



2011-03-10

# Relational Diagnosis and Psychotherapy Treatment Cost Effectiveness

Adam Mousley Moore  
*Brigham Young University - Provo*

Follow this and additional works at: <https://scholarsarchive.byu.edu/etd>

 Part of the [Family, Life Course, and Society Commons](#)

---

## BYU ScholarsArchive Citation

Moore, Adam Mousley, "Relational Diagnosis and Psychotherapy Treatment Cost Effectiveness" (2011). *All Theses and Dissertations*. 2927.

<https://scholarsarchive.byu.edu/etd/2927>

This Dissertation is brought to you for free and open access by BYU ScholarsArchive. It has been accepted for inclusion in All Theses and Dissertations by an authorized administrator of BYU ScholarsArchive. For more information, please contact [scholarsarchive@byu.edu](mailto:scholarsarchive@byu.edu), [ellen\\_amatangelo@byu.edu](mailto:ellen_amatangelo@byu.edu).

Relational Diagnosis and Psychotherapy

Treatment Cost Effectiveness

Adam M. Moore

A dissertation submitted to the faculty of  
Brigham Young University  
in partial fulfillment of the requirements for the degree of

Doctor of Philosophy

D. Russell Crane, Chair  
Leslie L. Feinauer  
Richard B. Miller  
Roy A. Bean  
Jeffrey H. Larson

Department of Marriage and Family Therapy

Brigham Young University

April 2011

Copyright © 2011 Adam M. Moore

All Rights Reserved

## ABSTRACT

### Relational Diagnosis and Psychotherapy Treatment Cost Effectiveness

Adam M. Moore  
Department of Marriage and Family Therapy, BYU  
Doctor of Philosophy

Despite a call by researchers for estimates of the treatment effectiveness and cost effectiveness for relational problems, very little has been done to answer this call. The present study is an examination of actual treatment costs and recidivism rates for patients treated for a relational problem (either in individual or conjoint therapy sessions) in the CIGNA network. Policymakers and third-party payers may use such clinical-effectiveness and cost-effectiveness data to make decisions regarding treatment of relational problems and funding allocation. The present study is also the first to compare the costs of couples therapy versus family therapy for relational problems.

Keywords: psychotherapy, cost, cost effectiveness, relational diagnosis, managed care, couples therapy, family therapy

## ACKNOWLEDGMENTS

I would like to express my deep appreciation to the collaborators who made this project possible: Jodi Aronson Prohofsky, Ph.D., LMFT, Senior Vice President of Operations, CIGNA; Anthony G. Massey, MD, MBA, Senior Medical Director, CIGNA; and David Bergman, J.D., Former Director of Legal and Government Affairs at AAMFT, now VP of Legal & External Affairs & Chief Legal Officer, National Board for Certified Counselors.

I also want to thank my advisor, Dr. D. Russell Crane, for guiding me through the rigorous process of taking this manuscript from concept to completion. I am thankful to my committee members for their feedback and encouragement. I'm grateful to my mom and dad for teaching me the value of education. Finally, I am grateful to my wonderful wife, Lindsay, for supporting me through a challenging three and a half years.

## TABLE OF CONTENTS

LIST OF TABLES .....	vi
Relational Diagnosis and Psychotherapy Treatment Cost Effectiveness .....	1
Review of Literature .....	2
DSM-IV Relational Diagnosis .....	2
Treatment Cost Effectiveness.....	3
Marriage and Mental Health .....	6
Children’s Mental Health and Relationship Problems.....	7
Method .....	9
Sample.....	9
Data Cleaning.....	10
Procedure.....	10
Episodes of Care .....	10
Total cost .....	11
Recidivism and treatment success .....	11
Cost effectiveness .....	11
Dropouts .....	11
Services and diagnoses .....	11
Modality.....	12
Profession type .....	12
Control variables.....	12
Relational diagnoses.....	12
Preliminary Analysis.....	14
Research Questions .....	15
Results.....	16

Question 1 .....	16
Question 2 .....	16
Question 3 .....	24
Question 4 .....	26
Discussion.....	27
Limitations .....	35
References.....	39

LIST OF TABLES

Table 1- Cost Differences by Profession for Parent-Child Problems Treated Relationally ..... 18

Table 2- Cost Differences by Profession for Parent-Child Problems Treated Individually ..... 18

Table 3- Cost Differences by Profession for Partner-Relational Problems Treated Relationally 19

Table 4- Cost Differences by Profession for Partner-Relational Problems Treated Individually 19

Table 5- Cost, Recidivism, and Estimated Cost Effectiveness by Profession in the First EoC for Parent-Child Problems Treated Relationally ..... 22

Table 6- Cost, Recidivism, and Estimated Cost Effectiveness by Profession in the First EoC for Parent-Child Problems Treated Individually ..... 22

Table 7- Cost, Recidivism, and Estimated Cost Effectiveness by Profession in the First EoC for Partner-Relational Problems Treated Relationally ..... 23

Table 8- Cost, Recidivism, and Estimated Cost Effectiveness by Profession in the First EoC for Partner-Relational Problems Treated Individually ..... 23

Table 9- Cost, Recidivism, and Estimated Cost Effectiveness by Modality in the first EoC for Parent-Child Problems ..... 25

Table 10- Cost, Recidivism, and Estimated Cost Effectiveness by Modality in the first EoC for Partner-Relational Problems ..... 26

## Relational Diagnosis and Psychotherapy Treatment Cost Effectiveness

Research has firmly established the impact of family relationships on individual mental health (e.g. Kiecolt-Glaser & Newton, 2001; Ross, Mirowsky, & Goldsteen, 1990; Simon, 2002). As such, individual and family therapy clients often present in therapy with relational problems— those that occur typically between two or more members of a family or between intimate partners (American Psychiatric Association, 2000). Although family relationship problems have been shown to be related to individual mental health, little is known about the clinical effectiveness or cost effectiveness of treating diagnosed family relationship problems. In fact, the call of Pinsof and Wynne (1995a) for researchers to incorporate cost-effectiveness measures into their studies has gone largely unanswered due to a lack of available data regarding the costs of couple and family therapy.

Policymakers and third-party payers could use such clinical effectiveness and cost-effectiveness data to make decisions regarding treatment of relational problems and funding allocation. From a clinical perspective, an understanding of which treatment provider type or therapy modality (e.g. family or individual treatment) is most cost effective may provide insight into what works in the treatment of relational problems. Finally, because of the link between relationship distress and mental health problems, successful treatment of relational issues may ultimately have an effect on individual mental health. The present study used administrative data from a large health insurer in the United States to study the underexamined area of treatment effectiveness and cost-effectiveness of relational problems.

## Review of Literature

### *DSM-IV Relational Diagnosis*

The data for the present study uses the DSM-IV relational diagnoses as an indicator of relational distress. The existing diagnostic system that therapists use, the Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 2000), follows a medical or disease model. Mental disorders are typically diagnosable with specific criteria that involve an assessment of individual functioning. Although the 4<sup>th</sup> edition text revision of the DSM does not include a set of specific diagnostic categories for relationship problems, “V-codes” can be used to indicate that a relational problem is the focus of treatment. The DSM-IV indicates that V-codes are to be used when:

...the problem is the focus of diagnosis or treatment and the individual has no mental disorder (e.g., a Partner Relational Problem in which neither partner has symptoms that meet criteria for a mental disorder, in which case only the Partner Relational Problem is coded); (p. 731)

Although not all V-codes are specifically relational in nature, several are. These include V61.20 (Parent-Child Relational Problem), V61.10 (Partner Relational Problem), V61.80 (Sibling Relational Problem), V61.90 (Relational Problem Related to a Mental Disorder or General Medical Condition), and V62.81 (Relational Problem Not Otherwise Specified). Relational diagnoses are meant to indicate that treatment is focused on problems between two or more people (Kaslow, 1996), whereas DSM-IV mental disorder diagnoses occur “in an individual” (American Psychiatric Association, p. xxxi). Very little research has focused on treatment cost effectiveness for V-code relational problems. This may be due, in part, to the relative difficulty

of accessing a sufficiently large sample, including treatment cost data, of individuals treated for relational problems.

Important to note is that the DSM-IV does include a GARF (Global Assessment of Relational Functioning) scale to help clinicians rate relational functioning on a numeric continuum. Although this scale does not provide diagnostic information for treatment

#### *Treatment Cost Effectiveness*

It has been argued that the ultimate goal in health care is “to provide the most positive benefit for the least cost to the most people” (Fals-Stewart, Yates, & Klostermann, 2005, p. 29). However, the most common complaint about psychotherapy (especially family therapy) research on cost effectiveness is that there is very little of it (Krupnick & Pincus, 1992; Pincus & Wynne, 1995a). Average costs for the treatment of relational problems have been presented (Crane & Payne, in press), but many questions about the cost effectiveness for these treatments remain.

Some studies have examined the cost effectiveness of specific types of relational therapy for specific presenting problems. For example, O’Farrell et al. (1996) studied the cost effectiveness of behavioral marital therapy (BMT) for alcoholics and their spouses. Treatment delivery, health care, and legal costs were assessed. Savings in health and legal costs outweighed treatment costs for those who received BMT. For depressed patients living with a partner, couple therapy has been shown to be more effective at reducing depression than antidepressant drugs, and no more costly (Leff, et al., 2000). Another study examined the cost effectiveness of treating child anxiety using family-based and individual cognitive behavioral therapy (CBT) approaches (Bodden et al., 2008). Results of this study indicated no significant cost differences between family-based and individual treatments. Multisystemic therapy has been shown to be cost effective compared to alternative protocols for adolescents with serious problems (Henggeler,

1999). Although these studies examined cost effectiveness for family-based treatments, the presenting problems were not specifically relational in nature. Additionally, many studies rely on randomized clinical trials (RCT) data, which may not represent real-world costs of treatment or treatment effectiveness in naturalistic settings.

Crane's (2008) review of the cost-effectiveness of family therapy addressed the issue of real-world costs of family treatment. This type of research is valuable because of how little is known about costs in environments outside the carefully controlled settings of RCTs. This overview of studies provides evidence that family therapy seems to have a medical cost offset effect, that family involvement in treatment does not increase overall healthcare costs, and that those who receive family therapy may use fewer treatment sessions than those who use an individual therapy modality or a mixture of family and individual sessions.

The study that most closely answers the questions answered in the present study is one by Caldwell, Woolley, and Caldwell (2007). Using data from empirical studies on behavioral marital therapy and emotionally focused therapy, the authors created hypothetical cost evaluations of marital therapy versus divorce and medical service usage. Results indicate that marital therapy, paid by the government or insurance providers, is less costly than divorce and health-service-usage expenses incurred by those who may not receive marital therapy.

Of the few studies that have examined costs of treatment of relationship-based problems, several limitations exist. First, no studies have specifically targeted DSM-IV V-codes. Second, although Crane and Payne (in press) examined the effectiveness and cost-effectiveness differences among treatment provider types and treatment modalities in managed care for various diagnosis categories, no studies have examined these variables specifically in the treatment of relational problems. Third, no studies have separated out the treatment costs for family versus

couple therapy. Clearly, the area of treatment cost effectiveness for relational problems is woefully understudied. Knowing more about treatment costs for relational problems is valuable because of the rising costs of health care in the United States (Mongan, Ferris, & Lee, 2008). Identifying predictors of a cost-effective treatment of these types of problems could result in cost savings for care providers.

Calculating cost effectiveness can be a complicated issue. Cost effectiveness generally involves two components: a treatment cost measure and a treatment impact or effectiveness measure (Pinsof & Wynne, 1995a). A cost-effectiveness formula compares both the cost of a given treatment option and the related outcome at the same time—providing a common measure for group comparison. In the case of the present study, this common measure would be cost per successful unit of treatment. A cost-effective treatment is not necessarily the least expensive, but the one that provides the most value for the money (Wells & Sturm, 1995).

Some have suggested that the cost component of a cost-effectiveness analysis should include such costs as lost time at work for clients, therapist overhead costs, per-session payments, and transportation costs (Pinsof & Wynne, 1995b). However, including these data may limit the ability of researchers to compare cost information across studies since not every researcher will have access to the same cost data. The most readily available cost information is simply the per-session fee paid to the therapy provider, either by the client or by a third-party payer. Although this measure of cost does not include all potentially relevant treatment-related costs, it does provide a more comparable measure of cost across studies.

Nearly every cost-effectiveness formula follows the same pattern: calculating units of improvement per treatment dollar (Goldfield, Epstein, Kilanowski, Paluch, & Kogut-Bossler, 2001; Holder, Longabaugh, Miller, & Rubonis, 1991; Haby, Tonge, Littlefield, Carter, & Vos,

2004). Since cost-effectiveness studies regarding couple and family therapy are rare, the present study answers the call of Pinsof and Wynne (1995) to address this understudied area.

### *Marriage and Mental Health*

In order to understand why therapy for relational problems is important, the links between relational distress and individual mental health must be examined. Marriage is one example of a relationship that can powerfully impact mental health. Marriage variables can be broken down into two types—status and quality. Status refers to married versus not married as well as transitions into and out of marriage (e.g. separation). Quality refers to marital harmony or satisfaction variables. Because the present study focuses on relational problems, the marital quality variables that impact mental health are of particular interest.

Several research-based examples demonstrate the impact of marital quality on mental health. There is a solid body of literature linking marital quality with depression (see Beach, Smith, & Fincham, 1994). With pain patients, marital adjustment has been shown to affect depression and anxiety beyond the impact of the pain alone (Cano, Gillis, Heinz, Geisser, & Foran, 2004). On the other hand, social support in marriage is inversely related to depressive symptoms (Dehle, Larsen, & Landers, 2001). Men's anxiety has been shown to affect their own, as well as their wives' marital adjustment (Dehle & Weiss, 2002). Marital harmony is related to better less reported depression for women. Not surprisingly, women who were happily married prior to divorce had large decreases in overall health after divorce (Prigerson, Maciejewski, & Rosenheck, 1999).

Distressed married men also demonstrate symptoms like psychological distress in response to marital problems (Kiecolt-Glaser et al., 1988). According to Fincham, Beach, Harold, and Osborne (1997), evidence exists for different causal paths between marital

satisfaction and depression for men and women. For women, the proposed causal path goes from marital dissatisfaction to depression; for men, the path goes from depression to marital dissatisfaction. Fincham et al. conclude, however, that the relatively higher incidence of clinical depression among women may influence the gender differences in the relationship between marital discord and depression. In any case, the relationship may be cyclical, with depression and marital discord impacting one another.

In addition to having different pathways from marital problems to health, men and women may be affected differently by varying levels of marital distress. Whiting and Crane's (2003) findings suggest that husbands enter a range of severe marital distress at lower marital distress scores (using the Marital Status Inventory) than do wives. This may indicate a general tendency for husbands to be more impacted by marital problems than are women. In contrast, another study found that marital quality scores predicted higher levels of depression in women than they did in men (Dehle & Weiss, 1998). Causal paths between depression and marital satisfaction as well as predictors of divorce for men and women are still being studied. However, these studies provide evidence for using gender as a control variable in analysis examining the impact of relationship problems on mental health. They also demonstrate the powerful effect of intimate partner relationships on mental health.

#### *Children's Mental Health and Relationship Problems*

Children are affected by both parent-child and parent-parent family relationships. Negative family interactions can have serious effects on children's mental health. The Repetti, Taylor, and Seeman (2002) review of the literature found several important connections between family functioning and children's mental health. First, they found that overt aggression and conflict in families increases children's risk for problems like anxiety and depression, and even

suicide. They found also that family coercion is related to aggression and noncompliance in children. Family styles considered to be “cold, unsupportive, or neglectful” (p. 330) are linked to both externalizing and internalizing symptoms.

The same type of marital conflict that predicts divorce also predicts later child externalizing behaviors. Withdrawing fathers have been shown to predict child internalizing behaviors (Katz & Gottman, 1993). There is also some evidence that families with less warm or accepting styles may contribute to anxiety in children (Siqueland, Kendall, & Steinberg, 1996).

Children of depressed parents are more likely to present with psychopathology, including depression and anxiety (Nomura, Wickramaratne, Warner, Mufson, & Weissman, 2002; Orvaschel, Walsh-Allis, & Ye, 1988). Nomura et al. found that family conflict with and without the presence of parental depression has differing results on children. With depressed parents, only low family cohesion resulted in a substance use disorders in children. However, with non-depressed parents, family conflict resulted in much higher risk for major depression and substance use in children. These effects tend to follow children into adulthood. A study on maternal depression, marital conflict and children’s mental health found that children who were exposed to maternal depression at an early age had both internalizing and externalizing symptoms. These problems worsened for children who experienced parental conflict (Essex, Klein, Cho, & Kraemer, 2003).

Parent involvement and parenting issues can also affect children. Both paternal and maternal parental involvement have been shown to predict better mental health in children as they mature (Flouri & Buchanan, 2003). Disagreements between parents regarding parenting issues have been shown to be predictive of internalizing symptoms in children (Shaw, Keenan, Vondra, Delliquadri, & Giovannelli, 1997). These studies generally demonstrate that family

relationship problems are related to individual mental health issues that may be the focus of treatment in family or couple therapy. Although more is known about treating the individual mental disorders, the present study helps fill the gap in the literature regarding the treatment of the relationship problems themselves. The treatment of these relational problems may, in turn, have an effect on individual mental health as well.

Distressed family relationships can have serious, negative mental health consequences for family members. Many of these distressed individuals and families enter psychotherapy seeking help. No studies have yet examined treatment cost effectiveness for relational problems. The present study provides a first look into the treatment costs and effectiveness of the treatment of relational problems in managed care.

## Method

### *Sample*

This study examined administrative data from CIGNA. When the data was examined, CIGNA managed several hundred health care plans with millions of patients. The data used in the present study was from 2001 through 2006. Data available for each patient included age and gender, the region of the country where treatment took place, a current procedural terminology (CPT) code indicating family or individual treatment, primary and secondary DSM-IV diagnoses, the treatment provider's license type, dollar amount of each claim and number of therapy sessions (claims) per patient.

The sample included 3,315 patients who received treatment for a relational diagnosis V-code and who did not drop out of treatment after the first therapy session (Hamilton, Moore, Crane, & Payne, in press). Family and couple therapy are differentiated on the basis of the relational diagnosis in the claim. Those with a diagnosis of a partner relational problem (V61.10)

and a relational CPT code ( $n = 902$ ) are assumed to be using a couple-therapy modality. Those with a parent-child relational problem (V61.20) and a relational CPT code ( $n = 415$ ) are assumed to be using family therapy. The ages of patients in the data set range from 1 to 96 ( $M = 34.32$ ,  $SD = 13.34$ ). Patients with very low ages (e.g. one) might represent children of drug-addicted mothers, for example. Of the patients in the data, 53.8% ( $n = 1,782$ ) were female and 46.2% ( $n = 1,533$ ) were male. The Health Insurance Portability and Accountability Act of 1996 (HIPPA) allows the use of administrative data for studies such as these. No individual patient or provider was identifiable from the data.

### *Data Cleaning*

Raw claims data were combined on a per-patient basis so that each patient represented one line in the data. Because the present study focuses on relational problems, a subset of the CIGNA data was selected in which only patients with relational problems were included. For a full overview of all data cleaning steps for the entire CIGNA data, see Crane and Payne (in press)

### *Procedure*

Treatment providers with nationally recognized licenses were considered for this study. Profession types examined were psychologists, licensed counselors, social workers, and marriage and family therapists. MDs and nurses were included in the data in such small numbers that the decision was made to eliminate them from analysis. The final data set consisted of 3,315 patients and 18,404 therapy sessions.

*Episodes of Care.* Episodes of Care (EoC) were defined by CIGNA as a series of services for the same patient. An EoC ended after an individual had no psychotherapy claims for 90 days. The number of sessions in the first EoC per patient in the data set ranged from 2 to 105 ( $M =$

5.55, SD = 5.53), and more than 91% of all patients completed therapy in a single EoC.

Therefore, the first EoC is the primary focus of this study.

*Total cost.* In the present study, the total “cost” of a given treatment is defined as the number of treatment sessions used by a patient multiplied by the amount paid to the treatment provider per session.

*Recidivism and treatment success.* In the present study, a recidivist is defined as a patient who returns for a second EoC after completing one EoC (see Crane & Payne, in press). Those patients who had only one EoC during the six-year period examined are considered a successfully treated case.

*Cost effectiveness.* A cost effectiveness formula was created. Cost effectiveness consists of per-session cost of treatment and the number of units required for successful treatment. Successful treatment outcomes can be compared for multiple groups, such as therapy provider types. Cost effectiveness was calculated as the 1st EoC average cost + (1st EoC average cost \* recidivism rate) (Crane & Payne, in press).

*Dropouts.* In the full CIGNA data set (including patients with all diagnoses, not just relational), 18% ( $n = 85,065$ ) of patients had only one therapy session in the first EoC. These patients are considered therapy dropouts (Hamilton, Moore, Crane & Payne, in press) and were therefore eliminated from cost-effectiveness examinations. If left in, they could artificially lower overall costs for any group in consideration that has higher dropout rates.

*Services and diagnoses.* Psychotherapy claims were identified using Current Procedural Terminology (CPT) codes as either individual psychotherapy therapy (90806) or conjoint/family psychotherapy (90847) (American Medical Association, 2006).

*Modality.* Those patients who were classified as receiving individual (n = 1,360) or family therapy (n = 1,317) were those whose claims in either EoC were exclusively of one type or the other. Those patients who received a combination of individual and family sessions were classified as receiving a "mixed" therapy type (n = 638).

*Profession type.* There were four types of therapy providers in the CIGNA data who treated relational problems including: professional counselors (LPC), social workers, marriage and family therapists, and psychologists. MDs and nurses had data as treatment providers. However, they provided therapy for so few cases with a relational diagnosis (only 16 and 22 respectively) that they were eliminated from consideration in further analysis.

*Control variables.* Several variables in the data have been shown to affect therapy costs (Crane & Payne, in press). These include the region where service was provided, profession of therapy provider, therapy modality, patient gender, and patient age. In order to determine which variables should be used as controls in regressions predicting costs and recidivism in the present study, these variables were tested to determine their effect on the dependent cost or recidivism variables. Results of these preliminary analyses are presented in the preliminary analysis section below.

*Relational diagnoses.* The relational diagnoses (V-codes) were represented as primary diagnoses in the data for the following numbers of patients: Partner Relational Problem (V61.10; n = 2,355), Parent-Child Relational Problem (V61.20; n = 960), Sibling Relational Problem (V61.80; n = 47), and Relational Problem Related to a Mental Disorder or General Medical Condition (V61.90; n = 42).

In the CIGNA data, the most common relational diagnoses are partner relational problem and parent child problem. As stated earlier, although CPT codes only indicate individual or

relational therapy, a reasonable inference using the parent-child and partner-relational V-codes might be made about the type of treatment employed. The presence of a partner relational problem and a 90847 (relational) CPT code indicates couples therapy, and a parent child problem with a 90847 CPT code indicates family therapy. Because these two V-codes were, by far, the most prevalent, they were the primary focus of the study.

Partner-related problems and parent-child problems seem to be categorically different so as to necessitate breaking these down into two separate groups rather than combining them into a broad “relational diagnosis” category. The DSM-IV (American Psychiatric Association, 2000) defines partner relational problems as:

This category should be used when the focus of clinical attention is a pattern of interaction between spouses or partners characterized by negative communication (e.g., criticisms), distorted communication (e.g., unrealistic expectations), or noncommunication (e.g., withdrawal) that is associated with clinically significant impairment in individual or family functioning or the development of symptoms in one or both partners. (p. 737)

Parent-child relational problems are

...used when the focus of clinical attention is a pattern of interaction between parent and child (e.g., impaired communication, overprotection, inadequate discipline) that is associated with clinically significant impairment in individual or family functioning or the development of clinically significant symptoms in parent or child. (p. 737)

Given the definitional differences in these diagnosis categories, each was examined separately. In this way, cost effectiveness differences between couple and family therapy could be examined. Since it is reasonable to infer a couples therapy modality from the type of relational

code given in addition to the CPT code, the present study is the first study that examines the costs of couples therapy in a managed-care setting.

Finally, while many treatments for relational problems occur in a relational context as indicated by the 90847 CPT code ( $n = 1,317$ ), about as many treatments of relational problems occur with only a single individual in the therapy sessions ( $n = 1,360$ ). Therefore, cost, recidivism, and cost-effectiveness were examined for relational problems treated in a relational therapy context versus relational problems treated with individual therapy. This provides valuable insight into the question of whether all relevant family members need to be present in therapy for the couple or family to receive the full benefits from treatment of relational problems.

#### *Preliminary Analysis*

In order to determine which variables should act as controls in subsequent analyses, a preliminary analysis was conducted. The two outcome variables that were examined in regressions in this study were recidivism and treatment cost for EoC 1. Using CIGNA data, Crane and Payne (in press) suggest that therapy modality, region where the service was rendered, therapist license type, and patient age and gender should all be tested as potential control variables.

To determine controls for analyses using logistic regression, a logistic regression was run, predicting recidivism, the treatment outcome variable of this study. Variables that have been demonstrated to impact the recidivism outcome variable were placed into the model (Crane & Payne, in press). These included patient gender and age as well as therapy provider profession type, therapy modality, and region of the country where services were provided. The model was significant,  $\chi^2(5, N = 3,315) = 14.69, p < .05$ . Significant predictors of recidivism were patient

gender ( $p < .01$ ), and therapy modality ( $p < .05$ ), which were used in later analysis as control variables when predicting recidivism.

To determine controls for analyses using ordinary least squares regression, predicting the total cost per patient for EoC 1, a regression was run using the same variables. The model was significant,  $F(5, 3,309) = 32.06, p < .001$ . Significant predictors in the model included patient age ( $p < .001$ ), region ( $p < .05$ ), profession type ( $p < .001$ ), and modality ( $p < .001$ ). Gender was not a significant predictor in the model. Therefore, where appropriate, patient age, therapy modality, provider profession type, and region where services were provided were used as statistical controls in regressions predicting cost.

### *Research Questions*

The purpose of this study was to determine the cost effectiveness of treating relational problems in managed care. Consequently, the following research questions were addressed:

*Question 1.* Which of the therapy treatment modalities, individual, family (or relational), or mixed has the greatest success (defined by patient recidivism) in treating relational problems?

*Question 2.* What is the cost effectiveness for each of the professions treating patients with relational problems?

*Question 3.* What is the cost effectiveness of treating patients with relational problems for each of the treatment modalities in the data, individual, family, and mixed?

*Question 4.* What are the cost differences in treating couple versus family problems with relational therapy?

## Results

### *Question 1*

Which of the therapy treatment modalities, individual, family, or mixed has the greatest success (defined by patient recidivism) in treating relational problems? The two types of relational problems, parent-child ( $n = 960$ ) and partner-relational ( $n = 2,355$ ), were examined separately. In order to answer this question, three separate binary logistic regressions were run for each group, using one of the three modalities as the reference variable for group comparisons, and controlling for patient gender.

For parent-child problems, the model was not significant  $\chi^2 = 5.18, p = .16$ . For partner-relational problems, the model was also not significant  $\chi^2 = 6.67, p = .08$ . Therefore, none of the modalities was more or less likely to have recidivism than the others for the treatment of either type of relational problem.

### *Question 2*

What is the cost effectiveness for each of the professions treating patients with relational problems? Cost effectiveness in this case has two components—average cost per profession and average recidivism per profession. Statistical differences among average costs by profession were examined with an ordinary least squares regression, controlling for patient age and region where services were provided. Four groups were examined including a) patients treated for parent-child problems with a relational modality ( $n = 415$ ), b) patients treated for parent-child problems with an individual modality ( $n = 359$ ), c) patients treated for partner-relational problems with a relational modality ( $n = 902$ ), and d) patients treated for partner-relational problems with an individual modality ( $n = 1001$ ).

For each group, four different regressions were run, each with a different profession as the reference group. For those treated for parent-child problems with a relational modality, the model was significant,  $F(5, 409) = 4.08, p < .001$ . Psychologists had significantly higher average costs than counselors, MSWs and MFTs. No other differences were statistically significant. For those treated for parent-child problems with an individual modality, the model was significant,  $F(5, 353) = 3.69, p = .003$ . On cost, counselors were significantly higher than MFTs ( $p = .04$ ) and lower than psychologists ( $p = .03$ ). Also lower than psychologists were MSWs ( $p = .004$ ) and MFTs ( $p < .001$ ).

For those treated for a partner-relational problem with a relational modality, the model was significant,  $F(5, 896) = 11.19, p < .001$ . Only counselors were significantly different on cost than other providers. They were lower than MSWs ( $p < .001$ ), MFTs ( $p < .001$ ), and psychologists ( $p = .02$ ). Finally, for those treated for a partner-relational problem with an individual modality, the model was significant,  $F(5, 995) = 5.39, p < .001$ . On costs, psychologists were significantly higher than counselors ( $p < .001$ ), MSWs ( $p < .001$ ), and MFTs ( $p = .03$ ).

Tables 1 through 4 depict the cost of an average treatment by each profession, treating each of the four groups. In these tables, statistical and cost differences are computed from the previously described OLS regression analysis of average costs differences among professions.

Table 1

*Cost Differences by Profession for Parent-Child Problems Treated Relationally*

	Profession	<i>n</i>	I	II	III	IV
I	Counselors	96	-	-34.37	-17.45	-156.65**
II	MSWs	186		-	16.92	-122.29*
III	MFTs	70			-	-139.21**
IV	Psychologists	63				-

\*  $p < .01$ , \*\*  $p < .001$ 

*Each intersection between row and column represents the average cost difference, in dollars, between the row and column professions for a given treatment episode. Amounts are derived from the row profession's average amount minus the column profession's average amount.*

Table 2

*Cost Differences by Profession for Parent-Child Problems Treated Individually*

	Profession	<i>N</i>	I	II	III	IV
I	Counselors	99	-	23.06	75.27*	-73.83*
II	MSWs	144		-	52.21	-96.21**
III	MFTs	53			-	-148.42***
IV	Psychologists	63				-

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

*Each intersection between row and column represents the average cost difference, in dollars, between the row and column professions for a given treatment episode. Amounts are derived from the row profession's average amount minus the column profession's average amount.*

Table 3

*Cost Differences by Profession for Partner-Relational Problems Treated Relationally*

	Profession	N	I	II	III	IV
I	Counselors	285	-	-107.85***	-146.88***	-85.64*
II	MSWs	336		-	-39.03	22.21
III	MFTs	103			-	61.24
IV	Psychologists	178				-

\* p &lt; .05, \*\* p &lt; .01, \*\*\* p &lt; .001

Each intersection between row and column represents the average cost difference, in dollars, between the row and column professions for a given treatment episode. Amounts are derived from the row profession's average amount minus the column profession's average amount.

Table 4

*Cost Differences by Profession for Partner-Relational Problems Treated Individually*

	Profession	N	I	II	III	IV
I	Counselors	299	-	-11.93	-22.52	-87.72**
II	MSWs	388		-	-10.60	-75.79**
III	MFTs	101			-	-65.20*
IV	Psychologists	213				-

\* p &lt; .05, \*\* p &lt; .001

Each intersection between row and column represents the average cost difference, in dollars, between the row and column professions for a given treatment episode. Amounts are derived from the row profession's average amount minus the column profession's average amount.

For cost effectiveness calculations, the average total dollars in EoC 1 were entered into the cost effectiveness formula presented earlier. Because the cost effectiveness formula includes a measure of recidivism for each profession being examined, differences in recidivism by profession were examined with a binary logistic regression, controlling for patient gender, for each patient group examined. For patients treated for parent-child problems with a relational

modality, the model was not significant,  $\chi^2 = 1.37, p = .85$ . For patients treated for parent-child problems with an individual modality, the model was not significant,  $\chi^2 = 4.99, p = .29$ . For patients treated for partner-relational problems with a relational modality, the model was significant,  $\chi^2 = 17.08, p = .002$ . On recidivism, MFTs were significantly different than counselors ( $p < .05$ ), MSWs ( $p < .05$ ), and psychologists ( $p < .05$ ). No other significant differences among the provider types were found. In this case, counselors were more than 8 times as likely to see recidivism than MFTs while MSWs and psychologists were more than 12 and 9 times as likely, respectively, than MFTs to see patients return for a second episode of care. Finally, for patients treated for partner-relational problems with an individual modality, the model was not significant,  $\chi^2 = 1.69, p = .79$ . Thus, in all but one case, the recidivism rates were not significantly different among the professions.

For use in the cost-effectiveness formula, mean recidivism rates by profession were determined for each of the four groups. For patients treated for parent-child problems with a relational modality, the profession with the lowest recidivism rate was counselors with a rate of 9.38%, followed by psychologists (12.7%), MSWs (12.9%), and then MFTs (14.29%). For patients treated for parent-child problems with an individual modality, the profession with the lowest recidivism rate was MSWs (8.33%), followed by counselors (9.1%), MFTs (11.32%), and then psychologists (12.7%). For patients treated for partner-relational problems with a relational modality, the profession with the lowest recidivism rate was MFTs (1.0%), followed by counselors (7.72%), psychologists (8.99%), and then MSWs (11.01%). Finally, for patients treated for partner-relational problems with an individual modality, the profession with the lowest recidivism rate was MFTs with 5.94%, followed by MSWs (6.7%), psychologists

(7.04%), followed by counselors (8.36%). Cost effectiveness was then calculated with the formula provided earlier, using group means for total dollars in EoC 1 and recidivism in EoC 1.

For patients treated for parent-child problems with a relational modality, the most cost effective profession was counselors (n = 99; \$217.85), followed by MFTs (n = 70; \$253.10), MSWs (n = 186; \$260.20), and psychologists (n = 63; \$387.53). For patients treated for parent-child problems with an individual modality, the most cost effective profession was MFTs (n = 53; \$180.34), followed by MSWs (n = 144; \$219.53), counselors (n = 99; \$228.90), and psychologists (n = 63; \$316.57). For patients treated for partner-relational problems with a relational modality, the most cost effective profession was counselors (n = 285; \$209.71), followed by psychologists (n = 178; \$323.41), MSWs (n = 336; \$345.93), and MFTs (n = 103; \$384.72). For patients treated for partner-relational problems with an individual modality, the most cost effective profession was MSWs (n = 388; \$243.19), followed by MFTs (n = 101; \$247.41), psychologists (n = 213; \$324.89), and counselors (n = 299; \$341.75). Because cost effectiveness was derived from a formula rather than statistical comparisons, statistical differences among groups on cost effectiveness are not reported.

Important to note is the presence of log cost in the tables depicting the components and results of the cost effectiveness calculations for the professions. Because of the nature of the data, the cost means were smaller than the standard deviations, violating the assumption of normal data distribution on the dependent variable in the regressions. Therefore, both real costs, valuable for decision makers, and log-transformed costs, valuable in determining statistical significance in group differences, are presented in Tables 5 through 8. These tables also contain recidivism and cost effectiveness for all of the examined provider types for each of the four studied patient groups.

Table 5

*Cost, Recidivism, and Estimated Cost Effectiveness by Profession in the First EoC for Parent-Child Problems Treated Relationally*

Profession	<i>n</i>	Cost	Log Cost	Recidivism	Cost effectiveness
Counselors	99	\$199.17	\$151.41	9.38%	\$217.85
MFTs	70	\$221.45	\$172.43	14.29%	\$253.10
MSWs	186	\$230.55	\$174.16	12.90%	\$260.20
Psychologists	63	\$343.86	\$242.26	12.70%	\$387.53

*Cost: Average cost, in dollars, for a treatment episode of care (EoC) for the column's profession (calculated by dollars paid to provider per session times total sessions in EoC).*

*Log cost: Natural-log-transformed average cost, in dollars, for a treatment episode of care (EoC) for the column's profession.*

*Recidivism: Rate of patient return for a second EoC after completing a first EoC for the column's profession.*

*Cost-effectiveness: By profession, the average cost of the first EoC plus the average cost of the first EoC times the recidivism rate. Measures average cost effectiveness by profession for a single EoC.*

Table 6

*Cost, Recidivism, and Estimated Cost Effectiveness by Profession in the First EoC for Parent-Child Problems Treated Individually*

Profession	<i>n</i>	Cost	Log Cost	Recidivism	Cost effectiveness
MFTs	53	\$162.00	\$68.71	11.32%	\$180.34
MSWs	144	\$202.65	\$152.93	8.33%	\$219.53
Counselors	99	\$209.81	\$157.59	9.10%	\$228.90
Psychologists	63	\$280.90	\$206.44	12.70%	\$316.57

*Cost: Average cost, in dollars, for a treatment episode of care (EoC) for the column's profession (calculated by dollars paid to provider per session times total sessions in EoC).*

*Log cost: Natural-log-transformed average cost, in dollars, for a treatment episode of care (EoC) for the column's profession.*

*Recidivism: Rate of patient return for a second EoC after completing a first EoC for the column's profession.*

*Cost-effectiveness: By profession, the average cost of the first EoC plus the average cost of the first EoC times the recidivism rate. Measures average cost effectiveness by profession for a single EoC.*

Table 7

*Cost, Recidivism, and Estimated Cost Effectiveness by Profession in the First EoC for Partner-Relational Problems Treated Relationally*

Profession	<i>n</i>	Cost	Log Cost	Recidivism	Cost effectiveness
Counselors	285	\$194.68	\$152.93	7.72%	\$209.71
Psychologists	178	\$296.73	\$232.76	8.99%	\$323.41
MSWs	336	\$311.62	\$206.44	11.01%	\$345.93
MFTs	103	\$380.91	\$217.02	1.00%	\$384.72

*Cost: Average cost, in dollars, for a treatment episode of care (EoC) for the column's profession (calculated by dollars paid to provider per session times total sessions in EoC).*

*Log cost: Natural-log-transformed average cost, in dollars, for a treatment episode of care (EoC) for the column's profession.*

*Recidivism: Rate of patient return for a second EoC after completing a first EoC for the column's profession.*

*Cost-effectiveness: By profession, the average cost of the first EoC plus the average cost of the first EoC times the recidivism rate. Measures average cost effectiveness by profession for a single EoC.*

Table 8

*Cost, Recidivism, and Estimated Cost Effectiveness by Profession in the First EoC for Partner-Relational Problems Treated Individually*

Profession	<i>n</i>	Cost	Log Cost	Recidivism	Cost effectiveness
MSWs	388	\$227.92	\$174.16	6.70%	\$243.19
MFTs	101	\$233.54	\$179.47	5.94%	\$247.41
Psychologists	213	\$303.52	\$219.20	7.04%	\$324.89
Counselors	299	\$315.38	\$162.39	8.36%	\$341.75

*Cost: Average cost, in dollars, for a treatment episode of care (EoC) for the column's profession (calculated by dollars paid to provider per session times total sessions in EoC).*

*Log cost: Natural-log-transformed average cost, in dollars, for a treatment episode of care (EoC) for the column's profession.*

*Recidivism: Rate of patient return for a second EoC after completing a first EoC for the column's profession.*

*Cost-effectiveness: By profession, the average cost of the first EoC plus the average cost of the first EoC times the recidivism rate. Measures average cost effectiveness by profession for a single EoC.*

### *Question 3*

What is the cost effectiveness of treating patients with relational problems for each of the treatment modalities, individual, family, and mixed therapy? Here, relational problems are broken into two groups: parent-child problems and partner-relational problems. As with the second research question, differences among professions for average cost per patient in EoC 1 and recidivism were determined with ordinary least squares regressions and binary logistic regressions, respectively. Cost and recidivism information were later incorporated into the cost effectiveness formula to determine the cost effectiveness for each of the three treatment modalities.

The OLS regressions predicting cost controlled for region, patient age, and profession type. For parent-child problems, the model was significant,  $F(5, 954) = 7.49, p < .001$ . The mixed modality was significantly different than both individual ( $p < .001$ ) and family ( $p = .003$ ) therapy. Family and individual modalities were not significantly different from each other. Mean costs of the three modalities in EoC 1 for the treatment of relational problems were as follows: individual therapy (\$212.35), family therapy (\$238.96), and mixed mode therapy (\$303.39). With regard to recidivism, the model was not significant,  $\chi^2 = 5.18, p = .16$ . Therefore, no statistical differences were found among the treatment modalities. Mean recidivism rates by the modalities for parent-child problems treated in EoC 1 were as follows: individual therapy (9.75%), family therapy (12.23%), and mixed mode (12.90%). Cost effectiveness was then calculated for each of the three therapy modalities. From most cost effective to least, the modalities ranked in this way: individual therapy (\$233.05), family therapy (\$268.18), and mixed mode (\$342.53). Table 9 presents the average cost effectiveness for a single EoC by therapy modality for the treatment of parent-child relational problems.

Table 9

*Cost, Recidivism and Estimated Cost Effectiveness by Modality in the First EoC for Parent-Child Problems*

Modality	<i>n</i>	Cost	Log Cost	Recidivism	Cost effectiveness
Individual	359	\$212.35	\$160.77	9.75%	\$233.05
Family	415	\$238.96	\$177.68	12.23%	\$268.18
Mixed	186	\$303.39	\$232.76	12.90%	\$342.53

*Modality: Only individual therapy, only family therapy, or a combination of individual and family sessions.*

*Cost: Average cost, in dollars, for a treatment episode of care (EoC) for the column's modality (calculated by dollars paid to provider per session times total sessions in EoC).*

*Log cost: Natural-log-transformed average cost, in dollars, for a treatment episode of care (EoC) for the column's modality.*

*Recidivism: Rate of patient return for a second EoC after completing a first EoC for the column's modality.*

*Cost-effectiveness: By modality, the average cost of the first EoC plus the average cost of the first EoC times the recidivism rate. Measures average cost effectiveness by modality for a single EoC.*

For partner-relational problems, the model was significant,  $F(5, 2,349) = 23.46, p < .001$ . The mixed modality was significantly different than both individual and family therapy ( $p < .001$ ). Family and individual modalities were also significantly different from each other ( $p = .003$ ). Mean cost for the three modalities in EoC 1 for the treatment of relational problems was as follows: individual therapy (\$240.83), family therapy (\$279.64), and mixed mode (\$378.18). With regard to recidivism, the model was not significant,  $\chi^2 = 6.67, p = .08$ . Therefore, no statistical differences were found among the treatment modalities. Mean recidivism rates by the modalities for parent-child problems treated in EoC 1 were as follows: individual therapy (7.19%), family therapy (8.43%), and mixed mode (9.07%). Cost effectiveness was then calculated for each of the three therapy modalities. From most cost effective to least, the modalities ranked in this way: individual therapy (\$258.15), family therapy (\$303.21), and mixed

mode (\$412.48). Table 10 presents the average cost effectiveness for a single EoC by therapy modality for the treatment of partner-relational problems.

Table 10

*Cost, Recidivism and Estimated Cost Effectiveness by Modality in the First EoC for Partner-Relational Problems*

Modality	<i>n</i>	Cost	Log Cost	Recidivism	Cost effectiveness
Individual	1,001	\$240.83	\$179.47	7.19%	\$258.15
Family	902	\$279.64	\$194.42	8.43%	\$303.21
Mixed	452	\$378.18	\$200.34	9.07%	\$412.48

*Modality: Only individual therapy, only family therapy, or a combination of individual and family sessions.*

*Cost: Average cost, in dollars, for a treatment episode of care (EoC) for the column's modality (calculated by dollars paid to provider per session times total sessions in EoC).*

*Log cost: Natural-log-transformed average cost, in dollars, for a treatment episode of care (EoC) for the column's modality.*

*Recidivism: Rate of patient return for a second EoC after completing a first EoC for the column's modality.*

*Cost-effectiveness: By modality, the average cost of the first EoC plus the average cost of the first EoC times the recidivism rate. Measures average cost effectiveness by modality for a single EoC.*

*Question 4*

What are the cost differences in treating couple versus family problems with relational therapy? As stated earlier, a CPT code of 90847 for family/conjoint treatment combined with a partner-relational problem was assumed to be couples therapy for relational problems (N = 902), while the same CPT code combined with a parent-child relational problem was assumed to be a family treatment (*n* = 415).

As with other analyses predicting costs, patient age, profession type, and region were used as controls. An ordinary least squares regression revealed no significant average cost difference for couples versus family therapy treatments. The model ANOVA was significant, *F*

(4, 3,310) = 21.67,  $p < .001$ . However, differences in cost between family and couple therapy treatment were not significant. Although the differences were not statistically significant, family therapy (\$238.96) was, on average less costly than couple therapy (\$279.64).

### Discussion

From 2001 to 2006 a portion of CIGNA patients were diagnosed with a relationship problem, as the primary diagnosis, and treated by one of four provider types with individual therapy, family therapy, or a combination of modalities. This study is the first of its kind, examining cost effectiveness differences among treatment providers and modalities for DSM-IV relational V-codes. Although some past efforts have been made to answer the call of Pinsof and Wynne (1995a) for greater research emphasis on the cost effectiveness of family therapy, no studies have presented actual treatment cost data for relational problem treatment. Caldwell, Woolley, and Caldwell (2007) presented an estimation of the costs of marital therapy versus the costs of divorce and determined that marital therapy, if paid by government or insurance companies, is less costly than the costs related to divorce. However, the literature is still devoid of actual cost evaluations of relational therapy treatment, particularly in managed care. The present data begins to answer the questions: what does an episode of treatment for relational problems treated with couples therapy cost and how effective is couples therapy?

For this population, couples therapy for relational problems was relatively brief, with an average of only 5.36 sessions. The average cost for treatment was \$279.64. Recidivism for this population was only 8.43%, meaning that in the six-year period, of those who received a couples therapy treatment for a relational problem, 91.57% did not return for the treatment of any problems, including relational problems. This rate is less than the reported industry average of

15% for recidivism in managed care, which was averaged across a variety of disorders (Crane & Payne, in press).

Research questions in the present study focused on finding the most cost effective treatment modality and profession. Results may provide valuable information for policymakers or managed care officials to aid in determining the allocation of funding for treatment options for individuals with relationship problems. Especially important is the fact that the present study is the first to report the actual cost of couples therapy treatment for relational problems. The information may be useful for insurance plan managers who wish to estimate the cost of adding couples therapy treatment for relational problems to their list of provided services.

The first question research question in this study was, “Which of the therapy treatment modalities, individual, family, or mixed has the greatest success (defined by patient recidivism) in treating relational problems?” Analysis indicated that there were no significant differences in recidivism for the different modalities. This was the case for both parent-child problems and partner-relational problems. For providers in the CIGNA network, the use of an individual, family, or mixed mode of treatment did not influence the likelihood of patients returning for a second episode of treatment during the six-year period examined. On average, the vast majority of patients who received treatment for relational problems did not return for a second round of treatment. This result lends credence to the systems theories indicating that a change in one part of a system (including an individual) can have a system-wide impact (Hecker, Mims, & Boughner, 2003). Therefore, it is possible that treatment providers who are able to help a single individual to make changes in his or her relational functioning, may influence larger family system changes for the better. Other possibilities are explored in the limitations section of this paper.

The lack of statistical differences in this case may indicate less about modality differences than it does about provider treatment preferences. Providers who are comfortable treating relationship problems might be more likely to provide a V-code as a primary diagnosis. If this is the case, the treatment modality may be less important than provider training in the treatment of relational problems. In fact, Moore, Hamilton, Crane and Fawcett (in press) determined that those who have met specific training requirements for family therapy treatment may have better outcomes than other providers. In the case of relational treatment, licensed marriage and family therapists are required to receive much more relational therapy training and practice than any other nationally licensed mental health treatment providers (Crane, Shaw, Christenson, Larson, Harper, & Feinauer, in press). This theory is not specifically testable with the present data because only a single license for each provider is given. Therefore, there is no way to determine which providers, other than the licensed marriage and family therapists, have been trained in the treatment of relational problems, except that other providers' licenses do not require relational training (see Crane, et al., in press).

Future studies should examine how relational training, independent of license of provider type, influences the outcomes of the treatment of relational problems. Future studies might also determine whether training in relational problem treatment influences the likelihood that a provider would choose a relational diagnosis over another diagnosis, such as adjustment disorder. In the present data, MFTs are 69% more likely to use a relational diagnosis than the other professions.

The second research question was, "What is the cost effectiveness for each of the professions treating patients with relational problems?" This question was answered for each of four groupings in the data: a) patients who were treated for parent-child problems relationally, b)

patients who were treated for parent-child problems individually, c) patients who were treated for partner-relational problems relationally, and d) patients who were treated for partner-relational problems individually. These groupings allowed for an examination of possible differences in treatment costs and outcomes when relational diagnoses are treated with one or multiple people in the therapy room.

The most consistent finding across the four groups was that psychologists were almost universally most costly than the other professions, except in the case of partner-relational problems treated with a relational modality. In that case, psychologists were not significantly different than MFTs or MSWs, but they were more costly than counselors. In fact, in this case, counselors were significantly less costly than all of the other professions. For parent-child problems, counselors were significantly more costly than MFTs with individual treatment. This data suggests that for the treatment of relational problems, no profession is clearly ahead of the others across the board. Most cost differences appear to be insignificant. If any profession has an edge, it is professional counselors, the only profession that is significantly less costly than at least one other profession for each of the four patient groups presented. On the other hand, psychologists are significantly more costly than the other professions in nearly every case. These results are similar to those found in Crane and Payne (in press), in which psychologists were usually the most costly while counselors were usually the least costly

Statistical comparisons were not possible for cost effectiveness comparisons since cost effectiveness was derived from a formula rather than a statistical analysis of differences. In only one case, patients treated for partner relational problems with a relational modality, were the recidivism differences statistically significant. In this case, MFTs were the least likely to have recidivist patients. Counselors were more than eight times as likely to have patients return for

treatment after the first EoC compared to MFTs. MSWs were more than twelve times as likely and psychologists were more than nine times as likely to have patient recidivists as MFTs.

No profession stood out as being clearly the most cost effective when treating relational problems. This takes into account average treatment costs as well as average recidivism for each profession in each of the four patient groups presented. Many of the cost effectiveness differences were of little practical significance. Counselors, MFTs, and MSWs were the most cost effective for different groups, although counselors were most cost effective for two groups while MFTs and MSWs were the most cost effective for a single patient group. However, when counselors were not the most cost effective, they were not always the second most cost effective. For example, for patients with partner-relational problems treated individually, counselors were the least cost effective. Therefore counselors were not necessarily at the top of cost effectiveness in every situation. Although psychologists consistently provide more costly treatment in the first EoC for relational problems than the other professions, they were not always the least cost effective either. This reiterates the fact that depending on the client presenting problem and modality of therapy, almost any one profession was as likely to provide cost effective treatment as another. This is good news for patients struggling with parent-child or partner-relational problems as well as for providers wanting to pay for couples or family therapy as a service to those enrolled in their programs. The nationally recognized treatment providers are all providing fairly similarly cost-effective treatment in relatively few sessions for relational problems.

Although average cost differences among the professions were often relatively small or insignificant, it is important to note the differences among statistical significance, clinical significant, and economic significance. Results that are not statistically significant may still be economically significant because of the large numbers of patients being treated in the CIGNA

network. Small dollar differences across millions of patients each year add up to real dollar amount differences in treatment costs. At the same time, not all statistically significant results are clinically significant.

Results of the present study suggest that while some treatment providers may be more likely to provide a cost-effective treatment of relational problems, all of the licensed providers in the data are capable of providing relatively brief ( $M = 5.55$ ,  $SD = 5.53$ ) and cost effective ( $M = \$270.39$ ,  $SD = \$314.60$ ) treatment for relationship problems. These numbers represent the average number of sessions and dollars per treatment episode across all mental health professionals in the data. As previously stated, due to the nature of the data, standard deviations were larger than the means for total dollars per patient in the first EoC. Therefore, a log-transformed cost variable was created. The mean log-transformed cost for treatment of relational problems was \$194.42 and the standard deviation was \$91.84. This information may be of particular interest to managers of health insurance companies wishing to determine the cost impact of allowing plan participants to access therapy for family or couple relationship problems. In fact, of the 11 diagnosis categories in the data (see Crane & Payne, in press), relational diagnoses were the least costly to treat on average. Adding relational problem treatment as an option for plan participants may be a very important, cost-efficient, valuable service for plan managers to include. This is especially true considering two issues. First, as demonstrated in the literature, family relationship problems can be linked with serious mental and physical health issues. Second, those in CIGNA who were treated for a relational problem rarely returned for treatment of any other problem in the six-year period the data covered. This may be evidence that treating relational problems can have far-reaching effects on individual mental health and possibly health care costs. More research is needed in this area.

The third research question was, “What is the cost effectiveness of treating patients with relational problems for each of the treatment modalities, individual, family, and mixed therapy?” Patients were divided up into two groups: those who were treated for parent-child problems and those who were treated for partner-relational problems.

For parent-child problems, mixed mode was significantly more costly than “pure” family or individual modes. Family and individual were not significantly different from each other, which is in line with results from Bodden et al., 2008. There were no significant differences for recidivism among the modalities. Therefore, although individual therapy was more cost effective than family therapy, the difference was not significant.

For partner relational problems, individual therapy was the least costly, with differences in costs being significant, than family or mixed modes. Recidivism differences, again, were not significant. Individual seems to have somewhat of an edge over family therapy in cost effectiveness and both family and individual therapy have a strong cost effectiveness advantage over mixed mode.

Mixed mode’s lower cost effectiveness compared to the other two modes may represent confusion on the part of the provider as to the most effective method of treatment, meaning that a provider may not know whether individual or family therapy (or both) is indicated for a particular case, thus engaging in more therapy sessions. It might represent a more complex and difficult relational problem. Either of these might explain the higher overall treatment costs and recidivism rates. However, these issues are not testable with the present data. Future studies may examine therapists’ choices in using a mixed treatment mode based on presenting problem complexity or similar factors.

Of particular interest is the fact that the treatment of relational problems with an individual modality proved to be similarly cost effective or more cost effective than treatment of relational problems with a relational modality. Several possible explanations are available. Therapists working with individuals to resolve relationship-based problems may be affecting system-wide change through helping the individual patient make changes (Hecker, Mims, & Boughner, 2003). Hamilton, Moore, Crane, and Payne (in press) suggest that family therapy may be inherently more complex than individual therapy. This increased complexity may play out in a need for more therapy sessions on average to deal with relational problems than might be needed when working with one individual.

Second, in line with the “good enough” model of therapy termination (Barkham, et al., 2006), a single patient in treatment may decide that change has been good enough before a couple or entire family would decide the same. Thus, in a couple or family context, the same individual who would terminate therapy after few sessions when treated individually, might continue with more therapy sessions when treated with other members of the family simply because not everyone feels good enough yet. Simply put, a couple or family consensus on “good enough” might take longer than an individual decision.

The final question was, “Are there cost differences in treating couple versus family problems with relational therapy?” The present study demonstrated how researchers with access to managed-care data may use CPT codes and V-code diagnoses to determine whether providers were treating family or couple problems. A partner-relational V-code combined with the family/conjoint CPT code (90847) indicates couples therapy for relational problems while a parent-child relational V-code combined with the family/conjoint CPT code indicates family therapy for relational problems. The cost difference between couple and family treatments were

not significant, although on average, family therapy was approximately \$40 per patient less expensive than couples therapy. Across millions of patients, this \$40 difference, although not statistically significant, is of practical, monetary importance to the insurer.

Finally, although some health insurers might hesitate to cover the cost of couples therapy for relational problems (Kaslow & Patterson, 2006), the present data indicates that this type of treatment in managed care is relatively inexpensive, brief, and effective. The average patient who received couples therapy did so in about 5 sessions for around \$280. And nearly 92% of patients did not return after the first episode of care, for relationship problems or any other issue.

Although there is no information on whether individual plans within CIGNA had caps on numbers of sessions for couples therapy, it is clear that there are no across-the-board caps for couples therapy treatment since the number of sessions ranged from 2 to 105. Therefore, it is not reasonable to assume that the low cost and number of treatment sessions is necessarily due to artificial stopping points in treatment indicated by restrictions enforced by health care plans across the board in this data. It is also possible that a small number of plans within CIGNA reimbursed for couples therapy, while others did not. This information is not available in the data. However, the data does indicate that couples therapy can be provided as a service for enrollees at a low cost to health insurers. Other benefits from providing such services may include overall health care use reductions (Law & Crane, 2000; Crane & Christenson, 2008) for those who opt to receive couple or family treatment. Future longitudinal studies should examine the effect of family or couple interventions on overall individual mental health.

### *Limitations*

Some limitations to the present study exist. Due to the retrospective nature of data, it is not possible to know why patients did not return for treatment after the first EoC. Patients

defined as “successful” treatment cases were those who did not return for treatment after one episode and did not “reject” treatment by dropping out after a single session. However, it is not known specifically whether treatment was successful or whether patients did not return for other reasons, such as dissatisfaction with treatment. If the latter is true, higher recidivism could indicate worse treatment outcomes rather than better. Future prospective studies can address this issue by assessing the nature of termination and patient satisfaction with treatment after termination.

Additionally, amount or quality of training in therapy approaches for relational problems cannot be ascertained for any individual treatment provider in the data. Therefore, it is impossible to tell whether any group differences, or lack thereof, were related to training in relational therapies. It is known, however, that marriage and family therapists are required to have much more family therapy training and practice than the other professions (Crane, et al., in press). Finally, because therapy providers selected diagnoses for patients, it is possible that providers may have self-selected into usage of V-codes as a primary diagnosis based on treatment preferences or other factors. Because of this, there is a possibility of the presence of some sort of cohort effect among providers, which could explain some of the lack of statistical differences among groups in the data. It is also important to remember that providers, not CIGNA, provided the diagnoses for patients. Therefore, providers may have selected a relational diagnosis on the basis of comfort in treating such problems. This may explain the lack of significant differences among groupings.

Limitations aside, the data from the present study provide insight into the treatment of relational V-codes heretofore unknown. Although studies using true experimental design provide valuable information, they are not able to demonstrate costs and effectiveness in real-world

situations like a managed-care environment. Therefore, the dollar amount of treatment is a usable number that represents actual costs with all of the constraints and other managed-care considerations in place. For example, experimental design may dictate a double-blind selection of clients and therapists. However, within a managed-care setting, self-selection of patients into certain treatment providers may occur. The present study incorporates these types of non-experimental circumstances and provides cost and effectiveness information that an experimental design may miss. Ultimately, the present study demonstrates that the treatment of relationship problems is relatively inexpensive and effective in managed care. Some providers appear to be likely to provide more cost-effective treatments than others. The typical “dose” of psychotherapy for relational problems in the present study is fewer than six sessions with a recidivism rate of only about eight percent. Other studies, although not specifically targeted at relational problems, report higher required doses for clinically significant change. Anderson and Lambert (2001) report a median of 11 sessions required for clinically significant change. On the other hand, Baldwin, Berkeljon, Atkins, Olsen, and Nielsen (2009) found that smaller doses of therapy may actually be related to speedier client change. Their sample’s average number of sessions was just over six. The present data may lend support to the “good enough” level model of psychotherapy (Barkham, et al., 2006), in which clients terminate therapy when they have achieved an adequate level of change or functioning. It seems that, perhaps in contrast to randomized clinical trials, naturalistic therapy is likely to follow a good enough model. However, because it is unknown why clients terminated therapy treatment, this present study cannot truly verify this assumption.

Another result from the present study is that costs of individual and family treatments for relational problems are quite similar. Providers may use individual or family treatments for relational problems and have similar outcomes at a similar cost. However, combining individual

and family treatments for one case may significantly increase overall treatment costs. Family therapy may be somewhat less costly than couples therapy. This, however, may also be due to a relative increase in difficulty keeping entire families in treatment (Moore, Hamilton, Crane, & Payne, in press). Policymakers and managed care providers may use this data in the processes involved in determining whether to make treatment for relationship problems more widely available for individuals, couples, and families.

## References

- Abramowitz, J. S., & Foa, E. B. (2000). Does comorbid major depressive disorder influence outcome of exposure and response prevention for OCD? *Behavior Therapy, 31*, 795-800.
- Addis, M. E., & Mahalik, J. R. (2003). Men, masculinity, and the contexts of help seeking. *American Psychologist, 58*, 5-14.
- American Medical Association. (2006). *Current Procedural Terminology*, Chicago: Author.
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4<sup>th</sup> ed., text rev.). Washington, DC: Author.
- Anderson, E. M., & Lambert, M. J. (2001). A survival analysis of clinically significant change in outpatient psychotherapy. *Journal of Clinical Psychology, 57*, 875-888.
- Baldwin, S. A., Berkeljon, A., Atkins, D. C., Olsen, J. A., & Nielsen, S. L. (2009). Rates of change in naturalistic psychotherapy: Contrasting dose-effect and good-enough level models of change. *Journal of Consulting and Clinical Psychology, 77*, 203-211.
- Barkham, M., Connell, J., Stiles, W. B., Miles, J. N. V., Margison, F., Evans, C., & Mellor-Clark, J. (2006). Dose-effect relations and responsive regulation of treatment duration: The good enough level. *Journal of Consulting and Clinical Psychology, 74*, 160-167.
- Barrett, A. E. (2000). Marital trajectories and mental health. *Journal of Health and Social Behavior, 41*, 451-464.
- Beach, S. R. H., Smith, D. A., & Fincham, F. D. (1994). Marital interventions for depression: Empirical foundations and future prospects. *Applied Preventative Psychology, 3*, 233-250.
- Bodden, D. H. M., Dirksen, C. D., Bogels, S. M., Nauta, M. H., Haan, E. D., Ringrose, J., . . . Appelboom-Geerts, K. (2008). Costs and cost-effectiveness of family CBT versus

- individual CBT in clinically anxious children. *Clinical Child Psychology and Psychiatry*, *13*, 543-564.
- Booth, A., & Johnson, D. R. (1994). Declining health and marital quality. *Journal of Marriage and the Family*, *56*, 218-223.
- Brown, T. A., Antony, M. M., & Barlow, D. H. (1995). Diagnostic comorbidity in panic disorder: Effect on treatment outcome and course of comorbid diagnoses following treatment. *Journal of Consulting and Clinical Psychology*, *63*, 408-418.
- Burns, L., Teesson, M., & O'Neill, K. (2005). The impact of comorbid anxiety and depression on alcohol treatment outcomes. *Addiction*, *100*, 787-796.
- Caldwell, B. E., Woolley, S. R., & Caldwell, C. J. (2007). Preliminary estimates of cost-effectiveness for marital therapy. *Journal of Marital and Family Therapy*, *33*, 392-405.
- Cano, A., Gillis, M., Heinz, W., Geisser, M., & Foran, H. (2004). Marital functioning, chronic pain, and psychological distress. *Pain*, *107*, 99-106.
- Crane, D. R. (2008). The cost-effectiveness of family therapy: A summary and progress report. *Journal of Family Therapy*, *30*, 399-410.
- Crane, D. R., & Christenson, J. D. (2008). The medical offset effect: Patterns in outpatient services reduction for high utilizers of health care. *Contemporary Family Therapy*, *30*, 127-138.
- Crane, D. R., & Payne, S. H. (in press). Individual and family therapy in managed care: Comparing the costs of treatments by the mental health professions. *Journal of Marital and Family Therapy*.
- Crane, D. R., Shaw A. L., Christenson, J. D., Larson, J. H., Harper, J. M., & Feinauer, L. L. (in press). Comparison of the family therapy educational and experience requirements for

- licensure or certification in six mental health disciplines. *The American Journal of Family Therapy*.
- Dehle, C., Larsen, D., & Landers, J. E. (2001). Social support in marriage. *The American Journal of Family Therapy*, 29, 307-324.
- Dehle, C., & Weiss, R. L. (1998). Sex differences in prospective associations between marital quality and depressed mood. *Journal of Marriage and the Family*, 60, 1002-1011.
- Dehle, C., & Weiss, R. L. (2002). Associations between anxiety and marital adjustment. *The Journal of Psychology*, 136, 328-338.
- Denton, W. H. (1989). DSM-III-R and the family therapist: Ethical considerations. *Journal of Marital and Family Therapy*, 15, 367-377.
- Doherty, W. J., & Simmons, D. S. (1996). Clinical practice patterns of marriage and family therapists: A national survey of therapists and their clients. *Journal of Marital and Family Therapy*, 22, 9-25.
- Essex, M. J., Klein, M. H., Cho, E., & Kraemer, H. C. (2003). Exposure to maternal depression and marital conflict: Gender differences in children's later mental health symptoms. *Journal of the American Academy of Child and Adolescent Psychiatry*, 42, 728-737.
- Fals-Stewart, W., Yates, B. T., & Klostermann, K. (2005). Assessing the costs, benefits, cost-benefit ratio, and cost-effectiveness of marital and family treatments: Why we should and how we can. *Journal of Family Psychology*, 19, 28-39.
- Fincham, F. D., Beach, S. R. H., Harold, G. T., & Osborne, L. N. (1997). Marital satisfaction and depression: Different causal relationships for men and women? *Psychological Science*, 8, 351-357.

- Flouri, E., & Buchanan, A. (2003). The role of father involvement in children's later mental health. *Journal of Adolescence, 26*, 63-78.
- Goldfield, G. S., Epstein, L. H., Kilanoswki, C. K., Paluch, R. A., & Kogut-Bossler, B. (2001). Cost-effectiveness of group and mixed family-based treatment for childhood obesity. *International Journal of Obesity, 25*, 1843-1849.
- Haby, M. M., Tonge, B., Littlefield, L., Carter, R., & Vos, T. (2004). Cost-effectiveness of cognitive behavioural therapy and selective serotonin reuptake inhibitors for major depression in children and adolescents. *Australian and New Zealand Journal of Psychiatry, 38*, 579-591.
- Hamilton, S., Moore, A. M., Crane, D. R., & Payne, S. H. (in press). Psychotherapy dropouts: Differences by modality, license, and DSM-IV diagnosis. *Journal of Marital and Family Therapy*.
- Hecker, L. L., Mims, G. A., & Boughner, S. R. (2003). General systems theory, cybernetics, and family therapy. In L. L. Hecker, & J. L. Wetchler (Eds.), *An introduction to marriage and family therapy* (pp. 63-93). New York: The Haworth Clinical Practice Press.
- Henggeler, S. W. (1999). Multisystemic therapy: An overview of clinical procedures, outcomes, and policy implications. *Child Psychology and Psychiatry Review, 4*, 2-10.
- Holder, H., Longabaugh, R., Miller, W. R., & Rubonis, A. V. (1991). The cost effectiveness of treatment for alcoholism: A first approximation. *Journal of Studies on Alcohol, 52*, 517-540.
- Gove, W. R. (1972). The relationship between sex roles, marital status, and mental illness. *Social Forces, 51*, 33-44.

- Kaslow, F. W. (1996). History, rationale, and philosophic overview of issues and assumptions. In F. W. Kaslow (Ed.), *Handbook of relational diagnosis and dysfunctional family patterns* (pp. 3-18). New York: Wiley.
- Kaslow, F., & Patterson, T. (2006). Relational diagnosis: A retrospective synopsis. *Contemporary Family Therapy, 28*, 269-284.
- Katz, L. F., & Gottman, J. M. (1993). Patterns of marital conflict predict children's internalizing and externalizing behaviors. *Developmental Psychology, 29*, 940-950.
- Keitner, G. I., & Miller, I. W. (1990). Family functioning and major depression: An overview. *The American Journal of Psychiatry, 147*, 1128-1136.
- Kiecolt-Glaser, J. K., Glaser, R., Gravenstein, S., Malarkey, W. B., & Sheridan, J. (1996). Chronic stress alters the immune response to influenza virus vaccine in older adults. *Proceedings of the National Academy of Sciences, USA, 93*, 3043-3047.
- Kiecolt-Glaser, J. K., Kennedy, S., Malkoff, S., Fisher, L., Speicher, C. E., & Glaser, R. (1988). Marital discord and immunity in males. *Psychosomatic Medicine, 50*, 213-229.
- Kiecolt-Glaser, J. K., & Newton, T. L. (2001). Marriage and health: His and hers. *Psychological Bulletin, 127*, 472-503.
- Krupnick, J. L., & Pincus, H. A. (1992). The cost-effectiveness of psychotherapy: A plan for research. *The American Journal of Psychiatry, 149*, 1295-1305.
- Law, D. D., & Crane, D. R. (2000). The influence of marital and family therapy on health care utilization in a health-maintenance organization. *Journal of Marital and Family Therapy, 3*, 281-291.

- Lebow, J., & Gordon, K. C. (2006). You cannot choose what is not on the menu—obstacles to and reasons for the inclusion of relational processes in the DSM-V: Comment on the special section. *Journal of Family Psychology, 20*, 432-437.
- Leff, J., Vearnals, S., Brewin, C. R., Wolff, G., Alexander, B., Asen, E., . . . Everitt, B. (2000). Randomised controlled trial of antidepressants v. couple therapy in the treatment and maintenance of people with depression living with a partner: Clinical outcome and costs. *British Journal of Psychiatry, 177*, 95-100.
- Levenson, R. W., Carstensen, L. L. & Gottman, J. M. (1993). Long-term marriage: Age, gender, and satisfaction. *Psychology and Aging, 8*, 301-313.
- Liang, W., Shediak-Rizkallah, M. C., Celentano, D. D., & Rohde, C. (1999). A population-based study of age and gender differences in patterns of health-related behaviors. *American Journal of Preventative Medicine, 17*, 8-17.
- Mackenzie, C. S., Gekoski, W. L., & Knox, V. J. (2006). Age, gender, and the underutilization of mental health services: The influence of help-seeking attitudes. *Aging & Mental Health, 10*, 574-582.
- Mastekaasa, A. (1992). Marriage and psychological well-being: Some evidence on selection into marriage. *Journal of Marriage and the Family, 54*, 901-911.
- Moore, A. M., Hamilton, S., Crane, D. R., & Fawcett, D. (in press). The influence of professional license type on the outcome of family therapy. *American Journal of Family Therapy*.
- Mongan, J. J., Ferris, T. G., & Lee, T. H. (2008). *The New England Journal of Medicine, 358(14)*, 1509-1514.

- Nomura, Y., Wickramaratne, P. J., Warner, V., Mufson, L., & Weissman, M. M. (2002). Family discord, parental depression, and psychopathology in offspring: Ten-year follow-up. *Journal of the American Academy of Child & Adolescent Psychiatry, 41*, 402-409.
- O'Farrell, T. J., Choquette, K. A., Cutter, H. S. G., Brown, E., Bayog, R., McCourt, W., . . . Deneault, P. (1996). Cost-benefit and cost-effectiveness analyses of behavioral marital therapy with and without relapse prevention sessions for alcoholics and their spouses. *Behavior Therapy, 27*, 7-24.
- Orvaschel, H., Walsh-Allis, G., & Ye, W. (1988). Psychopathology in children of parents with recurrent depression. *Journal of Abnormal Child Psychology, 16*, 17-28.
- Pinsof, W. M., & Wynne, L. C. (1995a). The effectiveness and efficacy of marital and family therapy: Introduction to the special issue. *Journal of Marital and Family Therapy, 21*, 341-343.
- Pinsof, W. M., & Wynne, L. C. (1995b). The efficacy of marital and family therapy: An empirical overview, conclusions, and recommendations. *Journal of Marital and Family Therapy, 21*, 585-613.
- Prigerson, H. G., Maciejewski, P. K., & Rosenheck, R. A. (1999). The effects of marital dissolution and marital quality on health and health service use among women. *Medical Care, 37*, 858-873.
- Regier, D. A., Boyd, J. H., Burke, J. D., Rae, D. S., Myers, J. K., Robins, L. N., et al. (1988). One-month prevalence of mental disorders in the United States. Based on five Epidemiologic Catchment Area sites. *Archives of General Psychiatry, 45*, 977-986.

- Repetti, R. L., Taylor, S. E., & Seeman, T. E. (2002). Risky families: Family social environments and the mental and physical health of offspring. *Psychological Bulletin*, *128*, 330-366.
- Ross, C. E., Mirowsky, J., & Goldsteen, K. (1990). The impact of family on health: The decade in review. *Journal of Marriage and the Family*, *52*, 1059-1078.
- Sandberg, J. G., Miller, R. B., Harper, J. H., Robila, M., & Davey, A. (in press). The relationship among marital quality, health, and health care utilization in older couples. *Journal of Health Psychology*.
- Schmidt, S. E., Liddle, H. A., & Dakof, G. A. (1996). Changes in parenting practices and adolescent drug abuse during multidimensional family therapy. *Journal of Family Psychology*, *10*, 12-27.
- Shaw, D. S., Keenan, K., Vondra, J. I., Delliquadri, E., & Giovannelli, J. (1997). Antecedents of preschool children's internalizing problems: A longitudinal study of low-income families. *Journal of the American Academy of Child Psychiatry*, *36*, 1760-1767.
- Simmons, D. S., & Doherty, W. J. (1995). Defining who we are and what we do: Clinical practice patterns of marriage and family therapists in Minnesota. *Journal of Marital and Family Therapy*, *21*, 3-16.
- Simola, S. K., Parker, K. C. H., Froese, A. P. (1999). Relational v-code conditions in a child and adolescent population do warrant treatment. *Journal of Marital and Family Therapy*, *25*, 225-236.
- Simon, R. W. (2002). Revisiting the relationships among gender, marital status, and mental health. *The American Journal of Sociology*, *107*, 1065-1096.

Simon, R. W., & Marcussen, K. (1999). Marital transitions, marital beliefs, and mental health. *Journal of Health and Social Behavior, 40*, 111-125.

Siqueland, L., Kendall, P. C., & Steinberg, L. (1996). Anxiety in children: Perceived family environments and observed family interaction. *Journal of Clinical Child Psychology, 25*, 225-237.

Umberson, D., Williams, K., Powers, D. A., Liu, H., & Needham, B. (2006). You make me sick: Marital quality and health over the life course. *Journal of Health and Social Behavior, 47*, 1-16.

Wells, K. B., & Sturm, R. (1995). Care for depression in a changing environment. *Health Affairs, 14*, 78-89.

Whiting, J. B., & Crane, D. R. (2003). Distress and divorce: Establishing cutoff scores for the marital status inventory. *Contemporary Family Therapy, 25*, 195-205.

Williams, K., & Umberson, D. (2004). Marital status, marital transitions, and health: A gendered life course perspective. *Journal of Health and Social Behavior, 45*, 81-98.