DISCUSSION

The hypotheses were not supported. Couples in which one partner had Diabetes were expected to have lower marital satisfaction than couples with no illness present. However, in the current study couples with Diabetes present tended to be happier in marriage than the control group. For the comparison between Diabetics and their (non-Diabetic) spouses, Diabetics were expected to be higher in marital satisfaction than their spouses. The results were not significant, meaning there was no difference in satisfaction for the groups.

The results of the regressions performed indicate that there is no effect of high scores on the Diabetes Knowledge subscale and marital satisfaction. The same was true of the Diabetes Quality of Life subscale and marital satisfaction. These results may indicate that marital satisfaction in people with chronic illness is related to something other than knowledge about the illness and subsequent quality of life or small sample size.

Tests on the gender differences in relation to illness status revealed a significant finding that Diabetic males were significantly more satisfied in their marriages than the control group males that were surveyed. This result was somewhat surprising given the life changes that illness causes. But, Baider et al. (1989) found a similar result

with the case of colon cancer where men married to women with colon cancer were less satisfied in marriage than men with colon cancer. Hafstrom and Schram (1984) also found that women who were chronically ill were not significantly different from a control group in marital satisfaction. No explanations are given for these findings in women, but possibilities include worry about possible death of the spouse, increased caretaking, and fear of future complications of illness.

Frequencies of answers to the Diabetes Effect Scale indicated that most of the couples with Diabetes perceived that the presence of Diabetes had no effect on the marriage. This finding may offer some explanation for the high scores the Diabetic couples had on the Marital Adjustment Test. If there is no effect on the marriage, there is little reason to be dissatisfied with the marriage. In fact the couples with Diabetes actually scored higher than the control group couples in marital satisfaction.

A possible explanation for this unexpected result of high satisfaction among couples with Diabetes is that most of the participants in the study were found at Diabetes support and education groups. These participants have access to social support from peers in monthly meetings and functions where they are educated on proper care. Many of the couples have been living with the illness for over ten

years with few complications (Heart Disease, kidney problems, amputations, blindness, etc.) which could also lessen the possible negative impact on marital satisfaction. However, White et al. (1992) found that women did not differ in psychosocial adjustment due to length of the illness. The participants in the White et al. study may be similar to the participants in the current study where most do not suffer from serious complications of illness.

Gilford (1984) found satisfaction to be high among people aged 63 to 69 years of age, and believed that the high scores were due to good health at that age. Participants in the current study had a mean age of 63, which coincides with Gilford's findings. Another possible explanation for the high marital satisfaction found is that Diabetics who have good blood-sugar control are probably in good health, which could have a less negative impact on the marriage than those with poor blood-sugar control, because poor blood-sugar control leads to blindness, numbness, and other complications of Diabetes.

Heaton and Albrecht (1991) found that there are very few unhappily married couples due to the ease of getting divorced. In the later years, couples have had plenty of time to get divorced if they are unhappily married. This may be another reason for the high marital satisfaction in all of the couples surveyed in this study.

A potential problem area for couples with Diabetes is the high rate of impotence among Diabetic men (ADA). If this is a problem it may lead to the healthy partner seeking an affair (Rolland, 1994). Palmer et al. (1982) found that healthy partners of the chronically ill were less satisfied with their sexual relations than the ill. But, there is more to marriage than sexual contact. If there were other problems in the marriage prior to the diagnosis of chronic illness, the healthy partner is more likely to leave the marriage than stay according to Rolland. Apparently, the couples surveyed in the current study have few sexual problems or have dealt with them and had no major marital problems prior to the diagnosis of Diabetes. Occurrence of impotence was not assessed in the current study.

Previous studies on chronic illness and marital satisfaction have surveyed couples with a wide range of illnesses from Cancer to Asthma (Brackney, 1979; Carter & Carter, 1994; Lewis et al., Hafstrom & Schram, 1984; and Palmer et al., 1982). These studies have found that most people with chronic illness are happier in their marriages than their healthy spouse. The current study also found that trend, but the result was not significant. Reasons for the expected differences between healthy spouses and chronically ill spouses are: increased caregiving by the healthy spouse, less sexual contact, role adjustments, and forced changing

plans for the future (Rolland, 1994). These things may impact the healthy spouse more because they themselves would still be able to function normally if it were not for the presence of the illness in their partners.

A couple of studies on marital satisfaction have found gender differences in response to chronic illness (Baider et al., 1989; and Rolland, 1994). But few studies have been conducted on both males and females with the same illness or only assessed marital satisfaction in one gender of participants (Hafstrom & Schram, 1984; Lewis et al., 1989; Sexton & Munro, 1985; White et al., 1992; and Woods et al., 1993). The current study sought to remedy the problem of unanswered questions in male and female marital satisfaction where chronic illness is present by including chronically ill males and females and both genders of spouses. The only significant difference in marital satisfaction found in the present study was between Diabetic men and control group men where the Diabetic men were happier in marriage.

The problem with the current study is that there were not equal numbers of males and females with the illness which may have skewed the results. There also were very few participants as a whole. This study should be replicated with more participants and equal numbers of men and women with the same chronic illness and compare them to a control group. Other chronic illnesses also should be studied in the

same way in order to check for differences based on severity of the illness. If those results indicate that couples with chronic illnesses present are as high or higher in marital satisfaction than the control groups it may be due to the current trend of hospitals to form education and support groups which are beneficial to the couples. Then, a comparison should be made between those who attend groups and those who do not. Although it would be difficult to find participants who do not attend groups. From this study, it appears that couples with Diabetes present in this instance are adjusting fairly well and some may not need extra counseling for marital satisfaction. From an applied perspective, results like this may indicate that couples with chronic illness present are coping well with the illness and continue to have successful marriages partly due to efforts of hospitals and support groups that are meeting their needs. Of course further study with more participants must be conducted before a more firm conclusion can be reached.

Appendix A: Informed Consent Form

Informed Consent

The study in which you are about to participate is designed to investigate the relationship between Diabetes and Marital Adjustment. This study is being conducted by Lara Campbell under the supervision of Dr. Michael Weiss, Associate Professor of Psychology. This study has been approved by the Psychology Department Human Subjects Review Board at California State University, San Bernardino.

In this study you will respond to questions pertaining to your experience with chronic illness and your marital adjustment. Depending on your health status, the questionnaires may take from 8 minutes to 30 minutes to complete. Some questions may be slightly upsetting to some of you. If any questions are too personal you may skip them, or elect to withdraw from the study. Please remember that your participation is voluntary and there is no penalty if you decide to withdraw.

Any information you provide will be held in strict confidence and will be anonymous. At no time will your name accompany your responses. All data will be reported in group form only. At the conclusion of this study you may request a report of the results. If you have questions regarding this study, please contact Dr. Weiss: (909) 880-5594.

I acknowledge that I have been informed of, and understand, the nature and purpose of this study, and I freely consent to participate. I acknowledge that I am at least 18 years of age.

Participant's signature_____ Date_____

Researcher's signature_____ Date_____

Appendix B: Debriefing Statement

Debriefing Statement

This study was designed to assess the relationship between Diabetes and Marital Satisfaction. It was necessary to use the words Marital Adjustment in attempt to avoid influencing your responses to the questions in a more positive way.

Please understand that a questionnaire such as this is not as in depth as interview procedures in determining your marital satisfaction, but a general scale for happiness in marriage.

It is predicted that there is a relationship between Diabetes and Marital Satisfaction, but the direction of the relationship is not yet clear. If you would like to know the results of this study or have questions regarding your marriage as a result of participation in this study and would like referrals for low cost counseling, please contact Dr. Michael Weiss at California State University, San Bernardino (909) 880-5594.

Thank you for your participation,

Lara L. Campbell

Appendix C: Demographics for the Chronic Illness Group

Demographics (D)

Please fill in or circle the appropriate answer.

1. Your age _____
2. Your sex: M F
3. Number of years you have been married to your current spouse. _____
4. Is this your first marriage? Y N
5. Please indicate your approximate income level:
____ Under 15,000 a year
____ 15,000-29,000 a year
____ 30,000-49,000 a year
____ 50,000 or more a year
7. Please indicate your ethnicity _____
8. How long have you had Diabetes? _____
9. What type of Diabetes do you have? _____
10. Have you had any complications from Diabetes or its treatment?
(Please circle all that apply)
a. circulation problems b. kidney problems c. heart problems
d. blindness e. foot problems f. amputations
g. others (please list) _____
11. Does your spouse have Diabetes? Y N

Appendix D: Demographics for Control Group and Spouses
of Diabetes Patients

Demographics

Please fill in or circle the appropriate answer.

1. Your age _____
2. Your sex _____
3. Number of years you have been married to your current spouse _____
4. Is this your first marriage? Y N
5. Is there anyone living in your household other than you and your spouse? Y N
6. Do you have any type of chronic illness such as arthritis or diabetes? Y N
7. If you have a chronic illness, please indicate what the illness is:

8. Does your spouse have a chronic illness? Y N
9. If your spouse has a chronic illness, please indicate the name of the chronic illness. _____
10. Please indicate your approximate income level:
____ Under 15,000 a year
____ 15,000-29,000 a year
____ 30,000-49,000 a year
____ 50,000 or more a year
11. Please indicate your ethnicity _____

Appendix E: The Diabetes Related Knowledge and Psychosocial Function Questionnaire

Diabetes Related Knowledge and Psychosocial Function Questionnaire
Please circle the best answer: Y = yes, N = no, NS = not sure.

1. One of the usual causes of diabetes is eating too much sugar and other sweet foods.....Y N NS
2. Common symptoms of a high blood sugar are: sneezing, red spots, and dandruff.....Y N NS
3. Foot care should be done everyday.....Y N NS
4. Symptoms for low blood sugar are: shaky, weak, sweaty, feel like you will pass out.....Y N NS
5. A treatment for low blood sugar reaction is diet soda..Y N NS
6. If you have the stomach flu, you should not take your diabetes medication.....Y N NS
7. It is all right to drink alcohol if you take the diabetes pill, but not if you are on insulin.....Y N NS
8. You can only check your blood sugar in a laboratory....Y N NS
9. Common complications of an uncontrolled blood sugar are: blindness, kidney failure, and impotence.....Y N NS
10. Stress from an argument increases your blood sugar....Y N NS
11. Fresh fruit is a "free food" in the diabetic diet.....Y N NS
12. Any food product that says "dietetic" on the label can be consumed as desired.....Y N NS
13. Eating whole wheat bread instead of white bread is one way to increase the fiber in your diet.....Y N NS
14. Twice as much meat can be served at supper if none is eaten at lunch.....Y N NS
15. During illness, such as stomach flu, it is okay to eat items such as regular soda pop and jello.....Y N NS
16. Another name for 2% milk is skim milk.....Y N NS

17. Margarine has fewer calories than butter.....Y	N	NS
18. Vinegar and oil is a free salad dressing.....Y	N	NS
19. Cream cheese and butter are both considered fat exchanges.....Y	N	NS
20. It's okay to miss meals if you're on a diabetic diet..Y	N	NS
21. Insulin in use may be stored at room temperature.....Y	N	NS
22. Alcohol may interfere with blood sugar control and medication.....Y	N	NS
23. Oral medications are effective only if the pancreas is able to produce insulin.....Y	N	NS
24. Always withdraw the longer-acting insulin first.....Y	N	NS

Please answer using the abbreviations as follows: SA=strongly agree, A=agree, DC=don't care, D=disagree, SD=strongly disagree.

1. It is important to control my diabetes so I may live longer.....SA	A	DC	D	SD
2. I find it harder to remember things through the years.....SA	A	DC	D	SD
3. I feel that I know enough about diabetes.SA	A	DC	D	SD
4. Eating in restaurants is a problem if you have diabetes.....SA	A	DC	D	SD
5. I have difficulty with my special diet...SA	A	DC	D	SD
6. Exercise makes a difference in a person with diabetes.....SA	A	DC	D	SD
7. I find it difficult to take pills/insulin as prescribed.....SA	A	DC	D	SD
8. I sometimes forget to take my pills/insulin.....SA	A	DC	D	SD
9. Taking the pill/shot embarrasses me in public.....SA	A	DC	D	SD
10. I have difficulty in learning to do my blood sugars.....SA	A	DC	D	SD

How often does he/she:

Please rate as: 1=never, 2=twice a month, 3=once a week, 4=several times a week, 5=at least once a day.

9. I believe I have adjusted well to diabetes.....A DK D
8. I would like to be told if my diabetic control had been poor.....A DK D
7. Diabetes is not really a problem because it can be controlled.....A DK D
6. Being told you have diabetes is like being sentenced to a lifetime of illness.....A DK D
5. There is little hope of leading a normal life with diabetes.....A DK D
4. Most people would find it difficult to adjust to having diabetes.....A DK D
3. Diabetes is the worst thing that ever happened to me.....A DK D
2. Diabetes has made no difference to my life at all.....A DK D
1. If I did not have diabetes I think I would be a quite different person.....A DK D

Please answer with the following abbreviations: A=agree, DK=don't know, D=disagree.

15. Doing blood sugars at home is a bother.....SA A DC D SD
14. Sticking myself with the lancet makes me nervous.....SA A DC D SD
13. Doing blood sugars at home is expensive.....SA A DC D SD
12. Keeping records of my blood sugars is difficult.....SA A DC D SD
11. Doing blood sugars at home is time consuming.....SA A DC D SD

- | | | | | |
|---|---|---|---|---|
| 1. Praise you for following your diet?.....1 | 2 | 3 | 4 | 5 |
| 2. Nag you about testing you glucose level?....1 | 2 | 3 | 4 | 5 |
| 3. Criticize you for not exercising regularly?.1 | 2 | 3 | 4 | 5 |
| 4. Plan family activities so that they will fit in with your diabetes self-care?.....1 | 2 | 3 | 4 | 5 |
| 5. Congratulate you for sticking to your diabetes self-care?.....1 | 2 | 3 | 4 | 5 |
| 6. Eat at the same time that you do?.....1 | 2 | 3 | 4 | 5 |
| 7. Buy you things containing sugar to carry with you in case of an insulin reaction.....1 | 2 | 3 | 4 | 5 |
| 8. Eat foods that are not part of your diabetic diet?.....1 | 2 | 3 | 4 | 5 |

Please rate on a scale of 1-5: 1=very frequently and 5=very rarely.

- | | | | | |
|--|---|---|---|---|
| 1. How often do you participate in social activities with friends?.....1 | 2 | 3 | 4 | 5 |
| 2. How often do you participate in social activities with relatives?.....1 | 2 | 3 | 4 | 5 |
| 3. How much do you participate in community affairs?.....1 | 2 | 3 | 4 | 5 |

Please answer with either Y=yes or N=no.

- | | |
|---|---|
| 1. Are you on a prescribed diet?.....Y | N |
| 2. Do you exercise?.....Y | N |
| 3. Do you do self blood glucose monitoring?.....Y | N |
| 4. Do you test your urine for glucose or ketones?.....Y | N |

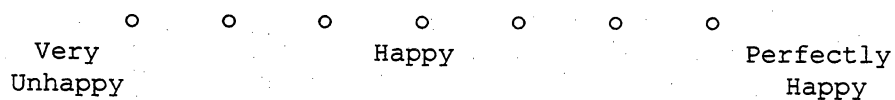
Please fill in your answer.

1. Who prepares the meals at home? _____
2. What type and dose of medication are you taking? _____

Appendix F: The Locke-Wallace Marital Adjustment Test

Marital-Adjustment Scale

1. Check the dot on the scale line below which best describes the degree of happiness, everything considered, of your present marriage. The middle point, "happy," represents the degree of happiness which most people get from marriage, and the scale gradually ranges on one side to those few who are very unhappy in marriage, and on the other, to those few who experience extreme joy or felicity in marriage.



State the approximate extent of agreement or disagreement between you and your mate on the following items. Please circle the item:

AA=always agree, AAA=almost always agree, OD=occasionally disagree, FD=frequently disagree, AAD=almost always disagree.

- | | | | | | |
|---|-----|----|----|-----|----|
| 2. Handling family finances.....AA | AAA | OD | FD | AAD | AD |
| 3. Matters of recreation.....AA | AAA | OD | FD | AAD | AD |
| 4. Demonstrations of affection...AA | AAA | OD | FD | AAD | AD |
| 5. Friends.....AA | AAA | OD | FD | AAD | AD |
| 6. Sex relations.....AA | AAA | OD | FD | AAD | AD |
| 7. Conventionality (right, good,
or proper conduct).....AA | AAA | OD | FD | AAD | AD |
| 8. Philosophy of life.....AA | AAA | OD | FD | AAD | AD |
| 9. Ways of dealing with in-laws..AA | AAA | OD | FD | AAD | AD |

Please check the best answer.

10. When disagreements arise, they usually result in: husband giving in___, wife giving in___, agreement by mutual give and take___.
11. Do you and your mate engage in outside interests together? All of them___, some of them___, none of them___.

12. In leisure time do you generally prefer: to be "on the go"____, to stay at home____? Does your mate generally prefer: to be "on the go"____, to stay at home____?

13. Do you ever wish you had not married? Frequently____, occasionally____, rarely____, never____.

14. If you had your life to live over, do you think you would: marry the same person____, marry a different person____, not marry at all____.

15. Do you confide in your mate: almost never____, rarely____, in most things____, in everything____.

Appendix G: The Strength of Religious Beliefs Scale

Religious Beliefs

Please check the appropriate answer:

1. How often do you attend religious services?

- a. ☐ Never
- b. ☐ Once a year
- c. ☐ Couple times a year
- d. ☐ Every other month
- e. ☐ Once a month
- f. ☐ Twice a month
- g. ☐ Once a week
- h. ☐ Twice a week
- i. ☐ Several times a year

2. How strongly do you identify with your religion's doctrine?

- a. ☐ Somewhat strong or not very strong
- b. ☐ Strong

3. Do you believe in life after death?

- a. ☐ Do not believe or uncertain
- b. ☐ Believe

4. Are you currently a member of a religious organization?

- a. ☐ Non-member
- b. ☐ Member

Appendix H: The Effect of Diabetes Scale

Questions for the Diabetic Participants:

Please answer only one of the following two questions.
(Circle the appropriate response)

1. If you were aware that you had Diabetes before you were married; do you think the presence of diabetes has affected your marriage in...

A POSITIVE WAY

NO WAY AT ALL

A NEGATIVE WAY

2. If you discovered that you had Diabetes after you and your spouse were married; do you believe that the presence of Diabetes has changed your marriage in...

A POSITIVE WAY

NO WAY AT ALL

A NEGATIVE WAY

Questions for the spouses of Diabetics:

Please answer only one of the following two questions.
(Circle the appropriate response)

1. If you knew your spouse had Diabetes before you married him/her; do you think the presence of Diabetes has affected your marriage in ...

A POSITIVE WAY

NO WAY AT ALL

A NEGATIVE WAY

2. If your spouse was diagnosed with Diabetes after you were married; do you believe the presence of Diabetes has changed your marriage in...

A POSITIVE WAY

NO WAY AT ALL

A NEGATIVE WAY

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