



# **Is Marriage Good for Your Health? The Influential Role of Marital Quality and Life Events on Individual-Level Health and Well-Being**

by Sarah M. Hertzog

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IS MARRIAGE GOOD FOR YOUR HEALTH? THE INFLUENTIAL ROLE OF  
MARITAL QUALITY AND LIFE EVENTS ON INDIVIDUAL-LEVEL  
HEALTH AND WELL-BEING

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IS MARRIAGE GOOD FOR YOUR HEALTH? THE INFLUENTIAL ROLE OF  
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Over a century of research suggests that marriage is good for one's health. Specifically, individuals who are married experience, on average, longer and healthier lives than their unmarried counterparts. However, these aggregate findings mask significant differences within each of these groups. Utilizing data from the Midlife Development in the United States (MIDUS I and II; N = 1,805) dataset, the current project addresses three research questions: 1) What are the long-term health consequences of low-quality marital relationships? 2) How does the accumulation of life events influence the health and well-being of individuals who experienced a divorce? and 3) What types of social support – if any – effectively buffer the negative impact of a low-quality marriage on individual-level health and well-being?

Several key findings emerged from the three main research questions. First, individuals who remain in a long-term, low-quality marriage will report significantly lower levels of well-being than individuals in a high-quality marriage. Second, the accumulation of life events plays an important role in the relationship between exposure to events and health and well-being. More specifically, individuals who are exposed to parental divorce during childhood experience better health and well-being following their own divorce than individuals whose parents were continually married.

Importantly, this suggests that the mere accumulation of stressors over the life course does not necessarily equate to negative health outcomes. Rather, the type of stressors an individual is exposed to is key to understanding life course health and well-being. Finally, the social support mechanism that operates to ameliorate the health consequences of negative marital interactions is highly specific. Further research is necessary to identify which types of support (e.g. kin, friend, job) improve specific aspects of well-being (e.g. happiness, depression, anxiety).

## BIOGRAPHICAL SKETCH

Sarah Hertzog earned a Ph.D. in Developmental Psychology from Cornell University in 2010, after receiving a B.A. and M.A. in Child Development from Tufts University in 2004. Her research focuses on the relationship between exposure to stressors and individual level health and well-being. Upon leaving Cornell, she will assume an NIMH postdoctoral fellowship at the Institute for Health, Health Care Policy, and Aging Research at Rutgers University.

To those closest to my heart,  
Mom, Dad, Elizabeth, and  
the entire ITAC family

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## CHAPTER 1

### **Introduction**

The marital relationship is still one of the most significant social relationships in which individuals engage in the United States. Despite a decrease in the percent of individuals who formally wed in the United States, most individuals do marry at some point in their lives (US Census Bureau, 2009). For those who marry, there appears to be a health benefit to the union. Over the past 150 years, researchers have consistently reported lower mortality rates for married individuals as compared to their unmarried counterparts (never married, separated/divorced, or widowed), with men benefiting more from marriage than women (Farr, 1858; Gardner & Oswald, 2004; Gove, 1973, Johnson, Blacklund, Sorlie, & Loveless, 2000; Lillard & Panis, 1996; Waite, 1995). More recently however, researchers have qualified this finding. They now argue that the purported health benefits of marriage are conferred only in marriages that are high quality. This argument is supported by empirical evidence that low-quality marriages can be detrimental to individual-level health and well-being, and in some cases, more so than if an individual were to exit the marriage (Hawkins & Booth, 2005). Based on these recent findings, it is clear that marital quality plays an important role in the maintenance and promotion of health and well-being in the United States, perhaps more so than marital status alone. This introduction chapter takes a closer look at the nature of marital quality and its relationship to health by focusing on six areas of research: 1) how marital quality is measured, 2) micro- and macro-level factors that influence marital quality, 3) the association between marital quality and health, 4) theoretical frameworks which may explain the relationship between marital quality

and health, 5) potential moderators of the relationship between marital quality and health, and finally, 6) the goals of the current project.

### **How is Marital Quality Measured?**

Despite the fact that the term *marital quality* is widely-recognized and readily understood, it has been operationalized a number of different ways in recent research studies, depending in part on the research goals of the particular study. However, most studies utilize multi-item scales that are intended to assess multiple dimensions of the marital relationship (e.g. support, disagreements, instability, cohesion, intimacy, satisfaction). A few, named scales are commonly used (e.g. the Marital Adjustment Test and the Dyadic Adjustment Scales), but many studies also use a combination of questions or scales that best address the research questions in that particular study. The most commonly used scales are discussed in more detail below; there are additional scales in use, but these appear most frequently in the literature.

Previous research has emphasized the multi-dimensional nature of marital quality and it follows that assessment of marital quality should reflect this complexity (Glenn, 1990). Two of the most common scales include the Marital Adjustment Test (MAT; Locke & Wallace, 1959) and the Dyadic Adjustment Scale (DAS; Spanier, 1976) (DeLongis, Capreo, Holtzman, O'Brien, & Campbell, 2004; Holt-Lunstad, Birmingham, & Jones, 2008; Kiecolt-Glaser et al., 1987; Malarkey, Kiecolt-Glaser, Pearl & Glaser, 1994; Troxel, Matthews, Gallo, & Kuller, 2005). The short-version of the MAT includes 15 items, most of which address the level of agreement between spouses on a range of topics from finances to dealing with in-laws (Locke & Wallace, 1959). Additional questions ask about the extent to which the individual can confide

in his/her spouse and whether or not the couple engages in recreational activities together (Locke & Wallace, 1959). Despite the extended length of time that has passed since this scale was developed, the short version of the scale has excellent reliability ( $\alpha = .90$ ) and remains a good indicator of marital quality. The other commonly utilized measure of marital quality is the DAS.

The DAS was designed to measure four constructs: (a) consensus on matters of importance to marital functioning, (b) dyadic satisfaction, (c) dyadic cohesion, and (d) affectional expression (Spanier, 1976). Despite the fact that later research suggests that two of the subscales (Dyadic Satisfaction and Affectional Expression) might be problematic, the 32-item scale reliably identifies distressed from nondistressed samples (Busby, Christensen, Crane & Larson, 1995; Crane, Allgood, Larson, & Griffin, 1990). The MAT and DAS are well-established measures of marital quality, but there are additional measures in use in recent studies as well.

A second type of multi-dimensional assessment of marital quality specifically addresses positive (or “supportive”) interactions and negative interactions between spouses using two separate scales (Schuster, Kessler, & Aseltine, 1990). Bradbury, Fincham, and Beach (2000) argue for the necessity of this approach given that positive and negative aspects of marital quality have different correlates. In their 1990 study, Schuster et al. utilize these types of scales to measure social interactions with spouses and friends. The spousal support scale these authors use includes questions such as “How much [does] your spouse understand the way you feel about things?” and “How much [can] you open up to your spouse about things that are really important to you?”. The negative interaction questions scale includes questions such as “How much

tensions [is there] between you and your spouse” and “How often [does] your spouse say cruel or angry things during a disagreement?” (Schuster et al., 1990, p. 427). A version of these scales was also utilized to measure spouse/partner support and strain in the 1995 MacArthur Network Study on Midlife Development in the United States (Brim, Ryff, & Kessler, 2004; Grzywacz & Marks, 2000; Whalen & Lachman, 2000). These scales have good reliability, with alpha scores of .90 for the support scale and .87 for the strain scale in the MIDUS study. Further, in their study on stress and marital quality, Umberson, Williams, Powers, Liu, and Needham (2005) derive their measure of marital quality using factor analyses and find, consistent with other recent research, that the items load onto two factors that can be identified as *positive marital experience* and *negative marital experience*. Therefore, despite the varied nature of marital quality scales, the vast majority of these scales attempt to assess the multidimensional constructs related to positive or negative interactions that exist in all marital relationships.

### **What Influences Marital Quality?**

There are a number of micro- and macro-level factors that are believed to influence the quality of an individual’s marital relationship. In a review of 115 studies on marital quality, Karney and Bradbury (1995) identified 22 wife-related, 18 husband-related, and 24 couple-related variables that are associated with marital quality. Taking into account Karney and Bradbury’s (1995) assessment, as well as the decade and half of literature on marital quality published since their review, the most commonly studied predictors of marital quality include: age, sex, personality characteristics, level of education, income, length of marriage, the number of children

living at home, having a youngest child in preschool, genetics, parent's level of marital discord, and parental divorce (Karney & Bradbury, 1995; Proulx, Helms, & Buehler, 2007). Applying a developmental systems framework (Bronfenbrenner, 1979; 1995; Ford & Lerner, 1992), these factors should be studied in concert with - rather than independent of - each other. This section highlights the empirical evidence for these relationships. Despite the fact that none of these studies have been able to account for all of these factors, a comprehensive examination of how they independently – or in concert with one or two other factors – influence marital quality helps to create a better sense of how they may operate on a larger scale.

There are several demographic characteristics that are associated with marital quality. The six characteristics utilized in the current project are: age, sex, level of education, income, the number of children living at home, and having a youngest child in preschool. Age, as it relates to marital quality, is typically measured in one of two ways: a continuous variable or as a birth cohort. Overall, increased age at assessment is associated with higher levels of marital quality, although the unique contribution of age has yet to be disentangled from other variables such as length of marriage (Karney & Bradbury, 1995). The evidence for sex is similarly contingent. The sex of an individual is not believed to have an independent effect on marital quality however, sex is associated with measures commonly utilized in the study of marital quality, including perceived support and well-being, and is thus essential to include in all analyses (Proulx et al., 2007). For example, the relationship between marital quality and well-being is stronger for women than for men (Proulx et al., 2007). An individual's income is believed to be positively associated with marital quality,

however the strongest evidence is for the relationship between receipt of public assistance and lower levels of marital quality, rather than a linear relationship between education and marital quality (Karney & Bradbury, 1995). Much like income, the relationship between level of education and marital quality does not follow a linear pattern. Instead, individuals with less than a high school education are more likely to report lower levels of marital quality than individuals with a high school education or more (Karney & Bradbury, 2005).

Finally, two characteristics of family composition are often found to be associated with marital quality: the number of children living at home and having a youngest child in preschool. In general, marital quality is expected to decline over the first ten years of marriage. However, this decline is steeper for couples with biological children living at home than for couples without children (Kurdek, 1999). Having children at home is thought to decrease marital quality in part because of time and work constraints (Spain & Bianchi, 1996). Similar to the research on the effects of an individual's sex on marital quality, research on the effects of the age of the youngest child at home suggests that rather than having a direct effect on marital quality, the age of the youngest child is more likely to be associated with outcomes such as individual well-being (Kurdek, 1990). Finally, the amount of time an individual has been married is associated with his or her assessment of marital quality. Broadly speaking, marital quality declines over time; significant individual variation exists however, regarding the level of marital quality at the beginning of the relationship (Kurdek, 1999; Umberson, Williams, Powers, Chen, & Campbell, 2005).



In addition to these demographic characteristics, parents can influence the marital quality of their adult offspring in three ways: genetics, parental marital discord and parental divorce. Studies on marital quality and social support suggest that while nonshared environmental factors account for the majority of the variance in well-being and depressive symptoms, genetic effects also contributed significantly to the variance (Kessler, Kendler, Heath, Neale, & Eaves, 1992; Spotts et al., 2004; 2005). The authors are quick to remind audiences however, that genetic effects are not immutable; rather they are influenced by a variety of factors across the life course, such as spouse/partner characteristics (Spotts et al., 2004; 2005). The strongest evidence for the influence of parental influence on offspring marital quality is reported in studies on parental marital discord.

Using data from a seventeen-year study on marriage instability, Amato and Booth (2001) found that “offspring’s recollections of parental discord...mediated about half of the association between parents’ reports of marital discord and offspring’s reports of discord in their own marriages” (p. 627). The characteristics of discord that predicted marital quality in the Amato and Booth (2001) study included: jealousy, getting angry quickly, being critical, and not talking to the spouse. These findings are supported by evidence presented in a review of children’s adjustment to divorce, in which the authors cite a number of studies on the relationship between marital discord and a range of negative outcomes in children (Hetherington, Bridges, & Insabella, 1998). Finally, parental divorce is sometimes used to predict marital quality in offspring, wherein parental divorce is often found to be associated with lower marital quality (Amato & Keith, 1991). The conclusions that can be drawn

from this association however are limited. The characteristics of parental divorce can vary greatly between couples, thus marital discord is likely a better predictor of offspring marital quality.

### **Association between Marital Quality and Health**

Beyond the issue of divorce and its effects on offspring, the most convincing reason to study marital quality is its potential effects on individual-level psychological and physical health. Marital quality is associated with a number of psychological outcomes including happiness (Hawkins & Booth, 2005), self-worth (Spotts et al., 2005), life satisfaction (Hawkins & Booth, 2005), self-esteem (Voss, Markiewicz, & Doyle, 1999), negative affect (Karney, Bradbury, Fincham, & Sullivan, 1994), psychological distress (Barnett, Raudenbush, Brennan, & Marshall, 1995), depressive symptoms (Fincham, Beach, Harold, & Osborne, 1997), and depression (Whisman & Bruce, 1999), as well as negative health behaviors such as alcohol use (Whisman, 2007). Studies on the relationship between marital quality and physical health suggest that marital quality influences the number of physical health conditions a person experiences (Wickrama, Lorenz, Conger, and Elder, 1997), recurrence of myocardial infarction (Orth-Gomer et al., 2000), Metabolic Syndrome (Troxel, Matthews, Gallo, & Kuller, 2005) and mortality (Eaker, Sullivan, Kelly-Hayes, D'Agostino, & Benjamin, 2007). The scope of the evidence is thus overwhelming for the influence of marital quality on mental and physical health and underscores the importance for further research on the topic.

## **Underlying Mechanisms and Explanatory Frameworks**

What accounts for the associations between marital quality and mental and physical health? Several different theories have been proposed, but the one common theme across all of these theories is *stress*. Specifically, researchers are most concerned with three areas of research on stress and its impact on health and well-being: vulnerability, exposure, and consequences.

The research on an individual's vulnerability to low marital quality is the most limited of the three areas of stress research. The most influential research on this topic comes from two fields, genetics and psychology. Studies on marital quality amongst married female twins in the Swedish Twin Registry find that genetic effects do account for a significant proportion of the variance in well-being and depression (Spotts et al., 2004; 2005; Kessler et al., 1992), however unshared environmental effects account for the majority of the variation. Another source of vulnerability can be found in research on personality characteristics. Specifically, neuroticism has been linked to low marital quality in a number of different studies (Davila, Karney, Hall, & Bradbury, 2003; Karney & Bradbury, 1997; Newtown & Kiecolt-Glaser, 1995). Neuroticism reflects the tendency to experience negative affective states, including moodiness, which has been linked to both marital quality and the intergenerational transmission of marital quality (Amato & Booth, 2001; Watson & Clark, 1984). Importantly, individuals who score high on measures of neuroticism also appear to be more reactive to stress, whereby the strength of the relationship between the stressor and negative outcomes is stronger for those high in neuroticism than those low in neuroticism (Davila et al., 2003; Bolger & Schilling, 1991; Bolger & Zuckerman,

1995). This finding is particularly relevant for individuals who may report high levels of neuroticism in a low-quality marital relationship that is characterized by a high level of negative interactions (including discord) and a low level of support. A third, more indirect source of vulnerability is parental marital conflict. Amato and Booth (2001) effectively demonstrated a strong relationship between parental marital conflict and offspring marital conflict, but stopped short of explaining how this transmission may impact health and well-being. It is reasonable to hypothesize however, using research on marital conflict, that this transmission would also influence key indicators of health and well-being (Kiecolt-Glaser, 2001).

A second area of research involves the exposure to stressors over the life course. It is now common for researchers who study marital quality and health to include the number and timing of stressful life events or difficulties an individual has been exposed to across the life course in their analyses. According to the life course perspective, each individual experiences a unique set of events or difficulties across the life course, which may vary in terms of number, severity, duration, and timing (Brown & Harris, 1978; Turner, Wheaton, & Lloyd, 1995; Wheaton & Gotlib, 1997; Wheaton & Clarke, 2003). In studies of marital quality, the timing of the life events appears to be particularly important. Specifically, individuals who are exposed to life events in childhood (e.g. death of a parent, parental divorce, parental marital problems, economic hardship) are more “reactive” to fluctuations in marital quality in adulthood than individuals who do not report exposure to childhood stressors (Umberson et al., 2005). Apart from the timing of exposure, the number of life events or difficulties is frequently accounted for in studies on marital quality and health. Researchers are

interested in the number of exposures because recent studies on allostatic load suggests that repeated exposure to stressors may lead to long-term dysregulation of physiological systems and ultimately, increase an individual's risk for morbidity and mortality (McEwen, 1998; Seeman, Singer, Rowe, Horowitz, & McEwen, 1997; Singer & Ryff, 1999). These types of studies however, are better represented in the third and final area of research on stress and health in the context of marital quality: the *consequences* of exposure to stressors.

In studies that focus on the consequences of exposure to stressors, investigators explain the relationship between low marital quality and health by demonstrating the connection between negative marital characteristics (e.g. conflict) and activation of the hypothalamic-pituitary-adrenal (HPA) axis (see Kiecolt-Glaser & Newton, 2001 for a review). Activation of the HPA axis is part of an individual's normal stress response; it causes a number of biological changes, including an increase in hormones and blood flow, which can facilitate the resolution of the environmental challenge, while simultaneously placing other, less immediately important biological processes on hold (e.g. digestion) (Sapolsky, 2004). This adaptive response operates best when it is rapidly activated and quickly terminated. The response can become maladaptive however, under four different conditions: frequent activation, lack of adaptation to repeated stressors, a prolonged response, and an inadequate response (Juster, McEwen, & Lupien, 2009). In the long-term, these maladaptive responses result in an increased risk for morbidity and mortality (McEwen, 1998). For individuals in a high-conflict relationship, frequent activation of the HPA axis is the most likely

mechanisms through which exposure to a stressor (i.e. interpersonal conflict) can lead to long-term negative health outcomes.

Kiecolt-Glaser and her colleagues have been instrumental in this area of research. Focusing primarily on hostility and marital conflict, Kiecolt-Glaser's research team has been able to demonstrate how marriages that are high in hostility and conflict influence three physiological systems. Specifically, hostility and marital conflict can compromise cardiovascular and endocrine function and decrease immune function (e.g. Kiecolt-Glaser et al., 1987; Kiecolt-Glaser et al., 2005; Kiecolt-Glaser & Newton, 2001). These findings have been replicated in other studies as well.

In his 1998 article on allostatic load, McEwen suggested that the cardiovascular system may be particularly sensitive to exposure to stressors and based on recent findings, there is evidence to support this assertion. Using data from the Stockholm Female Coronary Risk Study, Orth-Gomer et al. (2000) found that among women with a history of myocardial infarction or unstable angina pectoris, marital stress is associated with a 2.9-fold increase in recurrent cardiovascular events. This relationship between marital quality and cardiovascular events in women can be explained by laboratory studies which have found that marital discord is associated with increased blood pressure in women, but not necessarily men (Ewart, Taylor, Kraemer, and Agras, 1991). Similarly, Eaker et al. (2007) found that "women who 'self-silenced' during conflict with their spouse, compared with women who did not, had four times the risk of dying" in the Framingham Offspring Study (p. 509). Therefore, the way in which individuals, particularly women, deal with marital

conflict may have important implications for future cardiovascular health, but there are also implications for endocrine and immune function.

Studies have repeatedly shown that marital conflict is associated with increased glucocorticoid response in laboratory experiments (Kiecolt-Glaser et al., 1996; Malarkey, et al., 1994). Glucocorticoids play an important role in the regulation of the metabolic system, and long-term dysregulation can have serious implications for health and well-being. One potential long-term consequence for the metabolic system is metabolic syndrome. As part of the Pittsburgh Health Women Study, over four hundred middle-aged women completed survey measures of marital satisfaction and were assessed for metabolic syndrome at baseline and three years later (Troxel et al., 2005). The investigators found that women who reported marital dissatisfaction at baseline had significantly greater odds of being diagnosed with metabolic syndrome three years later than women who reported marital satisfaction (Troxel et al., 2005).

There is also substantial evidence that stress in general, and marital conflict more specifically, is associated with immune function. Again studying the relationship between marital conflict and physiological responses, Kiecolt-Glaser et al. (1993) found that hostile behavior between newlyweds is associated with increased antibody titers to latent Epstein-Barr virus and declines in natural killer cell lysis. Kiecolt-Glaser and her colleagues also found decreased pro-inflammatory response and slower wound healing in couples following marital conflict as compared to couples who engaged in supportive interactions (Kiecolt-Glaser et al., 2005). Given the wealth of findings on the relationship between marital quality and physiological

dysregulation, it is clear that a low quality marital relationship can have important, long-term consequences on health.

### **Potential Moderators**

After a review of the literature on the relationship between marital quality and mental and physical health, the next logical question is whether or not factors exist which moderate this important relationship. One factor in particular that has received a lot of attention in the literature as a potential moderator of this relationship is *social support*. Social support as described by Cohen (2004), “refers to a social network’s provision of psychological and material resources *intended to benefit an individual’s ability to cope with stress*” (p. 676, italics in original). Numerous research studies have demonstrated the beneficial effects of social support on both mental (Kawachi & Berkman, 2001) and physical health (Uchino, 2006).

Social relationships are believed to influence health outcomes through two different mechanisms, each conceptualized by distinct models: stress-buffering models and main effects models. More specifically, it is thought that social support moderates the stress-health relationship by decreasing the appraised threat of a stressor or through effective coping mechanisms (stress-buffering mechanism), whereas social integration promotes positive psychological states and motivation to maintain healthy behaviors (main effects mechanism) (Cohen, 2004). Interestingly, an individual does not actually require receipt of support for their health to be influenced (via main effects or stress-buffering); perception of support is a strong predictor of outcomes for both mental health and physical health (Rosengren, Orth-Gomer, Wedel, & Wilhelmsen, 1993; Wethington & Kessler, 1986). A wealth of studies highlight the



stress-buffering effects of social support on health in the context of stressful situations, however the relationship between social support, stress, and health is highly specific and researchers are now focusing on identifying the types of social support that are effective in reducing the negative impact on particular stressors, difficulties, or life events (e.g. Cacioppo et al., 2002; Cohen, 2004; Kiecolt-Glaser, 2001).

### **The Current Project**

The current project includes three empirical studies that contribute to the literature on marital quality and health. Each of the studies utilizes data from the 1995 MacArthur Foundation National Study of Midlife in the United States (MIDUS I) and its 10-year follow-up, MIDUS II (Brim, Ryff, & Kessler, 2004). The studies in the current project include data from the phone interviews and self-report questionnaires completed at both time points ( $n = 1,805$ ) and address three research questions:

1. What are the long-term health consequences of low-quality marital relationships? The focus of the first study is a critical examination of the health and well-being of individuals who remain in persistent low-quality marriage (i.e. over the course of the ten-year study). The primary goal of this study is to replicate the finding that persistent low-quality marriages are associated with a number of long-term, negative psychological and physical health outcomes. A secondary goal is to determine if changes in marital quality are associated with changes in long-term health and well-being. This paper draws upon research that conceptualizes low-quality marriages as a source of chronic stress or difficulty, rather than a discrete life event or stressor.

2. How does the accumulation of life events influence the health and well-being of individuals who experienced a divorce? More specifically, the central question this study asks is whether or not parental divorce is associated with poorer health outcomes for adult offspring following their own divorce compared to the health of divorced individuals whose parents were continually married. The assumption, based on previous research on divorce and early childhood adversity, is that multiple divorces (i.e. parent's and offspring) are associated with a greater number of stressors, which in turn are associated with poorer health outcomes.
3. What types of social support – if any – effectively buffer the negative impact of a low-quality marriage on individual-level health and well-being? The goal of this study is to identify sources of social support - including friend, family, and job support - that are effective in buffering the negative impact of marital strain on health. Previous research suggests that the stress-buffering mechanism of social support may be highly specific and that despite the many documented benefits of social support, little evidence exists which supports the stress-buffering effects of social support in the context of low-quality marital relationships.

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CHAPTER 2

SHIFTS IN MARITAL QUALITY:  
IMPLICATIONS FOR LONG-TERM HEALTH AND WELL-BEING

**Abstract**

The objective of this study is to investigate the relationship between marital quality and psychological well-being and physical health over time. Recent studies have reported the negative consequences of remaining in a long-term, low-quality marital relationship. However, few studies have examined how changes in marital quality may influence health outcomes. Utilizing the Midlife Development in the United States (MIDUS I and II; N = 1,805) dataset, the present study test two main hypotheses: 1) individuals in low-quality marriages will report lower levels of long-term mental and physical health than individuals in high quality marriages and 2) long-term health outcomes are sensitive to shifts in marital status. Results indicate that individuals in persistently low-quality marital relationships report consistently lower levels of well-being than individuals in high-quality relationships. In addition, psychological outcomes are associated with declines, but not improvements in marital quality.

**Background**

One of the most robust findings in this line of research is the relationship between marriage and longevity. William Farr (1858) published the first study on marriage and mortality rates of French citizens over one hundred years ago. Since then, researchers have consistently reported lower mortality rates for married

individuals as compared to their unmarried counterparts (never married, separated/divorced, or widowed), with men benefiting more from marriage than women (Gardner & Oswald, 2004; Gove, 1973, Johnson, Blacklund, Sorlie, & Loveless, 2000; Lillard & Panis, 1996; Waite, 1995). However, these aggregate findings mask variation in health among those individuals who are married. One explanation for this variation is marital quality. Differences in marital quality have been linked to both psychological and physiological health outcomes across the life span (Kiecolt-Glaser & Newton, 2001).

### **Marital Quality and Health**

The link between marital quality and psychological well-being has been studied at length, with consistent results. In a recent meta-analysis, Proulx, Helms, and Buehler (2007) reported a moderate mean effect size ( $r = .37$ ) between marital quality and psychological well-being across 66 cross-sectional studies and a small-to-moderate mean effect size ( $r = .25$ ) across 24 longitudinal studies. More specifically, poor marital quality has been most commonly associated with depressive symptoms and clinical depression (e.g. Beach, Katz, Kim, & Brody, 2003; Culp & Beach, 1998; Davila, Bradbury, Cohan & Tochluk, 1997; Fincham, Beach, Harold & Osborne, 1997). Additional studies have also found a relationship between low-quality marriages and increases in psychological distress, anxiety, and negative affect (Barnett, Raudenbush, Brennan, Pleck & Marshall, 1995; Dehle & Weiss, 2002; Karney, Bradbury, Fincham, & Sullivan, 1994). The relationship between marital quality and well-being however, is not simply limited to negative psychological well-being. Studies conducted in the 1980s report associations between marital quality and

positive well-being as well, including self-esteem, life satisfaction, and global happiness (Brodbar-Nemzer, 1986; Freudiger, 1983; Glenn & Weaver, 1981).

In addition to psychological well-being, studies conducted in the past decade have also focused on the relationship between marital quality and physical health. In one of the earliest studies on marital quality and physical health, Wickrama, Lorenz, Conger, and Elder (1997) analyzed four waves of interviews with over three hundred husbands and wives in rural Iowa. The authors found that increases in marital quality over the course of the four-year study were associated with a decrease in physical illness (Wickrama et al., 1997). Recent research on physiological pathways through which the marital quality-physical health relationship may operate has focused on individual-level stress response.

Researchers who study marital relationships often conceptualize marital strain, marital conflict, and hostility as acute stressors. Exposure to these stressors reliably activates an individual's stress response, resulting in alterations of neuroendocrine, immune, and cardiovascular functioning (Kiecolt-Glaser & Newton, 2001). Frequent activation of this stress response is hypothesized to result in allostatic load, which is associated with increased risk for morbidity and mortality (McEwen, 1998; McEwen & Stellar, 1993).

### **Implication for Those Who Stay**

One critical factor which may influence the extent to which marital quality influences health and well-being is the amount of time spent in the marriage. In fact, recent research has emerged which suggests that individuals who remain in long-term, low-quality marriages may have the worst health of any marital status (Hawkins &

Booth, 2005). Hawkins and Booth (2005) found that individuals who remained in low-quality marriages for twelve years experienced lower levels of psychological wellbeing as well as self-reported physical health than individuals in high-quality marital relationships. This finding is supported by Proulx et al.'s (2007) meta-analysis, in which the authors reported that the length of a marriage significantly moderated the relationship between marital quality and well-being. More specifically, Proulx et al (2007) found that this relationship was stronger for individuals who have been married for more than eight years than it was for individuals who have been married for less than eight years.

### **Implications for Those Who Leave**

In addition, research now indicates that despite the negative impact of divorce on long-term health due to increased exposure to stressors, individuals who exit a low-quality marriage may experience increases in health and well-being. Amato and Hohmann-Mariott (2007) reported that individuals in highly stressful marriages reported an increase in happiness following the disruption, while those individuals in low distress marriages reported decreases in happiness. Hawkins and Booth (2005) also reported that individuals who remained in low-quality marriages experienced lower levels of global happiness than individuals who divorced and remarried. This finding is consistent with the relief/escape perspective on adjustment to divorce, which suggests that if the marriage is perceived as low-quality, individuals may consider the dissolution of that marriage as a form of relief and will report higher levels of well-being following the disruption (Amato, 2000; Aseltine & Kessler, 1993; Kalmijn & Monden, 2006; Thoits, 1995; Wheaton, 1990).



Thus, recent research on marital quality and long-term health and well-being suggests that remaining in a low-quality marriage can be detrimental to one's health, with some suggesting that the negative health impact could exceed that of divorce and its typical sequelae. However, what is less clear is the impact that shifts in marital quality over time may have on long-term health and well-being. Research to date has examined differences between individuals in high- versus low-quality marriages, but what about those individuals whose marital quality significantly improves or significantly declines? Will their long-term health profiles be sensitive to these shifts?

### **Shifts in Marital Quality**

There is sufficient evidence in the literature to conclude that individuals in a persistent low-quality marital relationship would experience lower levels of psychological well-being and overall health than individuals in a persistent high-quality marital relationship (e.g. Hawkins & Booth, 2005). There are several mechanisms by which long-term low-quality marital relationships could erode health including lack of social support and increased marital conflict, both of which have implications for health and well-being (Cohen, 2004; Kiecolt-Glaser & Newton, 2001; Wickrama, et al. 1997; Wickrama, et. al, 2001). Umberson, Williams, Powers, Liu and Needham (2006) posit that persistent negative marital experiences create an environment of cumulative adversity in which daily, repeated negative experiences lead to accelerated declines in health. This is consistent with both life course perspectives on social relationships and health as well as stress and health (House, Landis, & Umberson, 1988; Juster, McEwen, & Lupien, 2009)

However, there is little research that addresses how shifts – either improvements or declines – in marital quality may influence long-term health and well-being. Wickrama et al (1997) did find a significant relationship between increases in marital quality and decreases in physical illness over the course of four years. However, the participants in this study were white, rural farmers in northern Iowa and thus the generalizability of the findings to different populations may be limited. Additionally, Wikrama et al. (1997) followed individuals for only four years. Given Proulx et al.'s (2007) finding that length of time in a marriage significantly moderates the relationship between marital quality and well-being, we believe it is important to examine this relationship among individuals who have been married for a longer period of time.

### **The Present Study**

There are two primary goals for this study. The first goal is to replicate the finding that persistent low-quality marriages are associated with a number of long-term, negative psychological and physical health outcomes. The second goal is to determine if changes in marital quality are associated with changes in long-term health and well-being. To address these goals, the present study utilizes data from the 1995 McArthur Foundation National Study of Midlife in the United States (MIDUS I) and its 10-year follow-up (MIDUS II) (Brim, Ryff, & Kessler, 2004). This dataset is particularly useful for the present study because it includes measures of marital quality, life events, psychological well-being, and physical health at two time points, ten years apart.

**Hypotheses.** The hypotheses can be divided into two parts. The first part focuses on those individuals who remain in the same marital relationship between Time 1 and Time 2. Specifically, three hypotheses are tested regarding the association between marital quality and long-term psychological well-being and physical health. The fourth hypothesis is intended to test whether or not self-reported indicators of health and well-being are sensitive to shifts in marital quality.

*Hypothesis 1 – Marital quality is associated with negative psychological well-being. Specifically, low marital quality (Time 1) will be associated with higher levels of distress and anxiety (Time 2).*

*Hypothesis 2 – Marital quality is associated with positive psychological well-being. Specifically, low marital quality (Time 1) will be associated with lower levels of positive affect, self-esteem, and life satisfaction (Time 2).*

*Hypothesis 3 – Marital quality is associated with physical health. Specifically, low marital quality (Time 1) will be associated with lower perceived health (Time 2).*

*Hypothesis 4 – Long-term health outcomes are sensitive to shifts in marital quality over the course of the ten-year study. Specifically, an improvement in marital quality will be associated with higher levels of health and well-being and that a decline in marital quality will be associated with lower levels of health and well-being.*

Because recent empirical evidence on marriage and divorce suggests that remaining in a low-quality marriage is more detrimental to health and well-being than obtaining a divorce – despite the negative consequences associated with divorce – a hypothesis to test this argument using the MIDUS II data is included.

*Hypothesis 5 – Remaining in a persistent low-quality marriage is more detrimental to individual-level health and well-being than exiting the marriage. Specifically, individuals who remain in a persistent low-quality marriage will report lower levels of mental and physical well-being at Time 2 than individuals who exit low-quality marriages.*

In addition, there may be additional significant differences in Time 2 measures of well-being between married and divorced individuals, based on the quality of the marital relationship, however given the lack of previous research at this level of detail, there are no specific predictions regarding the direction of the effects.

## **Method**

### **Data**

The data used in this study are from the national random-digit-dialing (RDD) sample of 1995 MacArthur Foundation National Study of Midlife in the United States (MIDUS I), merged with its 10-year follow-up (MIDUS II) (Brim, Ryff, & Kessler, 2004). The initial MIDUS I RDD sample consisted of 3,032 men and women (49% male) who took part in the initial telephone survey and who also returned two mail questionnaires sent after the telephone survey was conducted. There was significant attrition, however, between MIDUS I and MIDUS II. Data collection for MIDUS II took place between 2004-2006. Of the RDD sample, 65% of the original respondents were retained for the MIDUS II telephone interview; the retention rate was 71% adjusted for mortality. Of the 2,257 (48% male), who were successfully interviewed for MIDUS II, 80% ( $N = 1,805$ ) returned self-administered questionnaires (see Table 2.1 for further demographic information). Because many of the questions to be addressed in these analyses require use of questions from the self-administered portion of MIDUS II, it is apparent that the sample has become increasingly “select” over time.

Table 2.1 Means and Standard Deviations of Study 1 Variables

	Mean	Standard Deviation	Range
Demographic Characteristics			
Age (years)	46.90	12.26	23-74
Gender (1=female)	46%		
Race (1=black)	3%		
Education			
Less than high school education	6%		
High school education or GED	30%		
Some college	29%		
College, Graduate school	35%		
Household income	69,010.00	50,955.46	0-300,000
No. of biological children at home	2.15	1.33	0-5
No. of non-biological children at home	0.32	0.84	0-5
Youngest child in preschool	18%		
Covariates			
Neuroticism	2.21	0.65	1-4
Previous divorce	21%		
Parents divorced	12%		
Marital quality	1.86	0.61	1-4.2
Outcomes			
Distress	1.49	0.52	1-4.17
Anxiety (1=yes)	3%		
Positive affect	3.42	0.69	1-5
Self-esteem	37.89	7.09	13-49
Life satisfaction	7.68	1.16	2.4-10
Physical health	7.33	1.33	0-10

## Measures

**Marital quality.** Over the past few decades, marital quality has been assessed in numerous ways including levels of satisfaction, conflict, and happiness to name a few (e.g. Kiecolt-Glaser & Newton, 2001). The present study employs a scale the MIDUS investigators call “marital risk” to serve as the measure of marital quality. This scale, described in detail below, includes a number of items that attempt to measure the self-reported risk of relationship dissolution. Although this scale is different from the perhaps more traditional measures of marital satisfaction or marital conflict, it draws upon some of the same constructs within the individual items.

The marital risk scale was developed by the MIDUS investigators and included five items. The first item was, “During the past year, how often have you thought your relationship might be in trouble?”. Response options ranged on a five-point Likert scale from 1-“never” to 5-“all the time”. The second item was, “Realistically what do you think the chances are that you and your partner will eventually separate?”. Response options ranged on a four-point Likert scale from 1-“very likely” to 4-“not likely at all”. Responses were reverse coded for this item so that a higher score reflects a higher level of marital risk. The other three items were in response to the prompt, “How much do you and your spouse or partner disagree on the following issues?” and include, “Money matters, such as how much to spend, save, or invest”, “Household tasks, such as what needs doing and who does it”, and “Leisure time activities, such as what to do and with whom.” Response options for these last three items included 1-“a lot”, 2-“some”, 3-“a little”, and 4-“not at all”. All three items were reverse coded so that higher scores reflect higher levels of marital risk. Scores

from the five items were averaged to create the scale value. The sample mean for this scale is 1.86 ( $SD=.61$ ). Cronbach's alpha for this scale is .77.

**Psychological distress.** The psychological distress scale in MIDUS was comprised of six items that were selected from various scales (see Mroczek & Kolarz, 1998 for validation). Respondents were presented with the following prompt: "During the past 30 days, how much of the time did you feel..." The six items included "so sad nothing could cheer you up", "nervous", "restless or fidgety", "hopeless", "that everything was an effort", and "worthless". Response options ranged from 1 ("all of the time") to 5 ("none of the time") on a Likert scale. Answers were reverse coded so that higher scores reflect higher standing in the scale. A mean score was then calculated for all respondents ( $M = 1.49$ ,  $SD = 0.52$ ). Cronbach's alpha for this scale is .83.

**Anxiety.** Anxiety was measured using the four questions MIDUS investigators identified as being a "pre-condition" for follow-up questions regarding Generalized Anxiety Disorder (Wang, Berglund, & Kessler, 2000). This variable is a dichotomous variable in which responses were coded as "1" if the respondent answered that he or she worries "a lot more" than most people, worried "every day", "just about every day" or "most days", and worries about "more than one thing" or has different worries "at the same time". Approximately 3% of respondents in the study sample meet this criterion.

**Positive Affect.** The positive affect scale was similarly structured with six items (Mroczek & Kolarz, 1998). Respondents were asked to report "how much of the time" in the previous 30 days they felt a) "cheerful", b) "in good spirits", c)

“extremely happy”, d) “calm and peaceful”, e) “satisfied”, and f) “full of life”.

Response options included “all of the time”, “most of the time”, “some of the time”, “a little of the time”, and “none of the time”. Responses were coded 1-5 such that higher scores reflect higher levels of positive affect. The scale was constructed by calculating the mean of the responses ( $M = 3.42$ ,  $SD = 0.69$ ). Cronbach’s alpha for this scale is .91.

**Self-esteem.** The MIDUS II survey used a 7-item version of the Rosenberg Self-esteem scale to measure self-esteem at Time 2 (Rosenberg, 1965). Respondents were asked to report on a seven-point Likert scale whether they agreed with each of seven items. The seven items included statements such as, “I take a positive attitude toward myself,” “I wish I could have more respect for myself,” and “On the whole, I am satisfied with myself.” Response options included: “strongly agree”, “somewhat agree”, “a little agree”, “neither agree or disagree”, “a little disagree”, “somewhat disagree”, and “strongly disagree”. Responses were coded 1 through 7 such that a higher score reflected a higher standing in the scale. The second, fourth, and sixth statements in the list were reverse coded. The scale was constructed by calculating the sum of the scores for the seven items ( $M = 37.98$ ,  $SD = 7.09$ ). This scale has acceptable internal consistency, with a Cronbach’s alpha of .76.

**Life satisfaction.** The life satisfaction scale used in the present study is based on the life satisfaction scale created by the MIDUS II investigators (Prenda & Lachman, 2001). The MIDUS II life satisfaction scale included five questions for which respondents had to rate overall, on a scale from 0 (the worst possible) to 10 (the best possible), their life, work, health, relationship with spouse/partner, and



relationship with children. Since marital quality is controlled for in all of the analyses, that particular question was omitted and replaced with a question that asks respondents to rate their current overall financial situation on the same - 0 (the worst possible) to 10 (the best possible) - scale. The scale was constructed by calculating the mean of the responses across the five questions ( $M = 7.68$ ,  $SD = 1.16$ ). Omitting the question regarding the respondent's relationship with spouse/partner and adding the question on financial situation increases the scale's internal consistency from  $\alpha = .64$  to  $\alpha = .70$ .

### **Physical Health**

**Physical health.** Physical health was measured by a single question which asked respondents, "Using a scale from 0 to 10 where 0 means "the worst possible health" and 10 means "the best possible health," how would you rate your health these days?". The sample mean for this question is 7.33 ( $SD = 1.33$ ).

### **Covariates**

There are a number of potential covariates that are traditionally utilized when examining the health and well-being of individuals in the context of marriage and the family. Demographic covariates include: age, sex, race, household income, respondent's level of education, number of children living at home (both biological and non-biological), and having a youngest child in preschool (see Karney & Bradbury, 1995 for a review). Marital covariates include having a prior divorce and having parents who divorced during childhood (Wethington & Kamp-Dush, 2007). Finally, neuroticism is also included as a covariate because it has been empirically linked to both marital quality and marital status (Davila, Karney, & Bradbury, 2003).

The MIDUS I neuroticism scale is based on previous studies on personality scales; it includes four adjectives: moody, worrying, nervous, and calm. Respondents were asked how much the four adjectives described themselves. Responses were coded 1 through 4 such that higher scores reflect higher standing in the scale. Responses to the final adjective – “calm” – were reverse coded. The neuroticism scale is constructed by taking the mean of the four responses ( $M = 2.21$ ,  $SD = 0.65$ ). The internal consistency for this scale is good ( $\alpha = .76$ ).

In addition, this study includes a measure of life events as a covariate in the analysis of physical health outcomes. Previous studies have found a strong relationship between exposure to life events and mental health (e.g. Turner, Wheaton, & Lloyd, 1995). There are fewer studies that examine the relationship between life events and physical health, however life events are typically characterized by psychosocial stressors (e.g. death of a spouse, divorce) and increased exposure to stressors is associated with short-term physiological dysregulation and long-term physical health (McEwen, 1998; Sapolsky, 2004; Seeman, Singer, Rowe, Horowitz, & McEwen, 1997).

Fortunately, the MIDUS study is specifically designed to measure exposure to life events over the life course. The second wave of the study included a series of questions to determine if individuals had ever been exposed to particular life events during adolescence or adulthood (see Appendix A). The questions in MIDUS include 27 life events across several domains (e.g. education, family, employment, health). One of these items – parental divorce – was eliminated because it is already accounted for as a covariate in all of our analyses. Six additional childhood event items were

then added to the to the list: 1) multiple moves as a child, 2) family ever on welfare during childhood, 3) negative relationship with one or both parents, 4) low-quality neighborhood, 5) job strain, and 6) financial strain. These additions seemed appropriate because of their use in previous studies of lifetime exposure to life events and chronic stress (e.g. Turner, Wheaton, & Lloyd, 1995).

For 27 these questions, respondents replied either “yes” if the event had ever occurred or “no” if it had not; affirmative answers were coded as “1”. The 5 remaining questions regarding: multiple moves as a child, negative relationship with one or both parents, low-quality neighborhood, job strain, and financial strain were based on index scores which were dichotomized for this measure.

**Multiple moves.** Respondents were asked how many times his or her family moved to a different neighborhood during childhood. Responses were coded as “1” for this study if the family moved to a new neighborhood more than once.

**Negative relationships.** Respondents were asked two questions in the MIDUS study, “How would you rate your relationship with your mother (or the woman who raised you) during the years you were growing up?” and “How would you rate your relationship with your father (or the man who raised you) during the years you were growing up?” Response options ranged from 1- excellent to 5 – poor. For this study, responses were coded as “1” if respondents reported either a “fair” or “poor” relationship with either their mother or father.

**Neighborhood quality.** Perceived neighborhood quality is measured with four statements: “I feel safe being out alone in my neighborhood during the daytime,” “I feel safe being out alone in my neighborhood at night”, “I could call on a neighbor

for help if I needed it”, and “People in my neighborhood trust each other”. Answers were coded as 1- not at all, 2- a little, 3-some, 4-a lot. The scale was then constructed by taking the mean of the values. For this study, we dichotomized these responses, assigning “1” if the mean was 16 or below. In other words, we assigned a “1” to those individuals who responded either “not at all” or “a little” to each of the four questions.

**Job strain.** A number of job characteristics are measured in the MIDUS study. Consistent with previous work, job strain in this study reflects both low decision authority and high demands. Decision authority is measured using six questions: “On your job, how often do you have to initiate things – such as coming up with your own ideas or figuring out on your own what needs to be done?” “How often do you have a choice in deciding how you do your tasks at work?” “How often do you have a choice in deciding what tasks you do at work?” “How often do you have a say in decisions about your work?” “How often do you have a say in planning your work environment – that is, how your workplace is arranged or how things are organized”” and “How often do you control the amount of time you spend on tasks”. Demands are measured using five questions: “How often do you have to work very intensively – that is, you are very busy trying to get things done” “How often do different people or groups at work demand things from you that you think are hard to combine?” “How often do you have too many demands made on you?” “How often do you have enough time to get everything done?” (reverse coded) and “How often do you have a lot of interruption. Response options for both the decision authority and demands measures range from 1 – never to 5 – all of the time. Summary scores were then created for each measure such that higher scores reflect higher standing in the scale. Job strain in

this study was coded as “1” if decision authority was low (sum score of 24 or above) and demands were high (sum score of 10 or below).

**Financial strain.** Financial strain can be assessed many ways in the MIDUS study. This study utilizes the response to a single question, which asked, “In general, would you say you (and your family living with you) have more money than you need, just enough for your needs, or not enough to meet your needs.” Responses were coded as “1” if the respondent said “not enough money”.

A summary score of life events, including the 27 checklist events and the 5 events constructed for this study was created. Number of life events experienced by individuals in this sample ranged from 0 to 14 with a mean of 3.25 and a standard deviation of 2.39.

### **Analysis Strategy**

For the present study, the sample was created by first identifying individuals who were married to the same individual for the entire length of the ten-year study. The sample was then into two groups: persistent high-quality marriages and persistent low-quality marriages. High versus low quality marriages were determined based on a median split in the marital risk variable. Consistent with previous research on marital quality, the majority of respondents in the MIDUS study report high quality marriages (Robles & Kiecolt-Glaser, 2003). Specifically, the mean marital risk score (1.86) was below the average for the scale (2.40 on a scale from 0-4.8). However, since a significant minority of individuals reported high marital risk, those scores skewed the distribution of the data. Therefore, a median split (1.80) was considered more appropriate for the analysis.

In addition to the persistent high-quality group and the persistent low-quality group, two additional groups were created to reflect shifts in marital quality. The Improvement group reported below average marital quality at Time 1 and above average marital quality at Time 2. The Decline group reported above average marital quality at Time 1 and below average marital quality at Time 2. One-way Analysis of Variance (ANOVA) confirm that there is a significant difference in marital quality between these four groups ( $F(3, 1,183)=928.13, p<.001$ ). Bonferroni post-hoc pairwise comparisons yield significant differences between all pairs of groups ( $p<.0001$ ), except between the persistent high quality group and the Decline group where  $p<.05$ ).

After creating the relevant sample groups, a series of multiple regression analyses were conducted to determine if marital quality at Time 1 is associated with mental and physical health (Hypotheses #1-3). A dummy-coded variable for marital quality group (using the persistent high-quality group as the reference) was included in each of the regression analyses to determine if there is an association between shifts in marital quality and health and well-being at Time 2 (Hypothesis #4). Finally, multivariate linear regression analysis was conducted to determine if there are significant differences in Time 2 measures of health and well-being between those individuals who remain in a low-quality marriage and those who exit a low-quality marriage (Hypothesis #5).

## **Results**

### **Demographics**

Descriptive statistics for all study variables are displayed in Table 1. Despite the fact that there are slightly more women in the RDD of the MIDUS II (51%), there

are more men (54%) than women in the sample. The average age of respondents in this sample is 46.90 ( $SD = 12.26$ ). The respondents in the sample are well-educated with 64% reporting at least some college education. The racial make-up of the analysis is primarily white; 7% of respondents self-identify as Black or African American in the full RDD sample, but only 3% of respondents in this study's sample self-identify as Black or African American. The number of biological children at home (2.15) reflects the national average (U.S. Census Bureau, 2009). Stratified sampling weights were utilized in all analyses to account for the lack of congruence with national averages on key demographic variables (e.g. education, race). All analyses were conducted using the Stata 11 software package (StataCorp, 2009).

### **Hypothesis 1: Marital Quality and Negative Well-Being**

Using multivariate regression, there is strong evidence that Time 1 marital quality is associated with negative well-being at Time 2 (see Table 2.2 and Table 2.3). After controlling for the demographic and marital covariates, there is a significant relationship between poor marital quality and distress ( $b = 0.06, p < .05$ ) and anxiety ( $OR = 2.02, p < .05$ ). Covariates differed slightly in level of significance depending on the outcome variable of interest. Time 1 neuroticism as well as having parents who divorced during childhood are the most consistent predictors of negative Time 2 measures of well-being. Specifically, neuroticism was significantly associated with higher levels of distress ( $b = 0.06, p < .05$ ) and a greater likelihood of anxiety ( $OR = 4.75, p < .001$ ). Perhaps somewhat unexpectedly, parental divorce during childhood is associated with lower levels of distress ( $b = -0.12, p < .05$ ) and a decreased likelihood of anxiety ( $OR = 0.22, p < .05$ ). In addition to neuroticism and parental marital status,

total household income is significantly associated with lower levels of distress ( $b = -0.06, p < .05$ ).

### **Hypothesis 2: Marital Quality and Positive Well-Being**

In addition to an association between marital quality and negative well-being, there is an even stronger relationship between marital quality and positive well-being (Table 2.2). Low marital quality is significantly, negatively associated with positive affect ( $b = -0.08, p < .05$ ), self-esteem ( $b = -2.32, p < .001$ ), and life satisfaction ( $b = -0.37, p < .001$ ). Again, covariates differed in their level of significance depending upon the outcome measure. Age is significantly associated with higher levels of positive affect ( $b = 0.00, p < .05$ ), while having been previously divorce ( $b = -0.11, p < .05$ ) is associated with lower levels of positive affect. Sex ( $b = -1.31, p < .01$ ) and neuroticism ( $b = -2.99, p < .001$ ) predict lower levels of self-esteem, while total household income ( $b = 1.02, p < .01$ ) and having at least 16 years of education ( $b = 1.47, p < .05$ ) significantly predict higher levels of self-esteem. Finally, self-reporting as Black or African American ( $b = -0.54, p < .05$ ), neuroticism ( $b = -0.20, p < .01$ ), and having been previously divorced ( $b = -0.31, p < .01$ ) are each significantly associated with lower levels of life satisfaction. In contrast, age ( $b = .01, p < .05$ ), sex ( $b = 0.20, p < .05$ ) and total household income ( $b = .36, p < .001$ ) are significantly associated with higher levels of life satisfaction.

### **Hypothesis 3: Marital Quality and Physical Health**

Contrary to the hypothesis, results indicate that low-quality marriage is associated with higher levels of perceived health ( $b = 0.14, p < .10$ ).



Table 2.2 Predictors of Time 2 Well-Being, Multivariate Regression

	Distress	Positive Affect	Self-Esteem	Life Satisfaction	Physical Illness
Age	0.00	0.00 *	-0.03	0.01 *	-0.02 **
Gender (1=female)	0.00	0.00	-1.32 **	0.20 *	0.04
Race (1=black)	0.01	0.07	-0.65	-0.54 *	-0.29
Household income	-0.06 *	0.05	0.03 **	0.36 ***	0.08
Level of education					
Less than 12 years	0.15 †	0.05	-0.87	-0.06	0.26
13-15 years	-0.02	0.03	0.30	0.01	0.03
16 years or more	-0.06	0.05	1.47 *	0.12	0.23
Biological children	0.02	-0.01	-0.06	-0.05	-0.06
Non-biological children	0.00	0.04	0.28	-0.06	0.07
Youngest in preschool	0.03	0.07	-0.80	-0.01	0.08
Neuroticism	0.06 *	-0.03	-2.99 ***	-0.20 **	-0.12
Life events					-0.08 **
T1 Distress	0.41 ***				
T1 Positive Affect		0.47 ***			
T1 Physical Illness					0.50 ***

†p < .10 \*p < .05 \*\*p < .01 \*\*\*p < .001

Table 2.2 Predictors of Time 2 Well-Being, Multivariate Regression, continued

Remarried (1=yes)	0.04	0.03	-0.11 *	0.57	-0.31 **	0.16
Parental Divorce	-0.12 *	-0.12 *	0.06	0.56	-0.03	0.23
Low Marital Quality	0.06 *	0.06 *	-0.08 *	-2.32 ***	-0.37 ***	0.14 †
Constant	1.45	1.36	1.22	39.00	4.46	3.92
N	836	863	865	870	764	869
R <sup>2</sup>	0.29	0.27	0.28	0.20	0.18	0.29

†p < .10 \*p < .05 \*\*p < .01 \*\*\*p < .001

Table 2.3 Time 1 Predictors of Anxiety, Multivariate Logistic Regression

	Anxiety		95% CI Lower Bound	95% CI Upper Bound
Age	0.90	**	0.85	0.97
Gender (1=female)	1.88		0.76	4.65
Race (1=black)	1.35		0.12	15.14
Household income	0.85		0.43	1.68
Level of education				
Less than 12 years	0.70		0.10	4.77
13-15 years	0.82		0.29	2.30
16 years or more	0.20	†	0.04	1.02
Biological children	1.16		0.83	1.62
Non-biological children	1.45	†	0.96	2.21
Youngest in preschool	0.50		0.16	1.62
Neuroticism	4.75	***	2.26	9.98
T1 Anxiety	8.44	***	3.01	23.68
Remarried (1=yes)	2.26	†	0.87	5.82
Parental Divorce (1=yes)	0.22	*	0.05	0.88
Low Marital Quality	2.02	*	1.07	3.82
N	1,036			
Pseudo R <sup>2</sup>	0.37			
Likelihood Ratio	109.35			
†p < .10 *p < .05 **p < .01 ***p < .001				

The only other two predictors, besides Time 1 perceived health ( $b = 0.50, p < .001$ ), which are significantly associated with Time 2 perceived health are age ( $b = -.01, p < .01$ ) and number of life events ( $b = -0.08, p < .01$ ).

#### **Hypothesis 4: Shifts in Marital Quality and Implications for Health and Well-being**

To test whether or not shifts in marital quality influence long-term health and well-being, the sample was divided the married sample into four groups: 1) those who

report low-quality marriages at Time 1 and Time 2 – the Persistent Low-Quality (PLQ) group, 2) those who report low-quality marriages at Time 1 and high-quality marriages at Time 2 – the Improvement group, 3) those who report high-quality marriages at Time 1 and Time 2 – the Persistent High-Quality (PHQ) group, and 4) those who report high-quality marriages at Time 1 and low-quality marriages at Time 2 – the Decline group. A series multivariate regression analyses was then conducted using a dummy variable for group affiliation, with the persistent high-quality marriage group as the reference.

Overall, results suggest that individuals who remain in low-quality marriages report significantly lower levels of Time 2 health and well-being than those in high-quality marriages (Table 2.4 and Table 2.5). In addition, the results reveal that Time 2 measures of health and well-being are sensitive to declines in marital quality, but not improvements.

**Persistent low-quality marriages.** Reporting low-quality marriages at both Time 1 and Time 2 is significantly associated with lower levels of distress ( $b = 0.18$ ,  $p < .001$ ) and a greater likelihood of anxiety ( $OR = 4.29$ ,  $p < .05$ ). Affiliation with this group is also associated with lower levels of positive affect ( $b = -0.22$ ,  $p < .001$ ), self-esteem ( $b = -4.65$ ,  $p < .001$ ), and life satisfaction ( $b = -0.67$ ,  $p < .001$ ). Persistent low-quality marriage was not significantly associated with overall perceived health.

**Improvement.** There is very limited evidence that an improvement in marital quality between Time 1 and Time 2 is associated with measures of Time 2 health and well-being. Specifically, improvement is marginally significantly related to lower self-esteem ( $b = -1.04$ ,  $p < .10$ ) and a greater likelihood of anxiety ( $OR = 3.85$ ,  $p < .10$ ),

relationships that one would expect to be in the opposite direction. Improvements in marital quality were not significantly associated with any of the other outcome variables.

**Decline.** Unlike the Improvement group, Time 2 measures of health and well-being appear to be sensitive to declines in marital quality. The Decline group is associated with higher levels of distress ( $b = 0.10, p < .10$ ) and a greater likelihood of anxiety ( $OR = 4.56, p < .05$ ). It is also associated with lower levels of positive affect ( $b = -0.25, p < .001$ ), self-esteem ( $b = -2.13, p < .01$ ), and life satisfaction ( $b = -0.42, p < .01$ ). Similar to the unexpected findings from the Improvement group, Decline is not associated with overall perceived health.

#### **Hypothesis 5: Persistent Low Quality Marriage as Compared to Divorce**

Hawkins and Booth (2005) find evidence that remaining in a low-quality marriage for an extended period of time can be more harmful to individual-level health than exiting the marriage and that exiting the low-quality marriage may actually result in increases in well-being. This comparison is tested in the present study using multivariate linear regression. To do this, observations that were not included in the previous analyses were added to the sample. Namely, individuals who were married at Time 1 and then either divorced ( $n = 76$ ) or remarried at Time 2 ( $n = 55$ ) were added to the already established sample.

Table 2.4 Relationship between Marital Status and Well-Being, Multivariate Linear Regression

	Distress	Positive Affect	Self-Esteem	Life Satisfaction	Physical Illness
Age	0.00	0.01 *	-0.02	0.01 *	-0.02 **
Gender (1=female)	0.00	0.01	-1.21 **	0.21 **	0.04
Race (1=black)	-0.04	0.11	0.29	-0.40 †	-0.18
Household income	-0.06 *	0.04	0.87 *	0.34 ***	0.08
Level of education					
Less than 12 years	0.16 *	0.05	-0.86	-0.09	0.25
13-15 years	-0.02	0.03	0.33	-0.02	0.04
16 years or more	-0.07	0.07	1.72 **	0.14	0.25 †
Biological children	0.02	-0.01	-0.09	-0.06 †	-0.05
Non-biological children	0.00	0.03	0.19	-0.08	0.07
Youngest in preschool	0.01	0.10 †	-0.30	0.08	0.06
Neuroticism	0.06 *	-0.03	-2.92 ***	-0.21 **	-0.10
Life events					-0.08 **
T1 Distress	0.40 ***				
T1 Positive Affect		0.46 ***			
T1 Physical Illness					0.49 ***
Remarried (1=yes)	0.03	-0.10 †	0.68	-0.29 **	0.15
Parental Divorce	-0.14 **	0.08	0.89	0.02	0.22
Persistent Low Quality	0.18 ***	-0.22 ***	-4.65 ***	-0.68 ***	0.07
Improve	-0.01	0.02	-1.04 †	-0.08	0.10
Decline	0.10 †	-0.25 ***	-2.13 **	-0.42 **	0.10
Constant	1.46	1.22	37.43	4.16	4.21
N	837	866	871	765	870
R <sup>2</sup>	0.31	0.30	0.23	0.20	0.29

†p &lt; .10 \*p &lt; .05 \*\*p &lt; .01 \*\*\*p &lt; .001

Table 2.5 Relationship between Marital Status and Anxiety, Multivariate Logistic Regression

†p < .10 *p < .05 **p < .01 ***p < .001				
	Anxiety		95% CI Lower Bound	95% CI Upper Bound
Age	0.91 **		0.85	0.97
Gender (1=female)	1.96		0.77	4.99
Race (1=black)	1.29		0.11	15.50
Household income	0.85		0.43	1.66
Level of education				
Less than 12 years	0.59		0.08	4.48
13-15 years	0.86		0.30	2.43
16 years or more	0.19 *		0.04	0.96
Biological children	1.19		0.85	1.66
Non-biological children	1.47 †		0.98	2.21
Youngest in preschool	0.46		0.14	1.50
Neuroticism	4.95 ***		2.35	10.41
T1 Anxiety	9.24 ***		3.24	26.36
Remarried (1=yes)	2.32 †		0.89	6.05
Parental Divorce	0.22 *		0.05	0.90
Persistent Low Quality	4.29 *		1.28	14.33
Improvement	3.85 †		0.90	16.39
Decline	4.56 *		1.10	18.92
N	1,038			
Pseudo R <sup>2</sup>	0.38			
Likelihood Ratio	112.28			
†p < .10 *p < .05 **p < .01 ***p < .001				

For the analysis, the additional cases were divided into four groups: 1) those who exited low-quality marriages and did not remarry ( $n = 47$ ), 2) those who exited high-quality marriages and did not remarry ( $n = 29$ ), 3) those who exited low-quality marriages and subsequently remarried ( $n = 40$ ), and 4) those who exited high-quality

marriages and subsequently remarried ( $n = 15$ ) (see Table 2.6 for mean levels of study variables by marital quality and status). A dummy variable was then created for marital status using those individuals who remained in a low-quality marriage as the reference group.

The results provide no support for the hypothesis that remaining in a low-quality marriage is more detrimental to health and well-being than exiting a low-quality marriage (Table 2.7 and Table 2.8). There is only one significant finding in this analysis and it does not pertain to individuals who reported low-quality marriages at Time 1: individuals who exit high-quality marriages between Time 1 and Time 2 and then remarry report higher levels of self-esteem at Time 2 ( $b = 2.11, p < .01$ ).

### **Discussion**

Previous research has identified marital quality as a key moderator of the relationship between marriage and both psychological well-being and physical health such that low-quality relationships mitigate the purported benefits that marriage confers (Hawkins & Booth 2005; Kielcolt-Glaser & Newton, 2001, Umberson et. al., 2006). Most of this data comes from studies conducted in the 1980s and early 1990s. The present study utilizes more recent data from the Midlife Development in the United States (MIDUS II) longitudinal dataset to address two questions. First, is low-marital quality associated with measures of mental and physical health? Second, are long-term health outcomes sensitive to changes in marital status in the ten-year period between Time 1 and Time 2?



Table 2.6 Mean Levels of Well-Being by Marital Quality and Status

	Distress	Positive Affect	Self-Esteem	Life Satisfaction
<hr/>				
Married				
Low Quality	1.72(.04)	3.10(.05)	34.33(.46)	7.08(.08)
Improve	1.45(.03)	3.48(.04)	38.39(.50)	7.86(.09)
High Quality	1.39(.02)	3.60(.03)	39.72(.29)	7.96(.05)
Decline	1.50(.06)	3.30(.07)	37.32(.74)	7.56(.12)
<hr/>				
Divorced				
Low Quality	1.75(.14)	3.16(.12)	35.03(1.56)	7.24(.29)
High Quality	1.43(.13)	3.59(.14)	39.16(1.31)	7.04(.33)
<hr/>				
Remarried				
Low Quality	1.81(.15)	3.10(.11)	35.59(1.66)	7.17(.26)
High Quality	1.37(.11)	3.55(.20)	42.00(1.42)	7.48(.31)
<hr/>				
N	1,081	1,116	1,118	968

*Note.* Standard errors in parentheses

Table 2.7 Relationship between Marital Status and Well-Being, including Divorced, Multivariate Linear Regression

	Distress	Positive Affect	Self-Esteem	Life Satisfaction	Physical Illness
Age	-0.00 *	0.00 *	0.01 †	0.01 **	-0.01 ***
Gender (1=female)	0.01	0.03	-0.63	0.13 †	0.07 †
Race (1=black)	0.03	-0.02	-0.25	-0.31 †	-0.21 *
Household income	-0.02	0.02	0.83 ***	0.22 ***	0.02
Level of education					
Less than 12 years	0.08	0.10	-0.65	0.08	-0.14
13-15 years	-0.04	0.01	0.28	0.08	0.07
16 years or more	-0.08 *	0.03	2.00 ***	0.23 *	0.20 ***
Biological children	0.01	-0.01	0.00	-0.04	-0.01
Non-biological children	-0.01	0.04 †	0.29	-0.03	-0.02
Youngest in preschool	0.02	0.03	-0.96 †	-0.06	-0.12 *
Neuroticism	0.10 ***	-0.11 ***	-3.23 ***	-0.25 ***	-0.08 **
Life events	0.02 **	-0.03 ***	-0.34 ***	-0.13 ***	-0.02 **
T1 Distress	0.37 ***				
T1 Positive Affect		0.42 ***			
T1 Physical Illness					0.48 ***

†p &lt; .10 \*p &lt; .05 \*\*p &lt; .01 \*\*\*p &lt; .001

Table 2.7 Relationship between Marital Status and Well-Being, Multivariate Linear Regression, continued

	Distress	Positive Affect	Self-Esteem	Life Satisfaction	Physical Illness
Remarried (1=yes)	0.00	0.03	0.79 †	-0.03	0.00
Parental Divorce (1=yes)	-0.10 **	0.09 †	0.85	0.12	-0.02
Divorced, Low Quality	-0.11	0.02	-0.30	-0.10	0.10
Divorced, High Quality	0.00	0.09	1.10	-0.27	0.22
Remarried, Low Quality	0.06	0.04	0.41	0.26	0.00
Remarried, High Quality	-0.02	-0.08	2.11 **	-0.04	0.10
Constant	1.09	1.97	35.49	5.69	2.51
N	1,440	1,494	1,496	1,189	1,780
R <sup>2</sup>	0.28	0.27	0.18	0.20	0.34

†p < .10 \*p < .05 \*\*p < .01 \*\*\*p < .001

Table 2.8. Relationship between Marital Status and Anxiety, including Divorced, Multivariate Logistic Regression

	Anxiety		95% CI Lower Bound	95% CI Upper Bound
Age	.93 ***		0.90	0.97
Gender (1=female)	2.31 *		1.17	4.56
Race (1=black)	1.62		0.52	5.11
Household income	0.83		0.59	1.17
Level of education				
Less than 12 years	0.92		0.26	3.28
13-15 years	0.69		0.35	1.36
16 years or more	0.21 **		0.07	0.56
Biological children	1.03		0.80	1.32
Non-biological children	1.18		0.85	1.64
Youngest in preschool	0.69		0.31	1.52
Neuroticism	4.15 ***		2.53	6.81
Life Events	1.04		0.94	1.16
T1 Anxiety	4.65 ***		2.32	9.32
Remarried (1=yes)	1.65		0.87	3.15
Parental Divorce	0.58		0.27	1.26
Divorced, Low Quality	0.75		0.13	4.15
Divorced, High Quality	1.78		0.20	15.78
Remarried, Low Quality	0.63		0.11	3.72
Remarried, High Quality	1.39		0.48	4.01
N	1,781			
Pseudo R <sup>2</sup>	0.30			
Likelihood Ratio	160.09			

†p < .10 \*p < .05 \*\*p < .01 \*\*\*p < .001

And finally, are there significant differences in well-being between individuals who remain in a low-quality marriage and individuals who exit a low-quality marriage?

Consistent with previous research, there is strong evidence to support the hypothesis that low-marital quality is associated with lower levels of psychological well-being. Specifically, low marital quality predicts higher levels of distress, greater likelihood of anxiety, and lower levels of positive affect, self-esteem and life satisfaction. The evidence for a relationship between low-quality marriage and physical health is much weaker. However, contrary to the original hypothesis, the results indicate that low-quality marriage was marginally significantly associated with lower levels of self-reported health. There is no clear explanation for this finding and it merits further exploration perhaps with different measures of physical health.

The second set of research questions focused on whether or not measures of health and well-being would be sensitive to shifts in marital quality. Here there is an interesting pattern – specifically, a decline in marital quality, represented by above average marital quality at Time 1 and below average marital quality at Time 2, is associated with higher levels of distress, a greater likelihood of anxiety, and lower levels of positive affect, self-esteem, and life satisfaction. However, improvements in marital quality, represented by below average marital quality at Time 1 and above average marital quality at Time 2, are weakly associated with *decreases* in self-esteem. Finally, Booth and Hawkins (2005) suggested that remaining in a long-term, low-quality marital relationship is more detrimental to health than divorce. There is no evidence to support this finding in the present study.

Research on divorce suggests that one mechanism which may explain the relationship between marital dissolution and negative health outcomes is greater exposure to stressors (Amato, 2000). In his divorce-stress-adjustment perspective, Amato (2000) suggests that the process of divorce increases an individual's exposure to stressors that, over time, erode physical health. This perspective is supported by research on allostatic load, which links repeated activation of the hypothalamic-pituitary-adrenal (HPA) axis to negative health outcomes (Juster, McEwen, & Lupien, 2009). Similarly, Umberson et al. (2006) posit that individuals in long-term low-quality marriages suffer from the "cumulative adversity" of marital strain.

Interestingly, there is no significant difference in physical health based on marital quality in this study, which could be due to a number of factors. First, the dependent measure – a one-item measure of overall health– may not adequately capture the physical consequences of marital strain. Another potential explanation is that differences in physical outcomes may emerge later in life, but the MIDUS II study did not follow individuals long enough to detect these differences.

There are a few notable limitations to this study. To begin, the assessment of low-quality marriages is most likely conservative. There is a high probability that the lowest-quality marriages in this study dissolved before the second wave of data collection. However, this highlights a relevant concern in the literature on marital quality, which is that even those relationships that are only moderately strained can contribute to decrements in health and well-being. Second, the present study is limited by two waves of data collection. Marital quality can fluctuate a number of times in a

ten-year time period, thus future studies would benefit from multiple assessments of marital quality within a shorter time frame.

## **Conclusions**

It is clear that remaining in a low-quality marriage for at least a decade is associated with lower levels of psychological well-being than individuals who remain in a high-quality marriage. What is less clear is whether or not remaining in long-term, low-quality marriage is more detrimental to health and well-being than exiting the marriage. The present study is limited by the small number of individuals who exited low-quality marriages during the study, however preliminary analyses suggest that these individuals do not differ significantly on measures of health and well-being from individuals who remain in low-quality marriages. It is possible that the differentiation between “divorced” and “married”, even when taking into account marital quality, does not sufficiently account for the wide variety of factors that may contribute to well-being. Future research should focus in more detail on the characteristics of the marriage itself and the context of the divorce (e.g. who initiated, was it expected). It is likely that these characteristics are more predictive of later health and well-being than marital status and quality alone.

This study also examined whether or not measures of health and well-being would be sensitive to shifts in marital quality. Despite the fact that this study only had two waves of data, the patterns that emerged are informative and perhaps alarming. Measures of health and well-being appear to be very sensitive to declines in marital quality, but not improvements in marital quality. This preliminary finding certainly

merits further exploration, particularly with longitudinal studies that include assessments of marital quality and health at multiple time points.



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## CHAPTER 3

### “DOUBLE EXPOSURE” TO DIVORCE:

### THE UNEXPECTED INFLUENCE OF PARENTAL DIVORCE ON THE HEALTH AND WELL-BEING OF DIVORCED OFFSPRING

#### **Abstract**

Divorce is often associated with a range of negative social, emotional, physical, and economic outcomes. Exposure to more than one divorce (i.e. personal as well as parental) may increase an individual’s risk of long-term negative outcomes. This study utilizes longitudinal data from the Midlife Development in the United States (MIDUS) dataset to examine the association between exposure to multiple divorces and health and well-being. Contrary to expectations, following their own divorce, individuals who also experienced parental divorce during childhood reported higher levels of life satisfaction and lower levels of psychological distress and physical health conditions at Time 2 compared to individuals whose parents were continually married.

#### **Background**

Over the course of the past twenty years, numerous studies have been conducted on the relationship between stress and health. More specifically, researchers have been able to consistently document an inverse relationship between exposure to stressors and individual-level health and well-being (McEwen, 1998; Seeman, McEwen, Rowe, & Singer, 2001; Seeman, Singer, Rowe, Horowitz, & McEwen, 1997; Singer & Ryff, 1999; Turner, Wheaton, & Lloyd, 1995). However, not all stressors are expected to influence health and well-being in the same way or to the same extent. For example,

recent empirical evidence suggests that exposure to childhood stressors can have a greater impact on well-being than stressors experienced in adulthood. In their study on exposure to stressors and marital quality, Umberson, Williams, Powers, Liu, and Needham (2005) found that individuals who were exposed to life events or stressors in childhood (e.g. death of a parent, parental divorce, parental marital problems, economic hardship) were more reactive to fluctuations in marital quality in adulthood than individuals who did not report exposure to life events or stressors in childhood. In addition, Luhmann and Eid (2009) recently reported that amongst individuals who experienced multiple divorces, the second divorce had a smaller impact on well-being than the first.

Both the Umberson et al. (2005) study and the Luhmann and Eid (2009) study highlight two important factors in research on exposure to stressors and health: timing and repeated life events within the same domain. The present study extends the literature on exposure to stressors across the life course by examining how exposure to parental divorce during childhood may influence the health and well-being of offspring following their own divorce.

### **“Double Exposure” to Divorce**

An abundance of research has demonstrated the negative effects of parental divorce on a child’s well-being (see Amato, 2001; Hetherington, Bridges, & Insabella 1998; and Lansford, 2009 for reviews). Children who experience parental divorce consistently show deficits in a number of different domains including academic achievement, emotional and behavioral disorders, social competence, and self-esteem as compared to their peers whose parents have been continuously married. Despite the

fact that these differences have been detected in numerous studies, a recent meta-analysis on children's adjustment to divorce suggests that the effect sizes are relatively small (i.e. one-quarter of a standard deviation on average) (Amato, 2001). Yet, there is evidence that suggests that these differences become more pronounced later in life (Amato, 2000; Chase-Lansdale, Cherlin, & Kiernan, 1995; Chase-Lansdale, Cherlin, & McRae, 1998).

In addition, a number of research studies have documented the relationship between adult adjustment to divorce and negative mental and physical health outcomes including depression, psychological distress, substance abuse, decreased global happiness, and increased morbidity and mortality (for a review, see Amato, 2000). However, there is a significant amount of variation in health outcomes between individuals. Previous studies have identified a number of demographic, psychological and interpersonal factors which may explain these disparities including, but not limited to, age (Williams & Umberson, 2004), gender (Aseltine & Kessler, 1993; Liu & Umberson, 2008; Marks & Lambert, 1998; Williams & Umberson, 2004), race (Liu & Umberson, 2008), social support (Kalmijn, 2009; House, Landis & Umberson, 1988; Thoits, 1995), marital quality (Amato & Hohmann-Marriott, 2007; Kalmijn & Monden, 2006; Overbeek, Vollebergh, de Graaf, Scholte, de Kemp et al., 2006), and cognitive appraisal of the divorce (Tashiro, Frazier, & Berman, 2006). Taking these findings into account and applying recent findings on the relationship between exposure to stressors and health, it is clear that "double exposure" to divorce (i.e. experiencing parental divorce during childhood and then marital dissolution during adulthood) is likely associated with increased exposure to stressors and that

individuals with double exposure would be at greater risk for negative health outcomes than individuals with “single exposure” (i.e. their own marital dissolution during adulthood). But how exactly do these divorce-related stressors impact individual-level health across the lifespan?

### **Physiological Impact of Divorce**

One theoretical framework that has proved to be particularly helpful in conceptualizing the physiological impact of stressful events is allostatic load (AL). Allostatic load is the physiological imprint, manifested in multiple somatic systems, which occurs as the result of maladaptive responses to stressors (McEwen, 1998). Juster, McEwen and Lupien (2009) outlined four types of allostatic load in the most recent review of allostatic load, including: frequent activation of the stress response (what the authors call “repeated hits”), lack of adaptation, prolonged response, and inadequate response. Considering the negative sequelae of divorce, it is reasonable to conclude that individuals who experience marital dissolution – whether their parents or their own - would experience more stressors. This increased exposure to stressors could theoretically lead to more frequent activation of the HPA axis, and subsequently higher levels of allostatic load than individuals who are married or perhaps never married. It can be further concluded that since allostatic load is associated with an increased risk of morbidity and mortality (Juster et al., 2009; Seeman, Singer, Rowe, Horwitz, & McEwen, 1997), individuals who experience a divorce and its subsequent stressors are at greater risk of morbidity and mortality. This conclusion is also supported by numerous population studies which have documented the relationship between divorce and increased morbidity and mortality as compared to those

individuals who remain continually married in adulthood (Gardner, 2004; Gove, 1973; Johnson, Backlund, Sorlie, & Loveless, 2000; Lillard & Panis, 1996).

Allostatic load is measured using an index of ten biological markers: systolic and diastolic blood pressure, serum dehydroepiandrosterone-sulphate (DHEA-S0), cholesterol, waist-to-hip ratio, catecholamines, epinephrine and norepinephrine, plasma glycosylated hemoglobine, and urinary cortisol (Juster et al., 2009). Since this biological data is not yet available from the MIDUS investigators, the present study uses an indirect measure of allostatic load, chronic health conditions. There are several areas of stress research that document the relationship between exposure to stressors across the life course and chronic physical health conditions, which makes chronic health conditions an appropriate proxy for allostatic load.

First, allostatic load itself is associated with declines in both physical and mental health over the life course, including the most prevalent chronic health condition in the United States, cardiovascular disease (see Juster et al., 2009 for a review). Allostatic load is fundamentally a measure of physiological dysregulation and long-term continued dysregulation is what appears to lead to negative health outcomes. In addition, in her research on the weathering hypothesis, Geronimus found an association between increased exposure to social stressors over the life course and negative health outcomes including hypertension and negative reproductive outcomes for Black women (Geronimus, 1996; Geronimus, Andersen, & Bound, 1991; Geronimus, Hicken, Keene, & Bound, 2005). Despite Geronimus' focus on race-related stressors and the present focus on stressors related to divorce, her primary finding, which indicates that social stressors can lead to early deterioration of health, is

fundamentally similar to the current contention that increased exposure of stressors related to divorce are associated with more negative health outcomes over time than individuals who did not experience a divorce. Finally, recent studies on life events and morbidity/mortality find a clear relationship between these factors (e.g. Lantz, House, Mero & Williams, 2005).

### **Can Parental Divorce Act as a Buffer for Offspring Adjustment to Divorce?**

The allostatic load framework suggests that parental divorce, including all subsequent stressors, would leave a physiological imprint on a children and that this imprint can permanently influence his or her health trajectory. However, there is reason to believe that while parental divorce may have long-term, negative consequences on health and well-being for some individuals, others may never experience these negative outcomes; in fact, some may actually thrive in the aftermath of parental divorce.

According to Hetherington, Bridges, and Insabella (1998), the majority of children demonstrate healthy adjustment to parental divorce. In fact, there is a subset of girls who have shown highly resilient behaviors following their parent's divorce (Hetherington, 1989). Similar findings have been reported in studies on prenatal exposure to stressors and cognitive outcomes in preschool and school-aged children. Children whose mothers were pregnant during the 1998 Great Ice Storm in Canada were evaluated at ages 2 and 5 for cognitive and linguistic abilities. The researchers found a curvilinear relationship between levels of prenatal maternal stress and child outcomes such that children whose mothers reported moderate amounts of prenatal stress actually showed enhanced scores on the Wechsler Intelligence Scale and

Peabody Picture Vocabulary Test at age 5 as compared to children of mothers who reported low or high levels of prenatal stress (Laplante, Brunet, Schmitz, Ciampi, & King, 2008). Based on this work and the work of Hetherington, it is thus possible that under certain circumstances or perhaps with particular groups of individuals, increased exposure to stressors early in life may actually act as a buffer against future stressors. However, given that the vast majority of literature on adjustment to divorce has documented short- and long-term negative outcomes for children, rather than positive outcomes, the hypotheses for this study predict that the combination of parental divorce and offspring divorce will be more detrimental to long-term health than offspring divorce alone.

### **Marital Quality**

Over 150 years of research on marital status has made it clear that marital status has implications for morbidity and mortality, with married individuals having on average, better psychological and physical health outcomes (Farr, 1858; Gardner & Oswald, 2004; Gove, 1973; Hemstrom, 1996; Lorenz, Simons, Conger, Elder, Johnson, & Chao, 1997; Menaghan & Lieberman, 1986; Joung, Stronks, Mheen, Poppel, van der Meer & Mackenback, 1997; Laird & Waite, 1995; Lillard & Panis, 1996; Waite, 1995). However, these aggregate findings mask variation in health among those individuals who are married. One explanation for this variation is marital quality. Differences in marital quality have been linked to both psychological and physiological health outcomes across the life course (Kiecolt-Glaser, Fisher, Ogrocki, Stout, Speicher, & Glaser, 1987). Therefore, in addition to testing whether

or not parental marital status is related to adults' post-divorce health and well-being, the present study also include marital quality as an important covariate.

## **Hypotheses**

The overall goal of this study is to identify potential disparities in health and well-being amongst adults who have experienced a divorce. More specifically, the goal is to determine whether health disparities can be attributed to having experienced a parental divorce during childhood (i.e. before the age of 16) and if so, whether the experience of parental divorce made these adult children more vulnerable to negative health outcomes following their own divorce. To achieve these goals, three hypotheses are tested:

*Hypothesis 1: Double exposure to divorce is associated with poorer positive mental health. Specifically, amongst all individuals who reported having been divorced at least once by the time of the first interview (Time 1), those whose parents were also divorced will report fewer positive mental health outcomes ten years later (Time 2).*

*Hypothesis 2: Double exposure to divorce is associated with greater negative mental health. Specifically, amongst all individuals who reported having been divorced at least once by the time of the first interview (Time 1), those whose parents were also divorced will report more negative mental health outcomes ten years later (Time2).*

*Hypothesis 3: Double exposure to divorce is associated with poorer physical health. Specifically, amongst all individuals who reported having been divorced at least once by the time of the first interview (Time 1), those whose parents were also divorced will report more negative physical health outcomes ten years later (Time 2).*

The literature regarding the differential impact of divorce on men and women is mixed, thus no specific hypotheses were made based on gender differences. In general, many studies find worse health outcomes among women, following a divorce (Aseltine & Kessler, 1993; Williams & Dunne-Bryant, 2006), but others argue that



there are few gender differences and that the disparities found regarding mental health are the result of a gender bias in the most commonly measured outcome, depression. Some suggest that men demonstrate more externalizing behaviors (Horwitz & Davies, 1994), however more recent research has shown no gender differences in behaviors such as alcohol abuse following marital dissolution (Williams & Dunne-Bryant, 2006). Given the diversity in findings related to gender, there are no a priori hypotheses regarding gender, parental divorce, and health outcomes.

## **Method**

### **Data**

The data used in this study are from the national random-digit-dialing (RDD) sample of 1995 MacArthur Foundation National Study of Midlife in the United States (MIDUS I) merged with its 10-year follow-up (MIDUS II) (Brim, Ryff, & Kessler, 2004). The initial MIDUS I RDD sample consisted of 3,032 men and women (49% male) who took part in the initial telephone survey and who also returned two mail questionnaires sent after the telephone survey was conducted. There was significant attrition, however, between MIDUS I and MIDUS II. Data collection for MIDUS II took place between 2004-2006. Of the RDD sample, 65% of the original respondents were retained for the MIDUS II telephone interview; the retention rate was 71% adjusted for mortality. Of the 2,257 (48% male), who were successfully interviewed for MIDUS II, 80% ( $N = 1,805$ ) returned self-administered questionnaires (see Table 1 for further demographic information). Because many of the questions to be addressed in these analyses require use of questions from the self-administered portion of MIDUS II, it is apparent that the sample has become increasingly “select” over time.

## Sample

The two primary comparison groups in this study are a) divorced men and women whose parents were also divorced – the “double exposure” group ( $n=266$ ) and b) divorced men and women whose parents were continually married – the “single exposure” group ( $n=1,143$ ). The double exposure group includes slightly more women (55%,  $n=145$ ) than men. Individuals in the double exposure group are on average 42 years old, have 1.71 biological children at home, and 15.79% ( $n=42$ ) have a youngest child in preschool. The single exposure group also has slightly more women (52%,  $n=590$ ). The individuals in this group are significantly older ( $M=45.85$ ), have on average 1.68 biological children at home, and have a significantly smaller percentage of youngest children in preschool (10.6%,  $n=427$ ).

## Measures

**Parental divorce.** Respondents were first asked if they lived with both of their biological parents until the age of sixteen. If respondents answered “no”, they were asked why not. If respondents answered that their parents were separated/divorced, the respondents were then coded as having experienced parental divorce during childhood.

**Offspring divorce.** Respondents were asked for their own marital status at Time 1 and Time 2. Both times, respondents were asked, “Are you married, separated, divorced, widowed, or never married?” Respondents were coded as “divorced” if that is how they responded. Because this study focuses on *long-term* health, only individuals who report having been divorced or divorced and remarried by the time of the first interview (Time 1) were included.

**Self-esteem.** The MIDUS II survey used a 7-item version of the Rosenberg Self-esteem scale to measure self-esteem at Time 2 (Rosenberg, 1965). Respondents are asked to report on a seven-point Likert scale whether they agree with each these items. The seven items include statements such as, “I take a positive attitude toward myself,” “I wish I could have more respect for myself,” and “On the whole, I am satisfied with myself.” This scale has acceptable internal consistency, with a Cronbach’s alpha of .76.

**Life satisfaction.** The life satisfaction scale used in the present study is based on the life satisfaction scale created by the MIDUS II investigators (Prenda & Lachman, 2001). The MIDUS II life satisfaction scale included five questions for which respondents had to rate overall, on a scale from 0 (the worst possible) to 10 (the best possible), their life, work, health, relationship with spouse/partner, and relationship with children. Since marital quality is controlled for in all of the analyses, that particular question was omitted and replaced with a question that asks respondents to rate their current overall financial situation on the same - 0 (the worst possible) to 10 (the best possible) - scale. The scale was constructed by calculating the mean of the responses across the five questions ( $M = 7.52$ ,  $SD = 1.24$ ). Omitting the question regarding the respondent’s relationship with spouse/partner and adding the question on financial situation increases the scale’s internal consistency from  $\alpha=.64$  to  $\alpha=.70$ .

**Psychological distress.** The psychological distress scale in MIDUS was comprised of six items that were selected from various scales (see Mroczek & Kolarz, 1998 for validation). Respondents were presented with the following prompt: “During the past 30 days, how much of the time did you feel...” The six items included “so sad

nothing could cheer you up”, “nervous”, “restless or fidgety”, “hopeless”, “that everything was an effort”, and “worthless”. Response options ranged from 1 (“all of the time”) to 5 (“none of the time”) on a Likert scale. Answers were reverse coded so that higher scores reflect higher standing in the scale. A mean score was then calculated for all respondents. Cronbach’s alpha for this scale is .83.

**Alcohol abuse.** There are a number of ways alcohol use was measured in MIDUS II. The present study utilized a dichotomous variable for abuse based on a series of four questions: “Did you ever, during the past 12 months, have any emotional or psychological problems from using alcohol – such as feeling depressed, being suspicious of people, or having strange ideas?” “Did you ever, during the past 12 months, have such a strong desire or urge to use alcohol that you could not resist it or could not think of anything else?” “Did you have a period of a month or more during the past 12 months when you spent a great deal of time using alcohol or getting over its effects?” “Did you ever, during the past 12 months, find that you had to use more alcohol than usual to get the same effect or that the same amount had less effect on you than before?”. Responses were coded as “1” if the respondent answered affirmatively to any of the questions.

**Physical illness.** MIDUS II included a measure of physical health conditions, which was comprised of a checklist of 29 diseases/symptoms than an individual may have experienced or been treated for in the previous 12 months. Checklists of physical symptoms have been utilized in other studies, including studies on marriage (Wickrama, Lorenz, Conger & Elder, 1997) in which marital quality was found to be associated with a simple count of physical health conditions. In this study, three

different versions of the checklist are utilized to assess the potential relationship between parental marital status and physical health. Since psychosocial and environmental stressors are related to multisystem physiological dysregulation, including immune, metabolic, and cardiovascular function, the checklists are designed to reflect this multifaceted relationship. For Version 1 and Version 2 of the checklist, affirmative responses were coded as “1” and then summed to create a count score. Version 3 is calculated a little differently, and described in more detail below.

Version 1 of the checklist included 26 of the original 29 conditions. Three of the conditions – depression/anxiety, alcohol/drug problems, and sleeping problems – were omitted due to theoretical and empirical confounding issues with psychological well-being ( $M = 1.11$ ,  $SD = 1.95$ ). This version of the checklist was intended to address the question of global immune function. Repeated exposure to stressors across the lifespan is associated with an increased risk for morbidity and mortality, including a number of different diseases and disorders. Theoretically, if double exposure to divorce increases the number of life course events, an individual with double exposure would experience decreased immunity and a thus a greater number of physical health conditions.

In addition to global immune function, researchers have identified specific physical health conditions and diseases that are associated with allostatic load and accelerated aging. Again, these conditions represent dysregulation of a number of physiologic systems including immune, metabolic, and cardiovascular. In an attempt to determine if individuals with double exposure to divorce are more susceptible to stress-related disease, Version 2 of the checklist included a subset of 8 of these

diseases/conditions, including: high blood pressure/hypertension, stroke, ulcers, diabetes, lupus/other autoimmune disorders, asthma, persistent trouble with gums, and persistent trouble with teeth ( $M = 0.42$ ,  $SD = 0.86$ ).

Despite the fact that all of the individuals in this study have been divorced for at least 10 years, the sample is relatively young ( $M = 45.23$ ) and sufficient time may not have elapsed for physiological dysregulation to have escalated to levels that are clinically significant. However, it has been suggested that of many biological systems affected by psychosocial and environmental stressors, the cardiovascular system may be the most susceptible (McEwen, 1998). Indeed, some of the most compelling work in stress research has found consistent evidence for the relationship between exposure to stressors and cardiovascular disease (e.g. Seeman et al., 2007). Therefore, Version 3 of the checklist included 2 indicators of cardiovascular health: high blood pressure/hypertension and stroke. Responses were scored as “1” if the respondent experienced or was treated for any of these indicators in the previous 12 months. If the respondent had not experienced or been treated for any of these indicators, responses were scored as “0” ( $M = 0.14$ ,  $SD = 0.35$ ).

### **Demographic Controls**

The focus of this study is the potential health disparities between divorced adults who experienced parental divorce and divorced adults whose parents were continually married throughout their childhood. Therefore it is important to consider any baseline differences in relevant demographic information. The demographic variables included in the present study were: age, sex (0=male, 1=female), race (1=black), total household income, respondent’s level of education (dummy coded for

less than 12 years, 12 years (reference group), 13-15 years, and 16 or more years), the number of children (biological and nonbiological) in the home, and having a youngest child in preschool as demographic controls.

### **Marital Covariates**

**Marital quality.** Over the past few decades, marital quality has been assessed in numerous ways including levels of satisfaction, conflict, and happiness to name a few (e.g. Kiecolt-Glaser & Newton, 2001). In this study, a scale called “marital risk” was utilized to serve as the measure of marital quality. This scale, described in detail below, includes a number of items that attempt to measure the relative risk of relationship dissolution. Although this scale is different from the perhaps more traditional measures of marital satisfaction or marital conflict, it draws upon some of the same constructs within the individual items.

The marital risk scale was developed by the MIDUS investigators and included five items. These are, “During the past year, how often have you thought your relationship might be in trouble?”, “Realistically what do you think the chances are that you and your partner will eventually separate?” The other three items are in response to the prompt, “How much do you and your spouse or partner disagree on the following issues?” and include, “Money matters, such as how much to spend, save, or invest”, “Household tasks, such as what needs doing and who does it”, and “Leisure time activities, such as what to do and with whom.” Cronbach’s alpha for this scale is .77.

**Remarried.** Research indicates that individuals who remarry following a divorce report higher levels of health and well-being than individuals who do not

remarry following divorce (Amato, 2000). Individuals who reported having experienced a divorce before Time 1 and subsequently report being married at Time 2 were identified as “remarried”. For the analysis, the remarriage variable was constructed as a dichotomous variable where remarried was scored as “1”.

**Life events/Accumulation of stress.** The MIDUS study was specifically designed to measure exposure to life events. The second wave of the study included a series of questions to determine if individuals had ever been exposed to particular life events during adolescence or adulthood (see Appendix A). The questions in MIDUS include 27 life events across several domains (e.g. education, family, employment, health). One of these items – parental divorce – was eliminated because it is already accounted for as a covariate in all of our analyses. Six additional childhood event items were then added to the list: 1) multiple moves as a child, 2) family ever on welfare during childhood, 3) negative relationship with one or both parents, 4) low-quality neighborhood, 5) job strain, and 6) financial strain. These additions seemed appropriate because of their use in previous studies of lifetime exposure to life events and chronic stress (e.g. Turner, Wheaton, & Lloyd, 1995).

For 27 these questions, respondents replied either “yes” if the event had ever occurred or “no” if it had not; affirmative answers were coded as “1”. The 5 remaining questions regarding: multiple moves as a child, negative relationship with one or both parents, low-quality neighborhood, job strain, and financial strain were based on index scores which were dichotomized for this measure.



***Multiple moves.*** Respondents were asked how many times his or her family moved to a different neighborhood during childhood. Responses were coded as “1” for this study if the family moved to a new neighborhood more than once.

***Negative relationships.*** Respondents were asked two questions in the MIDUS study, “How would you rate your relationship with your mother (or the woman who raised you) during the years you were growing up?” and “How would you rate your relationship with your father (or the man who raised you) during the years you were growing up?” Response options ranged from 1- excellent to 5 – poor. For this study, responses were coded as “1” if respondents reported either a “fair” or “poor” relationship with either their mother or father.

***Neighborhood quality.*** Perceived neighborhood quality is measured with four statements: “I feel safe being out alone in my neighborhood during the daytime,” “I feel safe being out alone in my neighborhood at night”, “I could call on a neighbor for help if I needed it”, and “People in my neighborhood trust each other”. Answers were coded as 1- not at all, 2- a little, 3-some, 4-a lot. The scale was then constructed by taking the mean of the values. For this study, we dichotomized these responses, assigning “1” if the mean was 16 or below. In other words, we assigned a “1” to those individuals who responded either “not at all” or “a little” to each of the four questions.

***Job strain.*** A number of job characteristics are measured in the MIDUS study. Consistent with previous work, job strain in this study reflects both low decision authority and high demands. Decision authority is measured using six questions: “On your job, how often do you have to initiate things – such as coming up with your own ideas or figuring out on your own what needs to be done?” “How often do you have a

choice in deciding how you do your tasks at work?” “How often do you have a choice in deciding what tasks you do at work” “How often do you have a say in decisions about your work?” “How often do you have a say in planning your work environment – that is, how your workplace is arranged or how things are organized”” and “How often do you control the amount of time you spend on tasks”. Demands are measured using five questions: “How often do you have to work very intensively – that is, you are very busy trying to get things done” “How often do different people or groups at work demand things from you that you think are hard to combine?” “How often do you have too many demands made on you?” “How often do you have enough time to get everything done?” (reverse coded) and “How often do you have a lot of interruption. Response options for both the decision authority and demands measures range from 1 – never to 5 – all of the time. Summary scores were then created for each measure such that higher scores reflect higher standing in the scale. Job strain in this study was coded as “1” if decision authority was low (sum score of 24 or above) and demands were high (sum score of 10 or below).

***Financial strain.*** Financial strain was assessed many ways in the MIDUS study. For the purposes of the current study, a single question measuring financial strain was used: “In general, would you say you (and your family living with you) have more money than you need, just enough for your needs, or not enough to meet your needs.” Responses were dummy coded as “1” if the respondent said “not enough money” and “0” if the respondents said “more money” or “just enough money”.

A summary score of life events, including the 27 checklist events and the 5 events constructed for this study was created. Number of life events experienced by

individuals in this sample ranged from 0 to 14 with a mean of 3.19 and a standard deviation of 2.80.

### **Analytic Strategy**

A series of multiple regression analyses were conducted using Stata 11 (StataCorp, 1999) to determine whether or not parental marital status influenced the long-term health outcomes of adult offspring, following their own divorce. Time 1 demographic variables, Time 1 measures of the dependent variables (when available), and marital quality were all utilized in the regression analysis. In addition, because MIDUS oversampled certain populations (see Brim, Baltes, Bumpass, Cleary, & Featherman, et al., 2000), sampling weights were also included in each of the analyses to account for this bias.

The first set of multivariate regression analyses tested the relationship between parental divorce status and the two measures of Time 2 positive well-being (i.e. self-esteem and life satisfaction), while controlling for demographic characteristics and Time 1 well-being. The second set of regression analyses tested the relationship between parental divorce status and the two measures of Time 2 negative health and well-being (i.e. psychological distress and alcohol abuse). Multivariate linear regression was utilized for the analysis of psychological distress, but because alcohol abuse was constructed as a dichotomous variable, multivariate logistic regression was employed for this particular analysis. In the third and final set of analyses, multivariate linear regression was utilized to test the relationship between double exposure to divorce and the number of self-reported physical health conditions. Similar to the measure for alcohol abuse, Version 3 of the physical health checklist

contained a dichotomous variable and thus required multivariate logistic regression for the analysis.

## **Results**

### **Sociodemographic Variables**

A total of 1,625 respondents were included in this study, with slightly more women (53%) than men. The mean age of this sample was 45.23 and was well-educated (59% have some college education and 26% have 16 years of formal schooling or more). Approximately 12% of the respondents reported having a youngest child in preschool, which is consistent with the average age of the respondents. Of particular importance to this study, 19% of respondents – all of whom have experienced at least one divorce of their own – also reported having experienced parental divorce during their childhood (see Table 3.1 for complete results).

Since the central question of this study was whether or not health disparities exist between two groups of individuals – those who experienced a parental divorce during childhood and those who did not – it was important to determine if there were any significant differences between these two groups prior to the analyses. A series of two-sample t-tests were conducted on the demographic variables and the results were then adjusted using a Bonferroni correction for multiple comparisons. The results yielded only one significant difference between the two samples; in the MIDUS II dataset, individuals who experienced both their parent's divorce and their own were younger ( $M=42.04$ ), on average, than individuals who experienced only their own

divorce ( $M=45.85$ ;  $p<.001$ ). None of the other comparisons reached statistical significance.

Table 3.1 Means and Standard Deviations of Study 2 Variables

	Mean	Standard Deviation	Range
<b>Demographic Characteristics</b>			
Age (years)	45.23	12.66	20-74
Gender (1=female)	53%		
Race (1=black)	8%		
<b>Education</b>			
Less than high school education	12%		
High school education or GED	28%		
Some college	33%		
College, Graduate school	26%		
Household income*	46,182	43,643	0-300,000
Number of biological children at home	1.69	1.52	0-5
Number of non-biological children at home	0.47	1.05	0-5
Youngest child in preschool	12%		
Marital quality	2.00	0.72	1-4.8
Remarried (1=yes)	24%		
Number of life events	3.19	2.80	0-19
Parents divorced (1=yes)	19%		
<b>Outcomes</b>			
Self-Esteem	37.28	7.71	7-49
Life satisfaction	7.52	1.24	0-10
Distress	1.57	0.64	1-5
Alcohol use	0.56	0.5	0-1
<b>Physical health conditions</b>			
Version 1 - Global health	1.11	1.95	0-26
Version 2 – Allostatic load indicators	0.43	0.86	0-9
Version 3 - Cardiovascular only	0.14	0.35	0-1

### **Hypothesis 1 – Double Exposure to Divorce and Positive Well-Being**

A series of multiple regression analyses were conducted to test whether adult children of divorce self-report lower levels of positive psychological well-being

following their own divorce (i.e. double exposure group) compared with adult children of continuously married parents (i.e. single exposure group). Contrary to expectations, results indicated that individuals who experience double exposure to divorce report significantly higher levels of life satisfaction at Time 2 ( $b = .47, p < .05$ ). The relationship between parental marital status and self-esteem at Time 2 was not significant. Consistent with previous research, low marital quality at Time 1 also significantly predicts both life satisfaction ( $b = -0.38, p < .01$ ) and self-esteem ( $b = -1.91, p < .01$ ) at Time 2. Interestingly, the number of life events an individual has been exposed to across the life course was significantly related to life satisfaction ( $b = -0.18, p < .001$ ), but not self-esteem. Total household income ( $b = 0.24, p < .05$ ) and having either some college experience ( $b = 2.23, p < .05$ ) or a college degree ( $b = 3.75, p < .01$ ) were stronger predictors of self-esteem than life events.

### **Hypothesis 2 – Double Exposure to Divorce and Negative Well-Being**

In addition to the two measures of positive psychological well-being, multivariate analyses were also conducted to test whether or not double exposure to divorce is associated with long-term negative psychological well-being, namely – psychological distress and alcohol abuse (Table 3.2). There was mixed support for the hypothesis that double exposure to divorce would be associated with higher levels of negative psychological well-being. Similar to the pattern with positive well-being, double exposure to divorce was associated with significantly lower levels of Time 2 psychological distress ( $b = -0.20, p < .01$ ). However, consistent with the hypothesis, results indicated that individuals who experience their parent's divorce as well as their own were significantly more likely to report alcohol abuse in the previous year ( $OR =$

2.59,  $p < .05$ ). In addition to parental marital status, life events significantly predicted both distress ( $b = .04$ ,  $p < .01$ ) and alcohol abuse ( $OR = .56$ ,  $p < .001$ ). Finally, remarriage was a significant predictor of Time 2 psychological distress such that those individuals who report being remarried at Time 2 also report higher levels of psychological distress ( $b = .18$ ,  $p < .01$ ).

### **Hypothesis 3 – Double Exposure to Divorce and Physical Health**

Exposure to divorce has been repeatedly linked to negative outcomes for children as well as adults. More specifically, divorce typically results in changes in social networks, geographic moves, and changes in financial situations – all of which are associated with lower levels of well-being (Amato, 2000). Given the consistent findings on the relationship between exposure to divorce and negative outcomes, the present study hypothesized that individuals who were exposed to two divorces (i.e. their parent's and their own) would report a greater number of long-term physical health conditions. Surprisingly, the results suggest the opposite is true.

Results indicate that individuals who experienced double exposure to divorce reported significantly fewer physical health conditions (Table 3.3). This was true for all three versions of the physical checklist we constructed. For Version 1, the most comprehensive measure of physical health with 26 potential conditions/diseases, individuals who experienced double exposure to divorce reported significantly fewer conditions ( $b = -0.67$ ,  $p < .01$ ) than individuals whose parents were continually married. Version 2 of the checklist included 9 items that have been empirically linked to allostatic load and increased morbidity and mortality.

Table 3.2 Time 1 Predictors of Time 2 Psychological Well-Being, Multivariate Regression

	Linear Regression			Logistic Regression		
	Self-Esteem	Life satisfaction	Psychological Distress	Alcohol Abuse	95% CI Lower Bound	95% CI Upper Bound
Age	0.08 †	0.01	0.00	0.98	0.95	1.02
Gender (1=female)	-0.55	0.19	0.03	0.63	0.33	1.19
Race (1=black)	-0.22	-0.13	0.07	3.64 *	1.01	13.10
Household income	1.52 *	0.24 *	-0.03	0.90	0.60	1.35
Level of education						
Less than 12 years	-0.90	0.11	0.11	0.92	0.19	4.38
13-15 years	2.23 *	0.17	-0.12 †	1.24	0.61	2.53
16 years or more	3.75 **	0.25	-0.12	0.42 †	0.17	1.02
Biological children	0.36	0.00	0.00	1.07	0.83	1.37
Non-biological children	0.36	0.06	-0.02	1.39 **	1.10	1.76
Youngest in preschool	-1.55	0.08	-0.05	1.18	0.53	2.60
Life events	-0.12	-0.18 ***	0.04 **	0.56 ***	0.48	0.66
T1 Distress			0.47 ***			
T1 Alcohol abuse				3.85 ***	1.80	8.21
Marital Quality	-1.91 **	-0.38 **	0.06	1.40	0.87	2.26
Remarried (1=yes)	-1.36	-0.41 †	0.18 **	1.07	0.53	2.16
Parental Divorce	1.75	0.47 *	-0.20 **	2.60 *	1.18	5.70
Constant	18.64	5.82	1.17			
N	306	229	296	296		
R <sup>2</sup>	0.16	0.26	0.41	0.28		

†p &lt; .10 \*p &lt; .05 \*\*p &lt; .01 \*\*\*p &lt; .001



Table 3.3 Time 1 Predictors of Time 2 Physical Health, Multivariate Regression

	Linear Regression		Logistic Regression			
	Version 1 - Global Illness	Version 2 - Cardiovascular, Metabolic, Immune Conditions/Symptoms	Version 3 - Cardiovascular Conditions/Symptoms	95% CI Lower Bound	95% CI Upper Bound	
Age	0.02	0.02 **	1.05 **	1.01	1.08	
Gender (1=female)	0.43 *	0.16 †	1.86 †	0.98	3.53	
Race (1=black)	0.65	0.38 †	3.53 †	0.90	13.91	
Household income	-0.28 *	-0.03	1.21	0.78	1.85	
Level of education						
Less than 12 years	-0.20	0.12	0.81	0.22	2.99	
13-15 years	-0.16	0.06	0.72	0.34	1.54	
16 years or more	0.04	0.10	0.77	0.32	1.84	
Biological children	0.06	0.02	1.08	0.84	1.38	
Non-biological children	-0.06	-0.06	0.89	0.69	1.15	
Youngest in preschool	0.03	0.10	0.68	0.25	1.86	
Life events	0.22 ***	0.09 ***	1.39 ***	1.22	1.58	
T1 Version 1	0.42 ***					
T1 Version 2		0.42 ***				
T1 Version 3			20.19 ***	8.55	47.64	

†p < .10 \*p < .05 \*\*p < .01 \*\*\*p < .001

Table 3.3 Time 1 Predictors of Time 2 Physical Health, Multivariate Regression, continued

Marital quality	-0.09	0.02	0.91	0.58	1.43
Remarried (1=year)	0.09	0.03	1.48	0.73	3.03
Parental Divorce	-0.67 **	-0.20 †	0.22 **	0.08	0.59
Constant	2.59	-0.53			
N	371	371	371		
R <sup>2</sup>	0.35	0.32	0.30		

†p < .10 \*p < .05 \*\*p < .01 \*\*\*p < .001

For this checklist, individuals who experienced double exposure to divorce reported marginally significantly fewer conditions ( $b = -0.20, p < .10$ ) than individuals whose parents were continually married. Finally, multivariate logistic regression was utilized to determine the likelihood that an individual with a double exposure to divorce would report having experienced or been treated for either high blood pressure/hypertension or a stroke in the previous year. As was the case with the other checklists, the results from Version 3 suggested that individuals with a double exposure were significantly less likely to have experienced or been treated for a cardiovascular condition in the previous year ( $OR=0.22, p < .01, 95\% \text{ CI } [0.08, 0.59]$ ).

In the analysis for each of the three checklists, the number of life course events was significantly, positively related to physical health outcomes ( $p < .001$ ). In addition to life course events, sex ( $b = 0.43, p < .05$ ) and household income ( $b = -0.28, p < .05$ ) significantly predicted physical health conditions for the Version 1 checklist, and age significantly predicted physical health conditions for the Version 2 checklist ( $b = 0.02, p < .01$ ) as well as the Version 3 checklist ( $b = 1.05, p < .01$ ).

## **Discussion**

Experiencing a divorce has been widely associated with changes – predominantly negative changes – in well-being (Amato, 2000; Waite, Luo & Lewin, 2009). Researchers often describe the experience of a divorce as a stressful process, often resulting in economic, geographic, social, and emotional changes in an individual's life. Recent research on stress processes suggests that exposure to multiple or chronic stressors like divorce can also have a negative impact on an individual's physical health (McEwen, 1998). According to this research, multiple or

chronic exposure places an individual at risk for increased morbidity and mortality (Seeman, Singer, Rowe, Horowitz, & McEwen, 1997). This study tested the hypothesis that exposure to more than one divorce and its negative sequelae would, over the long-term, be associated with poorer health and well-being.

Unexpectedly, the results from this study indicate that double exposure to divorce was not significantly associated with lower levels of long-term well-being as compared to individuals who had only been exposed to their own divorce. However, marital quality was a very good predictor of long-term well-being. This finding is consistent with other research on the relationship between marital quality, marital transitions, and well-being. Low-quality marriages have been associated with an increase in psychological distress (e.g. Barnett, Brennan, Raudenbush, & Marshall, 1994; Fincham, Beach, Harold, & Osborne, 1997) and at least one group of researchers has suggested that the quality of the marital role is a stronger predictor of stress-related mental health outcomes than role occupancy (Barnett, Steptoe, & Gareis, 2005).

In contrast, double exposure to divorce was associated with long-term negative health, but not in the hypothesized direction. The most compelling finding was that individuals who experienced their own divorce as well as that of their parents' reported fewer chronic health conditions than individuals whose parents were continually married. This finding may appear to be inconsistent with perspectives of stress accumulation/proliferation, but can perhaps be better explained by macro-level factors such as the culture of divorce as well as micro-level factors such as cognitive appraisal.

In the past couple of decades, researchers have suggested that adjustment to divorce may be mitigated by the changing culture of divorce in the United States. While stigmatization surrounding parental divorce seems to be declining for both male and female children of divorce, Whitton et al. (2008) report gender differences in commitment to and confidence in marriages. Specifically, for women, parental divorce is associated with lower commitment to, and confidence in, their marriage; this relationship was not found for men.

In addition to the changing culture of divorce, micro-level facts such as cognitive appraisal may serve as both a protective factor for adult children of divorce as well as a potential risk factor for adult children of continuously married parents. Adult children of divorce may in fact benefit from their parents' divorce in that they already have a model of adjustment. Adult children whose parents were continuously married on the other hand do not have a model of adjustment and further, may evaluate themselves and the situation more negatively when using their parents' marriage as a point of comparison.

There are a few limitations to the present research. First, the number of individuals who have experienced marital dissolution is comparatively small in the MIDUS dataset, this precluded additional analyses (e.g. gender differences), which could provide greater insight into this area of research. In addition, despite the detailed information on health conditions provided by the respondents, caution should be used when interpreting the results given that the information was based on self-report. Future research would benefit from the inclusion of objective medical records in lieu of self-report. Finally, our measure of chronic health conditions is merely an

indirect measure of how increased exposure to stressors may influence long-term health and well-being and requires validation.

## **Conclusion**

The results of this study provide three new insights regarding the association between the parental divorce and long-term health and well-being. The first is that individuals who have experienced their own divorce, as well as their parents', do not differ from individuals whose parents were continuously married on measures of self-esteem, life satisfaction, and self-acceptance. Second, for these three positive outcomes, marital quality is a better predictor of long-term well-being than parental marital status. Finally, and probably most interestingly, individuals whose parents are continually married report a significantly greater number of chronic health conditions following their own divorce than individuals whose parents were divorced. It appears as though parental divorce acts as a protective factor for the impact of stressors on long-term health. This last point merits further exploration.

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## **APPENDIX A**

### **List of life course stressors/events**

#### **Childhood:**

1. More than one move to a new neighborhood
2. Family ever on welfare or ADC
3. Ever sent away from home
4. Negative relationship with one or more parent
5. Ever had a parent out of a job
6. Ever had a parent drink cause problems
7. Ever had a parent drugs cause problems

#### **Adulthood**

8. Ever experienced combat
9. Ever fired from a job
10. Ever unemployed for a long time
11. Ever had a parent die
12. Ever had a sibling die
13. Ever had a child die
14. Ever had a child with a life-threatening illness
15. Ever lost home to fire/flood/etc
16. Ever been physically assaulted
17. Ever been sexually assaulted
18. Ever had serious legal difficulty
19. Ever been to jail
20. Ever declared bankruptcy
21. Ever experienced financial loss unrelated to work
22. Ever been on welfare in adulthood
23. Ever entered armed forces
24. Poor neighborhood quality
25. Job strain
26. Not enough money to meet needs
27. Ever dropped out of school
28. Ever repeated a grade
29. Ever suspended or expelled
30. Ever flunked out of school
31. Spouse ever engaged in infidelity
32. Ever experienced significant difficulty with in-laws

## APPENDIX B

### List of chronic health conditions in MIDUS II

1. Asthma, bronchitis, or emphysema\*†
2. Tuberculosis\*
3. Other lung problems\*
4. Arthritis, rheumatism, or other bone or joint diseases\*
5. Sciatica, lumbago, or recurring backache\*
6. Persistent skin trouble (e.g. eczema)\*
7. Thyroid disease\*
8. Hay fever\*
9. Recurring stomach trouble, indigestion, or diarrhea\*
10. Urinary or bladder problems\*
11. Being constipated all or most of the time\*
12. Gall bladder trouble\*
13. Persistent foot trouble (e.g., bunions, ingrown toenails)\*
14. Trouble with varicose veins requiring medical treatment\*
15. AIDS or HIV infection\*
16. Lupus or other autoimmune disorders\*†
17. Persistent trouble with your gums or mouth\*†
18. Persistent trouble with your teeth\*†
19. High blood pressure or hypertension\*†‡
20. Anxiety, depression or some other emotional disorder
21. Alcohol or drug problems
22. Migraine headaches\*
23. Chronic sleeping problems
24. Diabetes or high blood sugar\*†
25. Multiple sclerosis, epilepsy, or other neurological disorders\*
26. Stroke\*†‡
27. Ulcer\*†
28. Hernia or rupture\*
29. Piles or hemorrhoids\*

\* Version 1 checklist items, † Version 2 checklist items, ‡ Version 3 checklist items



CHAPTER 4

THE COMPLEX RELATIONSHIP BETWEEN  
NEGATIVE MARITAL INTERACTIONS, SOCIAL SUPPORT, AND WELL-  
BEING:  
DOES SOURCE OF SUPPORT MATTER?

**Abstract**

It is widely understood that social support contributes to health and well-being, particularly for those individuals who are exposed to an increased number of environmental and inter-personal stressors. However, the stress-support-health relationship is highly specific, operating under certain conditions and across particular domains. This study utilizes data from the Midlife Development in the United States (MIDUS II) longitudinal dataset to extend previous research by including job support as a potential buffer between negative marital interactions and individual level-health and well-being. Results indicate that while friend support may moderate the relationship between negative marital interactions and health for women, job support does not moderate the relationship for either gender. Interestingly, family support appears to negatively influence health for individuals in high negative marital interactions relationships.

**Background**

Despite the wealth of research that points to the protective health benefits of marriage, low-quality marriages appear to be particularly detrimental to health and well-being (Waite & Gallagher, 2000; Hawkins & Booth, 2005). In particular, having a low-quality marital relationship is associated with a number of psychological outcomes,

including higher levels of depression and negative affect, and lower levels of positive affect, self-esteem, and life satisfaction (see Proulx, Helms & Buehler, 2007 for a review). In addition, low-quality marital relationships have also been linked to negative physical outcomes including increased number of physical illness (Wickrama et al., 1997) as well as increased risk of mortality (House, Landis, & Umberson, 1988). It is hypothesized that negative marital quality influences health outcomes indirectly through health behaviors, but also directly via associations with cardiovascular, neuroendocrine, and immune function (Kiecolt-Glaser & Newton, 2001). Thus, it is clear that marital quality has important implications for health and well-being.

One defining aspect of marital quality, particularly as it relates to health, is negative marital interactions. For example, Kiecolt-Glaser's research team has been able to demonstrate in laboratory studies that hostility and conflict between spouses or partners can compromise cardiovascular and endocrine function and decrease immune function (e.g. Kiecolt-Glaser et al., 1987; Kiecolt-Glaser et al., 2005; Kiecolt-Glaser & Newton, 2001). In addition, Eaker et al. (2007) found that "women who 'self-silenced' during conflict with their spouse, compared with women who did not, had four times the risk of dying" in the Framingham Offspring Study (p. 509). Conflict is believed to be particularly detrimental to health because it causes the activation of the hypothalamic-pituitary-adrenal (HPA) axis.

Activation of the HPA axis is part of an individual's normal stress response; it causes a number of biological changes, including an increase in hormones and blood flow, which can facilitate the resolution of the environmental challenge, while

simultaneously placing other, less immediately important biological processes on hold (e.g. digestion) (Sapolsky, 2004). This adaptive response operates best when it is rapidly activated and quickly terminated. The response can become maladaptive however, under four different conditions: frequent activation, lack of adaptation to repeated stressors, a prolonged response, and an inadequate response (Juster, McEwen, & Lupien, 2009). In the long-term, these maladaptive responses result in an increased risk for morbidity and mortality (McEwen, 1998). For individuals in a high-conflict relationship, frequent activation of the HPA axis is the most likely mechanisms through which exposure to a stressor (i.e. interpersonal conflict) can lead to long-term negative health outcomes.

Given the strength of the findings regarding the health consequences of negative marital interactions, it is important to identify potential moderators of the relationship. The goal of the present study is to extend this research on the relationship between negative marital interactions and health by identifying sources of social support – namely, friend support, family support, and job support - that may be effective in moderating this relationship.

### **The Role of Social Support**

In addition to the numerous research studies linking marital quality and negative health outcomes, a second, related line of research has developed in parallel to the marital quality research. Over the past four decades, research has emerged which demonstrates a relationship between social support and individual health and well-being (Cohen & Wills, 1985; House et al., 1988; Thoits, 1982; 1995; Walen & Lachman, 2000). Thoits (1982), referencing Kaplan et al.'s (1977) work, defines

social support as “the degree to which a person’s basic social needs are gratified through interaction with others” (p. 147). Despite this seemingly straightforward definition, support has been measured and analyzed in many different ways. This is probably due to the fact that social support and social relationships are conceived as multidimensional constructs.

One way in which researchers distinguish different aspects of *social support* is by type of support given. In their review of the social support literature, Cohen and Wills (1985) list four types of support: esteem (also referred to as “emotional”), informational, social companionship, and instrumental. While the authors note that these types are not mutually exclusive in natural settings, research has been able to demonstrate varying levels of impact on mental and physical health outcomes based on type of social support and outcome measures (Cohen, 2004; Kawachi & Berkman, 2001; Kessler, Price, & Wortman, 1985; Uchino, 2006). In addition, perhaps one of the most intriguing findings in this line of research is that *perceived* emotional support – more so than actual receipt of support – is predictive of health and well-being (Dunkel-Schetter & Bennett, 1990; Kawachi & Berkman, 2001; Rosengren, Orth-Gomer, Wedel, & Wilhemson, 1993; Thoits, 1995; Wethington & Kessler, 1986).

Researchers studying the role of social support on health have utilized two models to explain the social support and health relationship: a main-effects model and a stress-buffering model, and there is strong evidence for both (Cohen, 2004; Cohen & Wills, 1985). However, recent research suggests that different types of social relationships influence health through different mechanisms. Both models are tested in the present study, but focus on the stress-buffering model to explain the relationship

between low marital quality and health. Recent research suggests that the buffering best explains how social support (as opposed to social integration or negative interactions) may influence health outcomes (Cohen, 2004; Thoits, 1982).

### *Within Versus Cross-Domain Support*

Thoits (1982) posits that social support – broadly defined – can buffer the deleterious effects of stress. However, given the multidimensional nature of support, it is possible that different sources of support are associated with variation in the strength of the buffering effect or perhaps even different outcomes. More specifically, research in this area focuses on two types of potential buffers: within and cross-domain support. Within domain buffering suggests that the support one receives from a social relationship (e.g. spouse) may mitigate the effects of a negative interaction with that same social partner. Cross-domain support suggests that negative interactions with one social partner (e.g. spouse) can be mitigated by support from individuals who represent a different social context (e.g. coworker or friend). Empirical work in this area finds mixed results. In their study on positive and negative exchanges with younger and older adults, Okun and Kieth (1998) find support for a within-domain buffering effect for the young adults in the study, but found a cross-domain buffering effect for the older adults. Shuster, Kessler, and Aseltine (1990) found mixed support for a within-domain buffering effect. Using measures of supportive and negative interactions for each of three relationships: spouses, relatives, and friends, Schuster et al. (1990) found a within-domain buffering effect on depression for relatives, but not for marital relationships. Walen and Lachman (2000) found somewhat more support for a cross-domain buffer effect than a

within-domain buffer effect using a scale very similar to the one employed by Schuster et al. (1990), although the authors point out that the amount of variance explained by the interactions is small.

One reason that is often cited in the literature for the lack of interaction effect between negative marital interactions and marital support specifically is that the two variables are highly correlated. When testing for the interaction between two variables, the assumption is that the two variables in the interaction term are independent (Lepore, 1992; Walen & Lachman, 2000). This is often not the case in marital relationships. Therefore the potential for a within-domain interaction effect for married individuals has two significant limitations; the first is statistical: the interaction terms are too highly correlated to detect a buffer effect. The second limitation is conceptual: individuals in low-quality marriages, characterized by a high degree of negative marital interactions are also more likely to be characterized by a lack of support. In other words, individuals who report high levels of negative marital interactions aren't likely to receive the support from their partner that could potentially buffer the strain.

For the marital relationship in particular then, it is important to determine whether or not support from other domains can buffer negative marital interactions. Lepore (1992) first referred to this as the "cross-domain buffering" effect, which posits that social support from one domain can ameliorate the negative effects of strain in another domain. In his study on relationships among college undergraduates, Lepore (1992) did find that support for the cross-buffering effect such that friend support buffered conflicts with roommates and roommate support buffered conflicts

with friends. Walen and Lachman's (2000) findings suggest that cross-domain support has greater buffering effects than within-domain support, however their study was limited to three social relationships: partner, family, and friend. More recent research has begun to examine the potential benefits of supportive work environments on relationships at home.

### **Work Support as Buffer to Negative marital interactions**

Past research on social support has focused primarily on individuals' roles as a spouse, kin, or friend (Cohen, 2004; Thoits, 1995). In addition, there are a number of studies which report an association between work-related stress and negative outcomes at home (e.g. Repetti & Saxbe, 2009), but relatively little has been done to examine the potential relationship between positive social relationships at work and negative social relationships at home.

There is some evidence in the social support literature that a supportive work environment may buffer the negative effects of a spousal relationship. Specifically, most studies which examine buffering effects of support under conditions of chronic strain note that these effects are stronger across rather than within domains (e.g. Walen & Lachman, 2000). The one notable exception is Okun and Keith's (1998) study, which finds support for within-domain buffering for the younger sample (ages 28-59).

However, the focus of the current study is specifically in whether or not support from individuals (i.e. friends, family, coworkers) can compensate for lack of support in a marital relationship. Recent evidence suggests that this is possible. In a large, multi-center study, Rini et al. (2008) examined the role of social support from friends and family as a potential buffer to low spousal support, specifically among

mothers whose children were hospitalized with a critical illness. Using multilevel modeling to assess physical health-related functioning following children's hematopoietic stem cell transplantation, the authors found that high levels of family and friend support buffered the negative health effects of low spousal support. Mothers who had low levels of spousal support, but high levels of family and friend support demonstrated significantly better functioning than mothers with low spousal support (Rini et al., 2008). This functioning was statistically comparable to that of mothers with high spousal support (Rini et al., 2008).

Not everyone agrees that support from other domains can compensate for low support in a marital relationship. Coyne and DeLongis (1986) argued that marital support is uniquely beneficial, and cannot be replaced by support from others. These authors cited data from the late 1970s and early 1980s to support their argument. There may be reason to believe that the nature of marital support as well as support in other domains, specifically work, may have changed over the last thirty years. Perhaps most significantly, more men and women are spending more time at work and with coworkers now than in the late 1970s (Rones, Ilg, & Gardner, 1997). The increasing salience of the work domain may increase the impact that work characteristics may have on life at home. In addition, now that many marriages are dual-earner suggests that support from work may play a critical role in daily support processes even at home (Winkler, 1998).

### **Gender Differences**

The vast majority of the literature on social support includes tests for gender differences, but the results are somewhat mixed. Most studies find that women report



larger networks, more perceived support and more support provision (Antonucci & Akiyama, 1987; others). However, analyses of buffering effects yield inconsistent. Okun and Keith (1998) find no evidence of gender differences. Walen and Lachman (2000) found that several of the cross-buffering relationships among partners, friends, and family were stronger for women than for men.

### **Hypotheses**

The primary goal of the present study to identify sources of social support, including friend, family, and job support, that are effective in buffering the impact of negative marital interaction on health. To achieve this goal, three specific hypotheses were tested:

*Hypothesis 1a: Negative marital interactions are associated with health and well-being. Specifically, individuals who report higher levels of negative marital interaction will report lower levels of health and well-being.*

*Hypothesis 1b: Social support is associated with health and well-being. Specifically, individuals who report higher levels of friend, family, or job support will report higher levels of health and well-being.*

*Hypothesis 2: Social support will mitigate the negative impact of negative marital interaction on health and well-being. Specifically, the relationship between negative marital interactions and health and well-being will be weaker amongst those individuals who also report high levels of friend, family, or job support.*

There is mixed evidence regarding gender differences in cross-domain buffering, but where differences have been detected, research has found that these effects are greater for women. However, there is some reason to believe that job support may be particularly beneficial for men given the salience of the work role to the male identity (e.g Barnett & Baruch, 1987). Taking this mixed evidence into

account, no gender-specific predictions regarding cross-domain buffering effects are made.

## **Method**

### **Data**

The data used in this study are from the national random-digit-dialing (RDD) sample of 1995 MacArthur Foundation National Study of Midlife in the United States (MIDUS I) merged with its 10-year follow-up (MIDUS II) (Brim, Ryff, & Kessler, 2004). The initial MIDUS I RDD sample consisted of 3,032 men and women (49% male) who took part in the initial telephone survey and who also returned two mail questionnaires sent after the telephone survey was conducted. There was significant attrition, however, between MIDUS I and MIDUS II. Data collection for MIDUS II took place in 2004-2006. Of the RDD sample, 65% of the original respondents were retained for the MIDUS II telephone interview; the retention rate was 71% adjusted for mortality. Of the 2,257 (48% male), who were successfully interviewed for MIDUS II, 80% ( $N = 1,805$ ) returned self-administered questionnaires. Because many of the questions to be addressed in these analyses require use of questions from the self-administered portion of MIDUS II, it is apparent that the sample has become increasingly “select” over time.

### **Sample**

For this study, only those individuals who report being married at Time 2 ( $n = 1,523$ ) are included because the main variable of interest is negative marital interactions. However, much like other studies on marital quality, individuals in the MIDUS study report, on average, higher levels of marital support and lower levels of

negative marital interactions than is estimated in the general population. Therefore, the results of this study can be considered conservative estimates.

## **Measures**

***Life satisfaction.*** The life satisfaction scale is based on the life satisfaction scale utilized by the MIDUS II investigators (Prenda & Lachman, 2001). The MIDUS II life satisfaction scale includes five questions for which respondents had to rate overall, on a scale from 0 (the worst possible) to 10 (the best possible), their life, work, health, relationship with spouse/partner, and relationship with children. Since marital quality was controlled for in all of the analyses, that particular question was omitted and then replaced with a question that asked respondents to rate their current overall financial situation on the same - 0 (the worst possible) to 10 (the best possible) - scale. The scale was constructed by calculating the mean of the responses across the five questions ( $M = 7.65$ ,  $SD = 1.18$ ). Omitting the question regarding the respondent's relationship with spouse/partner and adding the question on financial situation increases the scale's internal consistency from  $\alpha = .64$  to  $\alpha = .70$ . However, it is also important to note that the sample size for the life satisfaction variable is smaller than the sample size for the other dependent variables. This is likely due to the fact that the composite variable is created using five questions, including questions regarding relationships with a spouse and children. If the respondent is currently unmarried or does not have children, the lack of response to those questions will introduce missing data. This is likely the reason for the smaller sample size.

***Positive Affect.*** The positive affect scale in the MIDUS study included six items. Respondents are asked to report "how much of the time" in the previous 30

days they felt a) “cheerful”, b) “in good spirits”, c) “extremely happy”, d) “calm and peaceful”, e) “satisfied”, and f) “full of life”. Answers were coded from 1 (“none of the time”) to 5 (“all of the time”) along a Likert scale. A mean score was then calculated for all respondents ( $M=3.41$ ,  $SD=0.69$ ). Cronbach’s alpha for this scale is .91.

***Psychological distress.*** The psychological distress scale in MIDUS is comprised of six items that were selected from various scales (see Mroczek & Kolarz, 1998 for validation). Respondents were presented with the following prompt: “During the past 30 days, how much of the time did you feel...” The six items include “so sad nothing could cheer you up”, “nervous”, “restless or fidgety”, “hopeless”, “that everything was an effort”, and “worthless”. Response options ranged from 1 (“all of the time”) to 5 (“none of the time”) on a Likert scale. Answers were reverse coded so that higher scores reflect higher standing in the scale. A mean score was then calculated for all respondents ( $M=1.50$ ,  $SD=0.54$ ). Cronbach’s alpha for this scale is .83.

***Physical health.*** Physical health is measured using a single question regarding perception of overall health. Respondents were asked, “Using a scale from 0 to 10 where 0 means “the worst possible health” and 10 means “the best possible health”, how would you rate your health these days?” The mean score for this measure in the present study is 7.30 ( $SD = 1.58$ ).

***Negative marital interactions.*** Negative marital interactions was measured using a six-item scale that is constructed based on questions that appeared in Schuster, Kessler, and Aseltine’s (1990) negative interaction scale. These questions included,

“How often does your spouse or partner make too many demands on you?”, “How often does he or she argue with you?”, “How often does he or she make you feel tense?”, “How often does he or she criticize you?”, “How often does he or she let you down when you are counting on him or her?”, and “How often does he or she get on your nerves?”. Response options included: “often”, “sometimes”, “rarely”, and “never”. Answers are coded 1 – 4 such that higher scores reflect a higher standing in the scale. The six scores are then averaged for a mean value of negative marital interactions ( $M = 2.14$ ,  $SD = 0.61$ ). Cronbach’s alpha for this scale is high ( $\alpha=0.88$ ).

***Friend support.*** Friend support is measured with four questions in the MIDUS survey (Schuster, Kessler, & Aseltine, 1990). Questions include: “How much do your friends really care about you?”, “How much do they understand the way you feel about things?”, “How much can you rely on them for help if you have a serious problem?”, and “How much can you open up to them if you need to talk about your worries?”. Response options include: “often”, “sometimes”, “rarely”, and “never”. Answers are coded 1 – 4 such that higher scores reflect a higher standing in the scale. The four scores are then averaged for a mean value of negative marital interactions ( $M = 3.27$ ,  $SD = 0.65$ ). Cronbach’s alpha for this scale is high ( $\alpha=0.88$ ).

***Family support.*** The family support measure in the MIDUS survey is very similar to the friend support measure (Schuster, Kessler, & Aseltine, 1990). This measure is constructed using four questions: “Not including your spouse or partner, how much do members of your family really care about you?”, “How much do they understand the way you feel about things?”, “How much can you rely on them for help if you have a serious problem?”, and “How much can you open up to them if you need

to talk about your worries?”. Response options include: “often”, “sometimes”, “rarely”, and “never”. Answers are coded 1 – 4 such that higher scores reflect a higher standing in the scale. The four scores are then averaged for a mean value of negative marital interactions ( $M = 3.54$ ,  $SD = 0.59$ ). Cronbach’s alpha for this scale is high ( $\alpha=0.84$ ).

***Job support.*** Job support is measured somewhat differently than friend support and family support for this study. Two sets of questions regarding co-worker support and supervisor support were combined to construct the measure of job support for the present study. Co-worker support is assessed using two questions: “How often do you get help and support from your coworkers?” and “How often are your coworkers willing to listen to your work-related problems?”. Supervisor support is assessed using three questions: “How often do you get the information you need from your supervisor or superiors?”, “How often do you get help and support from your immediate supervisor?”, and “How often is your immediate supervisor willing to listen to your work-related problems?”. Response options for co-worker support and supervisor support are the same: “all of the time”, “most of the time”, “sometimes”, “rarely”, and “never”. Answers are coded 1 – 5 such that higher scores reflect a higher standing in the scale. The scale was constructed by taking the sum of the five scores from co-worker support and supervisor support ( $M = 18.00$ ,  $SD = 3.60$ ). Cronbach’s alpha for this scale is good ( $\alpha=0.82$ ).

### **Covariates**

We include a number of covariates which may contribute to the relationship between support, strain, well-being, and health, including: age, gender (1=female),

race (1=black), total household income (log transformed), respondent's level of education (dummy coded into four groups: less than 12 years, 12 years (reference group), 13-15 years, and 16 or more years), number of children living at home (both biological and non-biological), and having a youngest child in preschool. The length of the respondent's current marriage was also included as well as having been previously divorced, and having parents who divorced during childhood as important marital covariates; each of these variables has been empirically linked to marital quality (Proulx et al., 2007; Spotts et al., 2005; 2005; Wethington & Kamp-Dush, 2007).

In addition to these demographic and marital variables, a measure of neuroticism was also included, which is associated with marital quality and satisfaction (Davila, Karney, & Bradbury, 2003). The MIDUS II neuroticism scale was based on previous studies on personality scales; it included four adjectives: moody, worrying, nervous, and calm. Respondents were asked how much the four adjectives described themselves. Responses were coded 1 through 4 such that higher scores reflect higher standing in the scale. Responses to the final adjective – “calm” – were reverse coded. The neuroticism scale was constructed by taking the mean of the four responses ( $M = 2.23$ ,  $SD = 0.0.66$ ). The internal consistency for this scale is good ( $\alpha=.76$ ).

In addition, a measure of life events was included as a covariate in the analysis of physical health outcomes. Previous studies have found a strong relationship between exposure to life events and mental health (e.g. Turner, Wheaton, & Llyod, 1995). There are fewer studies that examine the relationship between life events and

physical health, however life events are typically characterized by psychosocial stressors (e.g. death of a spouse, divorce) and increased exposure to stressors is associated with short-term physiological dysregulation and long-term physical health (McEwen, 1998; Sapolsky, 2004; Seeman, Singer, Rowe, Horowitz, & McEwen, 1997).

Fortunately, the MIDUS study is specifically designed to measure exposure to life events over the life course. The second wave of the study included a series of questions to determine if individuals had ever been exposed to particular life events during adolescence or adulthood (see Appendix A). The questions in MIDUS include 27 life events across several domains (e.g. education, family, employment, health). One of these items – parental divorce – was eliminated because it was already accounted for as a covariate in all of the analyses. Six additional childhood event items were then added to the list: 1) multiple moves as a child, 2) family ever on welfare during childhood, 3) negative relationship with one or both parents, 4) low-quality neighborhood, 5) job strain, and 6) financial strain. These additions seemed appropriate because of their use in previous studies of lifetime exposure to life events and chronic stress (e.g. Turner, Wheaton, & Lloyd, 1995).

For 27 these questions, respondents replied either “yes” if the event had ever occurred or “no” if it had not; affirmative answers were coded as “1”. The 5 remaining questions regarding: multiple moves as a child, negative relationship with one or both parents, low-quality neighborhood, job strain, and financial strain were based on index scores which were dichotomized for this measure.



***Multiple moves.*** Respondents were asked how many times his or her family moved to a different neighborhood during childhood. Responses were coded as “1” for this study if the family moved to a new neighborhood more than once.

***Negative relationships.*** Respondents were asked two questions in the MIDUS study, “How would you rate your relationship with your mother (or the woman who raised you) during the years you were growing up?” and “How would you rate your relationship with your father (or the man who raised you) during the years you were growing up?” Response options ranged from 1- excellent to 5 – poor. For this study, responses were coded as “1” if respondents reported either a “fair” or “poor” relationship with either their mother or father.

***Neighborhood quality.*** Perceived neighborhood quality is measured with four statements: “I feel safe being out alone in my neighborhood during the daytime,” “I feel safe being out alone in my neighborhood at night”, “I could call on a neighbor for help if I needed it”, and “People in my neighborhood trust each other”. Answers were coded as 1- not at all, 2- a little, 3-some, 4-a lot. The scale was then constructed by taking the mean of the values. For this study, responses were dichotomized as “1” if the mean was 16 or below. In other words, a “1” was assigned to those individuals who responded either “not at all” or “a little” to each of the four questions.

***Job strain.*** A number of job characteristics were measured in the MIDUS study. Consistent with previous work, job strain in this study reflected both low decision authority and high demands. Decision authority was measured using six questions: “On your job, how often do you have to initiate things – such as coming up with your own ideas or figuring out on your own what needs to be done?” “How often

do you have a choice in deciding how you do your tasks at work?” “How often do you have a choice in deciding what tasks you do at work” “How often do you have a say in decisions about your work?” “How often do you have a say in planning your work environment – that is, how your workplace is arranged or how things are organized”” and “How often do you control the amount of time you spend on tasks”. Demands were measured using five questions: “How often do you have to work very intensively – that is, you are very busy trying to get things done” “How often do different people or groups at work demand things from you that you think are hard to combine?” “How often do you have too many demands made on you?” “How often do you have enough time to get everything done?” (reverse coded) and “How often do you have a lot of interruption. Response options for both the decision authority and demands measures range from 1 – never to 5 – all of the time. Summary scores were then created for each measure such that higher scores reflect higher standing in the scale. Job strain in this study was coded as “1” if decision authority was low (sum score of 24 or above) and demands were high (sum score of 10 or below).

***Financial strain.*** Financial strain can be assessed many ways in the MIDUS study. For this study the response to a single question was used. The question was: “In general, would you say you (and your family living with you) have more money than you need, just enough for your needs, or not enough to meet your needs.” Responses were coded as “1” if the respondent said “not enough money”.

A summary score of life events, including the 27 checklist events and the 5 events constructed for this study was created. Number of life events experienced by

individuals in this sample ranged from 0 to 15 with a mean of 3.35 and a standard deviation of 2.52.

### **Analytic Strategy**

Means and standard deviations were calculated for all variables in this study (see Table 4.1). The most common method for testing a moderating effect is with hierarchical regression analyses. More specifically, multivariate regression analyses were used to test 1) the relative contributions of negative marital interaction and social support on health and well-being, 2) the potential moderating effect of social support and 3) whether the relationship between negative interactions, social support and health and well-being differ between men and women. This was achieved by testing five models.

The first model included only demographic and control variables to identify any significant predictors of health and well-being. In the second model, each of the social relationships of interest: negative marital interactions, friend support, family support, and job support were added to the analyses. A measure of marital support was intentionally excluded since it had a strong correlation with negative marital interaction ( $r = -.65$ ) (see Table 2 for correlations of study variables). This suggested that marital relationships that were high in negative interactions were also low in support. Conceptually, this suggested that marital support would not be an appropriate buffer to negative interactions since few marriages high in negative interaction would also have a level of support sufficient to offset the health consequences of negative interactions. In addition, when testing for a buffer effect, there is an assumption that the variables of interest are statistically independent. For the third model, gender was

included in a series of two-way interactions (e.g. negative marital interaction X gender, friend support X gender) to determine if the direct effects of the social variables on health outcomes vary between men and women. The buffer hypothesis was tested in the fourth model by including negative marital interactions in two-way interactions with the social support variables (e.g. negative marital interaction X friend support, negative marital interaction X job support). Finally, gender was included in a series of three-way interactions in the fifth model to determine if the relationship between negative marital interactions and the social support variables differs between men and women.

## **Results**

### **Descriptive Statistics**

Descriptive analyses are shown for each of the primary variables in Table 4.1 (negative marital interaction is abbreviated as “NMI” in all study tables). Unlike the larger MIDUS dataset, this sample has more men (54%) than women. However, the remainder of the distributions are similar to those of the larger dataset. The sample is well-educated (44% report at least 16 years of formal education) and has a higher-than-national average total household income of over \$65,000. The majority of individuals self-identify as white (97%) with an average age of 45.78. Approximately 13% of individuals in this sample report having experienced parental divorce during childhood, and 29% report having been divorced themselves.

Analyses of the outcome variables show that the participants had on average very good health and well-being. Life satisfaction (7.65,  $SD = 1.18$ ), positive affect (3.41,  $SD = 0.69$ ), and overall health (7.30,  $SD = 1.58$ ) are all above the mid-point

value of their relative scales, while mean neuroticism (2.23, *SD*) and psychological distress (1.50, *SD* = 0.54) are below the mid-point value of their relative scales.

### **Model 1: Demographic and Control Variables**

Model 1 included only the demographic and individual-level characteristics as predictors. Results indicated that neuroticism and life events were the two variables that most consistently predicted the outcome variables (Table 4.2). Neuroticism significantly predicted lower life satisfaction ( $b = -0.23, p < .001$ ), positive affect ( $b = -0.07, p < .05$ ) and overall health ( $b = -0.14, p < .05$ ) as well as higher distress ( $b = 0.07, p < .01$ ). Life events were associated with lower life satisfaction ( $b = -0.14, p < .001$ ), positive affect ( $b = -0.03, p < .001$ ), and overall health ( $b = -0.07, p < .001$ ), as well as greater psychological distress ( $b = 0.02, p < .05$ ). Perhaps unexpectedly, having experienced parental divorce during childhood was associated with lower levels of psychological distress ( $b = -0.16, p < .01$ ) and was marginally significantly associated with higher levels of life satisfaction ( $b = 0.22, p < .10$ ). Age was also associated with higher life satisfaction ( $b = 0.12, p < .01$ ) and positive affect ( $b = 0.15, p < .10$ ) as well as lower levels of psychological distress ( $b = -0.01, p < .05$ ) and overall health ( $b = -0.02, p < .05$ ). Having at least 16 years of formal education was associated with higher levels of life satisfaction ( $b = 0.24, p < .05$ ), while having less than 12 years of formal education was associated with higher levels of psychological distress ( $b = 0.13, p < .10$ ). Finally, self-identification as black or African American was associated with lower levels of life satisfaction ( $b = -0.60, p < .01$ ).

Table 4.1 Means and Standard Deviations of Study 3 Variables

	Mean	Standard Deviation	Range
<b>Sociodemographic Variables</b>			
Age (years)	45.78	12.41	23-74
Gender (1=female)	46%		
Race (1=black)	3%		
Education			
Less than high school education	6%		
High school education or GED	29%		
Some college	21%		
College, Graduate school	44%		
Household Earnings	65,243	1,344	0-300,000
Number of biological children at home	2.03	1.37	0-5
Number of non-biological children at home	0.31	0.84	0-5
Youngest child in preschool	17%		
Neuroticism	2.23	0.66	1-4
Length of current marriage	26.49	15.60	0-64
Remarried (1=yes)	29%		
Parental divorce (1=yes)	13%		
Number of life events	3.35	2.52	0-15
<b>Social Interaction Variables</b>			
Negative marital interactions (NMI)	2.14	0.61	1-4
Friend support	3.27	0.65	1-4
Family support	3.54	0.59	1-4
Job support	18.00	3.60	5-25
<b>Outcome Variables</b>			
Life satisfaction	7.65	1.18	2.40-10
Positive affect	3.41	0.69	1-5
Distress	1.50	0.54	1-4.17
Overall health	7.30	1.58	0-10

Table 4.2 Model 1: Sociodemographic Predictors of Time 2 Health and Well-being, Multiple Regression

	Positive Well-Being		Negative Well-Being		Physical Health	
	Life-Satisfaction	Positive Affect	Distress		Overall Health	
Time 1 Well-Being		0.44 ***	0.4 ***		0.48 ***	
Age	0.02 **	0.01 †	-0.01 *		-0.02 *	
Female	0.15 †	0.02	-0.01		0.05	
Black	-0.60 **	-0.07	0.06		-0.21	
Income	0.20 ***	0.00	-0.02		0.04	
Education						
<12 years	0.04	0.04	0.13 †		0.09	
13-15 years	0.06	0.01	-0.01		-0.07	
16 or more years	0.24 *	0.06	-0.09		0.20	
Biological Children	-0.03	-0.01	0.01		-0.04	
Non-biological Children	-0.05	0.04	0.00		0.09	
Youngest in Preschool	-0.09	0.03	0.05		0.07	
Neuroticism	-0.23 ***	-0.07 *	0.07 **		-0.14 *	
Length of Marriage	0.00	0.00	0.00		0.00	
Previous Divorce	-0.11	0.00	0.04		0.06	
Parental Divorce	0.22 †	0.10	-0.16 **		0.06	
Life Events	-0.14 ***	-0.03 ***	0.02 *		-0.07 ***	
Constant	5.86	1.95	1.15		4.98	
N	888	1,023	986		1,025	
R <sup>2</sup>	0.21	0.27	0.26		0.29	

†p < .10 \*p < .05 \*\*p < .01 \*\*\*p < .001

## **Model 2: Support and Negative Interactions**

We added negative marital interactions as well as relationship-specific support (i.e. friend, family, and job) in Model 2 of the multivariate regression analysis.

Negative marital interactions is the only variable that significantly predicts all four measures of psychological well-being (Table 4.3). Specifically, negative marital interactions is associated with lower levels of life satisfaction ( $b = -0.27, p < .001$ ) and positive affect ( $b = -0.26, p < .001$ ) as well as higher levels of psychological distress ( $b = 0.08, p < .05$ ). Friend support is associated with higher levels of life satisfaction ( $b = 0.16, p < .05$ ), positive affect ( $b = 0.11, p < .01$ ), and overall health ( $b = 0.29, p < .01$ ). As a note, friend support is the only social support variable that is significantly associated with overall health. Family support is positively associated with life satisfaction ( $b = 0.32, p < .001$ ) and positive affect ( $b = 0.10, p < .05$ ). Job support is associated with greater life satisfaction ( $b = 0.07, p < .001$ ) and positive affect ( $b = 0.01, p < .10$ ) as well as lower levels of psychological distress ( $b = -0.01, p < .10$ ).

## **Model 3: Support, Strain, and Gender**

There is mixed evidence regarding the role of gender and support/strain. Gender was used in two-way interactions with strain and support variables (e.g. negative marital interactions X gender, friend support X gender) in Model 3 to determine if particular relationships differ between men and women (Table 4.4). Five interactions are significant in this model. The relationship between negative marital interactions and two measures of well-being, positive affect ( $b = 0.18, p < .05$ ) and distress ( $b = 0.19, p < .01$ ), differed significantly between men and women. In addition, the relationship between family support and overall health ( $b = 0.47, p < .05$ ) as well as



the relationship between friend support and life satisfaction ( $b = 0.27, p < .05$ ) differed significantly between men and women.

#### **Model 4: Buffer Analysis**

Two-way interactions between marital support and each support type (i.e. negative marital interactions X friend support, negative marital interactions X family support, marital X job support) are included to test the hypothesis that cross-domain support can buffer the negative relationship between negative marital interactions and health and well-being. There is no evidence to support the hypothesis that job support moderates the relationship between negative marital interactions and well-being (Table 4.5). There is however, evidence that friend support moderates the relationship between negative marital interactions and positive affect ( $b = 0.12, p = .05$ ) and psychological distress ( $b = -0.10, p < .05$ ). In other words, the effect of the negative marital interaction on positive affect and distress is dampened for those individuals who report high levels of friend support. Contrary to expectations, the interaction between negative marital interactions and family support is associated with lower levels of life satisfaction ( $b = -0.26, p < .05$ ) and positive affect ( $b = -0.14, p < .05$ ), as well as higher levels of psychological distress ( $b = 0.10, p < .10$ ). In other words, the impact of negative marital interactions on these measures of health and well-being is exacerbated by high levels of family support.

#### **Model 5: Gender Differences in the Buffering Effect**

In the final set of analyses, gender was added to the two-way interactions from Model 4 to create three-way interactions between negative marital interactions, support type, and gender.

Table 4.3 Model 2: Relationship between Social Interaction Variables and Well-Being, Multiple Regression

	Positive Well-Being		Negative Well-Being		Physical Health
	Life Satisfaction	Positive Affect	Distress	Overall Health	
T1 Well-Being		0.33 ***	0.32 ***	0.40 ***	
Age	0.00 *	0.00	0.00	-0.02 *	
Female	-1.61 *	-1.47 **	0.88 *	-2.17 *	
Black	-0.54	0.05	0.07	-0.12	
Income	0.08	-0.01	0.02	0.02	
Education					
<12 years	0.20	-0.06	0.28 **	-0.06	
13-15 years	-0.03	0.07	-0.01	0.04	
16 or more years	0.20 †	0.07	-0.12 *	0.21	
Biological Children	-0.01	0.01	0.02	-0.06	
Non-biological Children	0.04	0.09 *	-0.02	0.16 *	
Youngest in Preschool	-0.04	0.07	0.01	-0.01	
Neuroticism	-0.09	-0.02	0.07 *	-0.14 †	
Length of Marriage	0.01	0.00	0.00	0.01	
Previous Divorce	0.02	0.02	-0.01	0.08	
Parental Divorce	0.14	0.01	-0.13 *	-0.02	
Life Events	-0.09 ***	-0.02 †	0.00	-0.05 †	
NMI	-0.28 **	-0.33	0.17 ***	-0.04	
Friend Support	0.04	0.06	-0.02	0.13	
Friend Support	0.04	0.06	-0.02	0.13	
Friend Support	0.04	0.06	-0.02	0.13	
NMI x Gender	0.05	0.18	-0.19 **	0.23	
Friend Support x Gender	0.27 *	0.11	-0.08	-0.01	
Family Support x Gender	0.09	0.17 †	-0.08	0.47 *	
Job Support x Gender	0.01	0.00	0.00	0.00	
Constant	5.56	2.56	0.75	4.75	
N	479	542	509	527	
R <sup>2</sup>	0.35	0.36	0.33	0.31	

†p < .10 \*p < .05 \*\*p < .01 \*\*\*p < .001 Friend support is associated with higher

There are three significant interactions in Model 5 (Table 4.6). Only one relationship was significant in this analysis between negative marital interactions, friend support, gender, and positive affect ( $b = 0.29, p < .05$ ). These results suggest that high levels of friend support dampen the effect of negative marital interactions on decreased positive affect for women, but not for men.

### **Discussion**

The present study extends the discussion of the cross-buffering effects of social support by examining the potential benefits of a supportive work environment. There is strong support for the independent effects of negative marital interactions, friend support, family support and job support on measures of health and well-being, but little support for the specific hypothesis that support from coworkers and supervisors would moderate the relationship between negative marital interactions and well-being.

In total, less than half of the stress-buffering relationships tested (6 out of 15 two-way interactions) were significant, and four of these relationships were in the opposite direction predicted. These findings represent two important features of the stress-support relationship. First, it is clear that positive effects of support on strain are not global effects. As Pearlin et al. (1981) suggested nearly 30 years ago, social support operates in a specialized way. In particular, while the global impact of social support on health can be relatively easy to articulate, Pearlin (1985) emphasized that the role of social support is specific to a variety of context-dependent factors. This was later supported by Chisholm, Kasl, and Mueller (1986) who reported in their findings of occupational support and strain, “Moderating effects of support are highly selective and become less extensive as the hypothesized stress process moves from stress to

strain to health outcomes” (p. 179). Researchers studying partner, family and friend networks also report this specialized nature of the stress-support relationship (Okun & Keith, 1998; Walen & Lachman, 2000). Thus, future research should pay particular attention to specific circumstances and relationships for which support may buffer the negative effects of stress on health and well-being, with the understanding that consistent with other aspects of the social stress process, stress-support relationships are highly complex and not easily generalizable across contexts..

The second important feature that is evident in the findings is the direction of the buffering effect. Interestingly, the results indicated that family support had a *reverse* buffer effect on negative marital interactions; this is true for positive affect, psychological distress, and overall self-reported health. These findings suggest that having a supportive family network amplifies the negative effects of negative marital interactions on psychological well-being and physical health. Although there is relatively little evidence of this phenomenon in the marriage literature per se, research on occupational stress and supervisor support often reports findings of a reverse buffer effect (e.g. Chisholm et al., 1986).

In their study of employees involved in the nuclear melt-down on Three Mile Island (TMI), Chisholm et al. (1986) find that higher levels of supervision support in the context of work-related stress is associated with lower job satisfaction, perceptions of job future, and occupational self-esteem.

Table 4.4 Model 3: Interactions between Social Interaction Variables and Gender,  
Multiple Regression

	Positive Well-Being		Negative Well-Being		Physical Health
	Life Satisfaction	Positive Affect	Distress	Overall Health	
T1 Well-Being		0.33 ***	0.32 ***	0.40 ***	
Age	0.00 *	0.00	0.00	-0.02 *	
Female	-1.61 *	-1.47 **	0.88 *	-2.17 *	
Black	-0.54	0.05	0.07	-0.12	
Income	0.08	-0.01	0.02	0.02	
Education					
<12 years	0.20	-0.06	0.28 **	-0.06	
13-15 years	-0.03	0.07	-0.01	0.04	
16 or more years	0.20 †	0.07	-0.12 *	0.21	
Biological Children	-0.01	0.01	0.02	-0.06	
Non-biological Children	0.04	0.09 *	-0.02	0.16 *	
Youngest in Preschool	-0.04	0.07	0.01	-0.01	
Neuroticism	-0.09	-0.02	0.07 *	-0.14 †	
Length of Marriage	0.01	0.00	0.00	0.01	
Previous Divorce	0.02	0.02	-0.01	0.08	
Parental Divorce	0.14	0.01	-0.13 *	-0.02	
Life Events	-0.09 ***	-0.02 †	0.00	-0.05 †	
NMI	-0.28 **	-0.33	0.17 ***	-0.04	
Friend Support	0.04	0.06	-0.02	0.13	
Friend Support	0.04	0.06	-0.02	0.13	
Friend Support	0.04	0.06	-0.02	0.13	
NMI x Gender	0.05	0.18	-0.19 **	0.23	
Friend Support x Gender	0.27 *	0.11	-0.08	-0.01	
Family Support x Gender	0.09	0.17 †	-0.08	0.47 *	
Job Support x Gender	0.01	0.00	0.00	0.00	
Constant	5.56	2.56	0.75	4.75	
N	479	542	509	527	
R <sup>2</sup>	0.35	0.36	0.33	0.31	

†p < .10 \*p < .05 \*\*p < .01 \*\*\*p < .001

Table 4.5 Model 4: Cross-Domain Buffering, Multiple Regression

	Positive Well-Being			Negative Well-Being		Physical Health
	Life Satisfaction		Positive Affect	Distress		Overall Health
T1 Well-Being			0.33 ***	0.33 ***		0.41 ***
Age	0.00		0.00	0.00		-0.02
Female	-0.04		-0.09 †	0.01		-0.05
Black	-0.53 *		0.05	0.07		-0.10
Income	0.08		-0.02	0.02		0.01
Education						
<12 years	0.17		-0.05	0.28		-0.04
13-15 years	-0.02		0.08	-0.02		0.07
16 or more years	0.20 †		0.08	-0.13		0.23
Biological Children	-0.01		0.01	0.02		-0.05
Non-biological Children	0.04		0.09 *	-0.01		0.15
Youngest in Preschool	-0.01		0.08	0.00		0.00
Neuroticism	-0.09		-0.01	0.06		-0.13
Length of Marriage	0.01		0.00	0.00		0.01
Previous Divorce	0.04		0.02	-0.01		0.10
Parental Divorce	0.11		-0.02	-0.11		-0.07
Life Events	-0.09 ***		-0.02 †	0.00		-0.05
NMI	0.24		-0.14	0.02		0.19
Friend Support	0.18		-0.16	0.16		-0.13
Family Support	0.90 **		0.43 **	-0.26		0.83
Job Support	0.02		0.01	-0.01		-0.02
NMI x Friend Support	0.00		0.12 †	-0.10		0.11
NMI x Family Support	-0.26 *		-0.14 *	0.10		-0.24
NMI x Job Support	0.02		0.00	0.00		0.02
Constant	3.72		1.68	1.27		3.52
N	479		524	509		527
R <sup>2</sup>	0.35		0.36	0.32		0.31

†p &lt; .10 \*p &lt; .05 \*\*p &lt; .01 \*\*\*p &lt; .001

Table 4.6 Model 5: Cross-Domain Buffering by Gender Interaction, Multiple Regression

	Positive Well-Being		Negative Well-Being		Physical
	Life	Positive	Distress	Overall	Health
	Satisfaction	Affect			
T1 Well-Being		0.32 ***	0.32 ***	0.40 ***	
Age	0.00	0.00	0.00	-3.61	
Female	1.60	1.26	0.58	-0.24	
Black	-0.57 *	0.03	0.07	-0.14	
Income	0.08	-0.02	0.02	0.00	
Education					
<12 years	0.19	-0.04	0.28 **	-0.14	
13-15 years	-0.01	0.09	-0.01	0.09	
16 or more years	0.22 †	0.09	-0.12 *	0.25 †	
Biological Children	-0.01	0.01	0.02	-0.07	
Non-biological Children	0.05	0.09	-0.02	0.14	
Youngest in Preschool	-0.03	0.08 *	0.00	0.11 †	
Neuroticism	-0.09	-0.02	0.06 †	-0.11	
Length of Marriage	0.01	0.00	0.00	0.00	
Previous Divorce	0.03	0.01	-0.01	-0.11	
Parental Divorce	0.11	-0.01	-0.12 *	0.00	
Life Events	-0.09 ***	-0.02 †	0.00	-0.06 *	
NMI	0.80	0.32	-0.04	-0.24	
Friend Support	0.37	0.12	0.05	0.15	
Family Support	0.91 **	0.39 †	-0.21	0.16	
Job Support	0.03	0.02	-0.01	-0.03	
NMI x Friend Support	-0.14	-0.02	-0.03	-0.01	
NMI x Family Support	-0.28 †	-0.16 †	0.10	-0.04	
NMI x Job Support	-0.02	0.00	0.00	0.02	
NMI x Gender	-1.34	-1.00 *	-0.06	0.92	
Friend Support x Gender	-0.32	-0.60 *	0.13	-0.79	
Job Support x Gender	-0.22	0.06	-0.17	1.63	
NMI x Friend Support x Gender	0.25	0.29 *	-0.08	0.32	
NMI x Family Support x Gender	0.15	0.07	0.02	-0.48	
NMI x Job Support x Gender	0.01	0.00	0.00	0.00	
Constant	2.99	1.04	1.20	4.59	
N	479	524	509	527	
R <sup>2</sup>	0.36	0.38	0.33	0.31	

†p < .10 \*p < .05 \*\*p < .01 \*\*\*p < .001

One potential explanation for this reverse buffer effect is that sources of social support, whether it is a supervisor or a spouse, may become over-involved during stressful situations (Krause, 1995). Coyne, Wortman, and Lehman (1988) argued that sources of support who become very closely involved in matters related to an individual's chronic strains may inadvertently convey negative feedback (e.g. lack of competence) to that individual.

A second explanation is a perception of failed expectations. An individual in a low-quality marital relationship may compare his or her marital experiences to that of his or her parents or other family members. If an individual typically perceives high levels of support from parents, siblings, etc. and simultaneously perceives low levels of support from his or her spouse, that inequality could be particularly detrimental to health and well-being. Future studies may want to examine the role failed expectations may play, specifically between family and spousal support.

There are several limitations to this study. The first limitation reflects one that plagues all research on stress and support and that is the bidirectional nature of the relationship. Individuals that are exposed to a greater number of stressors for example are more likely to report their relationships negatively. Some of this effect was controlled for by including Time 1 levels of well-being and health, however this cannot fully capture the dynamic relationship. Second, the present study is limited in that it only has assessments for two points in time. The advantage to using the MIDUS dataset is that it is possible to look at outcomes over a longer period of time (i.e. 10 years), however, there are likely to be many fluctuations in stress and support that the present study is unable to model without intermediary assessment points.



Finally, as is the case with most research on marriage, the individuals who participate in research studies are typically in high-quality marriages, and this is certainly true for the present study (Robles & Kiecolt-Glaser, 2003). The participants in MIDUS report on average, high levels of support and low levels of negative marital interactions. This field of research would benefit tremendously from studies examining populations in which negative marital interactions is high.

This study examined the specific contribution of job support on individual-level health and well-being. The results from this study suggest that perceived support from both coworkers and supervisors mitigates the negative impact of negative marital interactions on life satisfaction, psychological distress, and self-reported overall health. This research further underscores the importance of social support outside of the marital relationship in ameliorating the deleterious affects of stress on health and well-being.

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## CHAPTER 5

### CONCLUSIONS

Research in social demography consistently highlights the differences in mortality rates based on marital status. These studies overwhelmingly suggest that individuals who are married are also healthier, on average, than their unmarried counterparts (i.e. never married, separated/divorced, widowed) (Gardner & Oswald, 2004; Gove, 1973, Johnson, Blacklund, Sorlie, & Loveless, 2000; Lillard & Panis, 1996; Waite, 1995). However, there is a tremendous amount of variation on measures of health and well-being within the group of individuals who report being married and it is believed that marital quality is one important factor that can potentially explain this variation.

This dissertation was designed to examine the relationship between marital quality and health. The research questions and key findings from the dissertation are summarized in Table 5.1. The questions focus on the relationship between marital quality, divorce, social support, and mental and physical health. The findings extend the research on marital quality and health in three ways: 1) examining the health and well-being on individuals in persistent low-quality marital relationships and assessing whether long-term health outcomes are sensitive to changes in marital quality over time, 2) comparing the health profiles of individuals following a divorce based on their exposure to stressful events across the life course, and 3) identifying the sources of social support that effectively buffer against the deleterious health effects of low-quality marital relationships.

Table 5.1 Summary of Dissertation Questions and Findings

Question	Study	Key Findings
1) Is poor marital quality associated with <i>mental</i> health?	1	Yes, poor marital quality is associated with greater distress, negative affect, and anxiety, as well as lower levels of positive affect, self-esteem, and life satisfaction.
2) Is poor marital quality associated with <i>physical</i> health?	1	Yes, but this relationship is much weaker than the one between poor marital quality and mental health.
3) If marital quality declines, will health decline?	1	Yes, there is strong evidence that mental health will decline as well. There is no significant change however in physical health.
4) If marital quality improves, will health improve?	1	No, there is no evidence in this project that suggests health will improve if marital quality improves.
5) Will health improve if an individual leaves a low-quality marriage?	1	No, there is no evidence in this project that suggests that exiting a low-quality marriage will significantly improve one's health.
6) Is a "double exposure" to divorce associated with poorer mental health than single exposure to divorce?	2	No, in fact, those who experienced parental divorce report more life satisfaction and less distress than individuals who are divorced, but whose parents were married.
7) Is a "double exposure" to divorce associated with poorer physical health than single exposure to divorce?	2	No, "double exposure" is associated with fewer overall symptoms of physical illness and a decreased likelihood of a cardiovascular event.
8) Are negative marital interactions associated with mental health?	3	Yes, negative marital interactions are associated with less life satisfaction and greater distress.
9) Are negative marital interactions associated with physical health?	3	No, after controlling for demographic variables, there was no relationship between negative marital interactions and physical health.
10) Does social support increase well-being for those individuals who report negative marital interactions?	3	There is limited evidence that social support increases well-being in the face of negative marital interactions. Further, the combination of family support and negative marital interactions appears to <i>worsen</i> mental health outcomes.

## **Main Findings**

The current project revealed findings which were both expected and unexpected. Findings from Study 1 are consistent with previous research on low-quality marital relationships and well-being. Specifically, the results show that Time 1 reports of a low-quality marital relationship are significantly associated with lower levels of positive affect, self-esteem, life satisfaction and physical health, and higher levels of distress, and anxiety, even after controlling for a number of sociodemographic variables. Importantly, the relationship between marital quality and mental health outcomes was stronger than the relationship between marital quality and physical health outcomes. This finding is consistent with previous studies that have examined self-reported physical health and marital quality; however, it does not strongly support the findings from experimental studies. This may be due to the fact that experimental studies document short-term physiological dysregulation. It is possible that the physical consequences (as measured by health conditions such as cardiovascular disease) of low marital quality relationships do not manifest until later in life course.

This study also explored whether or not changes in marital quality between Time 1 and Time 2 were associated with changes in health and well-being. Findings suggest that a decline in marital quality between Time 1 and Time 2 is consistently associated with each measure of psychological well-being, but not physical health, as compared to the health and well-being of individuals in persistently high quality marriages. However, an improvement in marital quality does not yield opposite findings. In fact, an improvement in marital quality between Time 1 and Time 2 is

only weakly related to one measure: self-esteem. One potential explanation for this finding is that individuals in the MIDUS study report relatively high levels of marital quality, on average, at the beginning of the study. Thus, despite the fact that they report below average marital quality at Time 1 as compared to other MIDUS participants, their relationship may not be harmful to their well-being, therefore improvements in quality may not yield significant changes in health. On the other hand, using the same measure for marital quality, reports of low-quality marriages at both times points is strongly associated with a number of negative health outcomes, so it is unlikely that the finding for the Improvement group is an artifact of sample characteristics. Unfortunately, it is more likely that low-quality marriages have a strong influence on health and well-being that may have important consequences throughout the life course.

One unexpected finding was that a history of parental divorce was associated with *lower* levels of distress and anxiety. An extensive literature on children's adjustment to divorce suggests that parental divorce is associated with a range of negative academic and psychosocial outcomes, including some outcomes which may not manifest until adulthood (Amato, 2000; Cherlin, Chase-Lansdale, & McRae, 1998). Therefore, it was predicted that individuals who reported having parents who divorced during childhood would report lower levels of well-being as compared to individuals whose parents were continually married, but this was not the case. There is little evidence or applied theory in the literature to explain this finding, but it was explored in more detail in Study 2.

The goal of Study 2 was to determine if individuals who were exposed to a greater number of stressors across the life course – in particular, parental divorce – reported lower levels of health and well-being following their own divorce as compared to individuals whose parents were continually married. Much like the findings from Study 1, findings from this study indicate that, contrary to expectations, parental divorce is associated with *higher* levels of life satisfaction and lower levels of distress and alcohol abuse. In addition, parental divorce is also associated with better physical health as measured by three different symptom checklists. This was very unexpected because parental divorce is associated with a number of negative life events including changes in financial status, moves, and changes in social networks (Amato, 2000), and numerous studies have shown that the accumulation of negative life events is associated with poorer health outcomes (e.g. Brown & Harris, 1978). This latter finding is confirmed in the current study in which the number of negative life events is negatively associated with life satisfaction and positively associated with distress, alcohol use, and physical health symptoms. Therefore, there must be another explanation for this finding.

One possible alternative explanation for the relationship between parental divorce and higher levels of health and well-being is that individuals whose parents were continually married may experience feelings of failed expectations to a greater extent than their counterparts because their parents had “successful marriages” and they did not. These feelings may be strong enough to adversely affect their health and well-being. In their recent study on exposure to repeated life events, Luhmann and Eid (2009) found that the negative impact of a first divorce has a stronger impact on

life satisfaction than a second divorce. In this study the authors focused on multiple divorces in adulthood, but perhaps this finding can be extended to research on the effects of parental divorce. Perhaps the present study's description of double exposure to divorce can be considered the equivalent of Luhmann and Eid's (2009) repeated life events, regardless of the fact that the present study measures parental divorce as well as offspring divorce. Finally, individuals whose parents divorced during childhood can reference a model of divorce from their own family, whereby they know what to expect and can visualize life moving on beyond the divorce. Yet, because the literature on adjustment to divorce has focused almost exclusively on negative impact, there is little published evidence to support these explanations.

In spite of the unexpected findings on the relationship between parental divorce and health, findings from this study support the wide range of literature on the relationship between exposure to negative life events. Specifically, the number of life events is associated with lower levels of life satisfaction and physical health, and higher levels of psychological distress and alcohol use. Umberson et al. (2005) maintain that childhood adversity may be especially detrimental to health and well-being across the life course. In their study of marital quality over time, the authors report that, "Stress in adulthood appears to take a cumulative toll on marriage over time – but that this toll is paid primarily by individuals who report a more stressful childhood" (Umberson et al., 2005, p. 1332). The authors find that all individuals experience fluctuations in marital quality during adulthood, but it is those individuals who experience stressful childhoods who are the most reactive to those fluctuations (Umberson et al., 2005). The findings from Study 2 suggest that this assertion may be

contingent upon the type of childhood stressor. Although their measure of childhood adversity did include parental divorce, the authors did not conduct analyses to determine if specific types of adversity are associated with marital quality later in life. It appears as though the nature of the relationship between parental divorce and later marital quality may differ from the relationship between other types of childhood adversity and later marital quality. This argument is further supported by Luhmann and Eid's (2009) findings.

In their recent study, Luhmann and Eid (2009) examined the effects of repeated exposure to life events in three domains: unemployment, divorce, and marriage. Repeated divorce was the only domain in which individuals reported higher levels of life satisfaction at the second event as compared to the first. This is certainly a point worth exploring in future research.

Overall, the research questions posed in this study should be further tested in other datasets, particularly those with greater age, ethnic and racial diversity. Further studies on the *type* of stressor exposure will likely yield more detailed explanation of individual differences in physical and mental health outcomes than simply counting the *number* of stressors to which an individual has been exposed.

Study 3 sought to identify potential moderators of the relationship between low-quality marital relationships and health. Given the wealth of evidence, including findings from Study 1 of this project, indicating the negative influence of low-quality marital relationships on individual-level health and well-being, it is important to begin to identify factors that may moderate this relationship (Cohen, 2004). An abundance of literature on social relationships, and social support in particular, provide evidence

for the long-reaching positive influence of social support on health and well-being (Cacioppo et al., 2002; Cohen, 2004; Uchino, 2006). Yet, there is also evidence that this process is actually highly specialized. As Chisholm, Kasl, and Mueller (1986) report in their findings of occupational support and strain, “Moderating effects of support are highly selective and become less extensive as the hypothesized stress process moves from stress to strain to health outcomes” (p. 179). Researchers studying partner, family and friend networks also report the specialized nature of the stress-support relationship (Okun & Keith, 1998; Walen & Lachman, 2000).

Study 3 examined the potential stress-buffering effects of friend, family, and job support on low-quality marital relationships. While all sources of support are associated with higher levels of life satisfaction and positive affect and friend and job support are weakly associated with lower levels of psychological distress, few of the tested stress-buffering effects were significant. And unexpectedly, family support is associated with a *reverse* stress-buffering effect such that individuals who report low levels of marital quality and high levels of family support also report significantly lower levels of life satisfaction and positive affect. Reverse-buffer effects, in which increased support exacerbates the negative impact of the stressor or strain, have received limited attention in the social support literature, but there is one example from the occupational support literature.

The most illustrative example of a reverse-buffer effect can be found in Stetz, Stetz, and Bliese’s (2006) study on social support and occupational support. In contrast to Study 3, Stetz et al. (2006) examine the within-domain buffering effects of supervisor support on organizational constraints. The authors find evidence for a



significant stress-buffering effect for individuals with high self-efficacy, but find a reverse-buffer effect for individuals with low self-efficacy (Stetz et al., 2006). The authors conclude that the added support exacerbates the negative effects of the stressor for individuals who do not believe they have the ability to accomplish their goals (Stetz et al., 2006).

Since the Stetz et al. (2006) study measures within-domain buffering in the context of organizational constraints, it logically follows that self-efficacy could potentially play a role in the relationship between support, stress, strain and health. The rationale for using self-efficacy when looking at cross-domain buffering of low-quality marital relationships is less clear. It is possible that a failure of expectations regarding the marital relationship could in itself increase levels of distress and other measures of negative well-being. Clearly, this area of research is underdeveloped and would benefit from focused study.

Aside from the findings on family support, only one other stress-buffering relationship is marginally significant: findings from Study 3 indicate that friend support weakly buffers the negative effect of low-quality marriage on positive affect. Is it possible that social support is not an effective buffer against the deleterious effects of a low-quality marriage? This seems unlikely given the strength of recent findings on the health benefits of social relationships, but the exact mechanisms by which these relationships operate have yet to be identified in the realm of marital quality. One promising area of research that may inform studies of low-marital quality and divorce is social support in later life. For example, Rook (2009) has explained that individuals who lose important social ties later in life turn to

“substitute” ties. However, these substitute ties do not appear to benefit individuals in the same ways that the original social relationship would have (e.g. decreasing distress) (Rook, 2009; Zettel & Rook, 2004). Perhaps the marital relationship is so specialized that even when individuals in low-quality marriages or those who are divorced seek to compensate for limited spousal support with other sources of support, the support they receive is ineffectual.

### **Limitations**

**Study 1.** Study 1 has several limitations. One of the most significant limitations is the lack of intermediary assessments between MIDUS I and MIDUS II. While empirical evidence shows that marital quality declines over time, it likely fluctuates – a characteristic that could not be measured with the MIDUS dataset. Additional assessments would also allow for the measurement of bidirectional relationships between marital quality and health and well-being. Second, the MIDUS dataset does not include questions regarding the respondent’s expectations of the marriage and whether or not those expectations are being met. The disconnect between expectations and reality could potentially explain some of the variation in well-being for those individuals who remain in long-term, low-quality marriages. Third, the MIDUS dataset does not include information regarding the quality of the respondents’ parents’ marital quality. It is possible that the quality of the parent’s marriage had an influence on both the respondent’s expectations of his or her own marriage as well as the quality of the respondent’s marital relationship itself. Finally, additional variation in psychological well-being could be explained by the quality of perceived social support. While the MIDUS dataset has a number of questions

regarding perceived support from a variety of sources, it is not clear what type of support is needed/most effective/utilized specifically in response to a low-quality marriage.

**Study 2.** Perhaps the most significant limitation of Study 2 is the lack of information regarding the context of divorce (both the parent's divorce and the spouse's). For example, who initiated the divorce? What was the financial status of the husband and wife? Was there a dramatic change in finances for either spouse? Were adequate support networks available at the time of the divorce? Did the respondent also have siblings who had experienced their own divorce? Regarding the context of parental divorce, what was the quality of the parent's marital relationship? How old was the respondent when his or her parents separated? Who did the respondent live with following the divorce? What was the nature of the resident parent's romantic relationships following the divorce? Did he or she remarry? How many times? Was the parent's divorce acrimonious? All of these questions could help to explain the respondent's adjustment to divorce – both their parent's and their own.

In addition to questions regarding the context of the divorce(s), recent research suggests that psychological resilience plays an important role in reactivity to and recovery from stressful experiences (Fredrickson, Tugade, Waugh, & Larkin, 2003; Ong, Bergeman, Bisconti, & Wallace, 2006). It is possible that a significant amount of variance in the health and well-being of the current projects' participants could be accounted for by trait resilience. Finally, all of the information on physical

symptoms/conditions in the MIDUS dataset is self-report. The strength of the conclusions that can be drawn based on these self-report data is thus limited.

**Study 3.** There are also several limitation to Study 3. As is the case with most research on marriage, the individuals who participate in research studies are typically in high-quality marriages, and this is certainly true for the current project (Robles & Kiecolt-Glaser, 2003). The participants in MIDUS report on average, high levels of support and low levels of negative marital interactions. There are two important consequences of this bias. First, the results of the study are likely conservative. The few significant relationships that were detected are perhaps stronger in a more representative sample. Second, there are likely significant relationships that were not detected in this particular study because of the nature of the sample. This field of research would benefit tremendously from studies examining populations that report lower levels of marital quality.

In addition to the characteristics of the sample, there is also a lack of information regarding the nature of social interactions that occur following negative marital interactions. For example, who did the respondent turn to following an argument with his or her spouse? Was it a family member? A friend? Did they actively seek support at all? How does the respondent's support network view the respondent's marital relationship? It has been suggested that the mechanism through which social support operates is highly specific (Pearlin, 1985), therefore, future research should focus in more detail on the nature of the social support that is perceived, sought out, and received specifically in response to negative marital interactions.

Finally, it is important to know how the respondent reacted during and following the negative marital interaction. For example, did he or she actively disengage from the argument? Did he or she become silent in an attempt to avoid a negative interaction? Important new research suggests that women who silence themselves in the context of negative marital interactions had a four-fold greater risk of dying (Eaker, 2007). This evidence builds upon a wide body of extant knowledge regarding the relationship between the nature of the negative interaction (e.g. presence of hostility) and cardiovascular reactivity (Kiecolt-Glaser & Newton, 2001).

## **Conclusions**

The current project extends the literature on the relationship between marital quality and health and well-being. Despite over a century of research that demonstrates the health benefits of marriage, there is a tremendous amount of variation in health outcomes depending on quality of the marital relationship. These studies further support recent evidence that documents the detrimental influence of low-quality marital relationships on health and well, particularly if an individual remains in the relationship over the long-term. However, the findings from this project also underscore the complex nature of the relationship between marital quality, social support, and health. Research in this area would benefit from increased focus on the lifespan perspective. For example, Luhmann and Eid's (2009) study reported that repeated exposure to divorce results in an adaptive effect, such that individuals reported higher levels of life satisfaction at during the second divorce than during the first. Findings from this current project suggest that this may occur, even if the first exposure to divorce is with parental divorce during childhood. However, Umberson et

al. (2005) found that individuals who were exposed to adversity in childhood were more reactive to changes in marital quality than individuals who were exposed to adversity in adulthood. It is clear that exposure to stressors across the life course influence adult marital relationships, but the relative contribution of these exposures as well as the timing of them merits further exploration.

Finally, numerous studies have effectively demonstrated the positive health consequences associated with social support (Cohen, 2004), however, little is understood about the way in which support confers benefits in the context of low-quality marital relationships and/or divorce. This area of research would benefit from further investigation into how individuals compensate for the lack of support in a low-quality marital relationship. Do these individuals attempt to create “substitute ties” as adults do in later life? Do individuals in these types of relationships receive more support from friends and family? Does social support have a differential impact on the health and well-being of individuals in low-quality marital relationships depending upon age or stage in the life course? This area of research in particular would benefit from daily diary studies, which could provide rich insights into how social relationships operate within the context of low-quality marital relationships.

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