

**Associations among Marital Satisfaction,
Sexual Satisfaction, Conflict Frequency, and Divorce Risk from 1980 to 2000**

by

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Abstract

Marital satisfaction and divorce risk are two intricately related phenomena that influence or are influenced by several aspects of marriage. Specifically, sexual satisfaction and conflict frequency are two commonly studied relational variables that influence marital satisfaction, but the influence that these three variables, taken together, exert on each other is unclear. Marital satisfaction, sexual satisfaction, and conflict frequency influence if individuals will experience a divorce, but the longitudinal influences of these aspects of marriage on divorce risk is unknown. Study 1 examined the influence that marital satisfaction, sexual satisfaction, and conflict frequency exert on each other during the middle to late years of marriage between 1980 and 2000 at 6 different points in time. Study 2 examined the 20 year influence of marital satisfaction, sexual satisfaction, and conflict frequency on divorce risk. All participants were European American married individuals who had been married an average of 13 to 14 years at the beginning of the study. The data were analyzed using a cross-lagged simplex model and a discrete-time survival analysis. Sex differences were tested. Study 1 found that conflict frequency was associated with less sexual satisfaction for men and sexual satisfaction was associated with less conflict frequency for women in the later marital years of the study. From 1980 to 2000, marital satisfaction at one time point was linked to less conflict frequency at the next time point. The relationship between marital satisfaction and sexual satisfaction was reciprocal across consecutive time points. Study 2 found that divorce risk is highest between

1983 and 1988, approximately 17 to 22 years after marriage. Implications for researchers and practitioners are discussed.

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I. General Introduction

Marriages are dynamic, constantly changing entities that sometimes last for several years, possibly until the death of a spouse and sometimes until a divorce occurs. Many divorces happen within the first 15 years of marriage, but the examination of divorces that occur after longer durations of time are almost an afterthought (Bramlett & Mosher, 2001). When divorce does occur in middle-aged couples who are in established marriages, researchers can only wonder about the reasons for divorce because few studies have examined the determinants of divorce in this population (Brown & Lin, 2012).

When individuals commit their lives to each other through marriage, they typically expect that their relationships will be enjoyable (Huston, Caughlin, Houts, Smith, & George, 2001). The experience of marital satisfaction is an important determinant of whether marriages will last or end in divorce (Karney & Bradbury, 1995; Rodrigues, Hall, & Fincham, 2006). Several factors, including the experience or lack of satisfying marital sex and the level of marital conflict, influence whether individuals are satisfied with their marriages or if divorce eventually occurs (Dzara, 2010; Hatch & Bulcroft 2004). The present studies will examine the longitudinal influence that marital satisfaction, sexual satisfaction, and conflict frequency exert on each other as well as how these aspects of marriage influence divorce risk over a 20 year period in middle-aged individuals in established marriages.

Marital Satisfaction, Sexual Satisfaction, Conflict Frequency, and Divorce

Satisfied married individuals are not likely to want to divorce, but those who are not satisfied with their marriages are more likely to end them (Broman, 2002; Rodrigues et al., 2006). Whether or not a divorce occurs and individuals' marital satisfaction are also dependent upon the level of sexual satisfaction and the level of conflict within marriages. The association between sexual satisfaction and marital satisfaction may be bi-directional. If the expectation for

sexual gratification is not met, sexual disillusionment may lead individuals to evaluate their marriages as less satisfying (Litzinger & Gordon, 2005; MacNeil & Byers, 2009; Yeh, Lorenz, Wickrama, Conger, & Elder, 2006) or satisfying sex may lead individuals to have more positive overall evaluations of their marriages (Litzinger & Gordon, 2005; MacNeil & Byers, 2009; Yeh et al., 2006). When individuals experience marital satisfaction, they often have a tendency to overlook the sexual relationship if it is unfulfilling. But, if marriages are not satisfying, the experience of marital sex may be less enjoyable (Henderson-King & Veroff, 1994). Thus, individuals' feelings about their marriages and sex may influence each other.

Conflict frequency also influences the level of marital satisfaction experienced within relationships and vice versa (Faulkner, Davey, & Davey, 2005; Fincham, 2003; Kluwer & Johnson, 2007). When individuals are satisfied with their marriages, they may view disagreements as healthy interactions that help resolve problems. In this case, individuals feel comfortable addressing marital issues as they arise, even if arguments with their spouses may occur (Seluk, Zayas, & Hazan, 2010). Conversely, the occurrence of many disagreements may be reflective of the emotional climate of marriages for those who are not satisfied with their marriages (Gottman & Krokoff, 1989). In this situation, individuals may feel that their marriages are in dire condition, especially if they feel as though common ground with their spouses cannot be found on one or several relational problems. Hence, marital satisfaction and conflict frequency may mutually influence each other.

Sexual satisfaction and conflict frequency may also have reciprocal influences on each other (Haning et al., 2007; Treaan, 2010). When husbands or wives have harmonious interactions with their spouses, it may be easier to create an environment in which satisfying sex may occur. On the other hand, when spouses frequently disagree with each other, they may become

preoccupied with how or if the conflict at hand will be adequately resolved. Thus, spouses may not be able to enjoy sex because their minds are occupied with resolving marital disagreements. Alternatively, the “make-up” sex phenomenon may be at work when disagreements arise. If sex is very satisfying, marital partners may no longer care about their current conflicts; thus, the conflicts may seemingly resolve themselves. If sex is not enjoyable, sexual frustration may set in and lead to an increased sensitivity about marital problems and exacerbate current disagreements.

Some evidence suggests that when marital or sexual satisfaction is low or conflict frequency is high, individuals may be more susceptible to divorce than when marital or sexual satisfaction is high or conflict frequency is low (Dzara, 2010; Gager & Sanchez, 2003; Heaton & Blake, 1999). In these cases, individuals may begin to believe that the costs of being married outweigh the benefits and may seek to end their marriages in search of greater relational or sexual satisfaction or to rid themselves of conflict laden interactions with their spouses.

It is also possible that critical periods for divorce may exist within marriages; at some point, individuals may be more likely to obtain a divorce and, at others, they may be less likely to want one. Unfortunately, the research on how marital and sexual satisfaction and conflict frequency influence the fluctuating risk for divorce have basically been non-existent. For example, we know that lower marital and sexual satisfaction and higher conflict frequency are predictive of whether or not a divorce will occur (Broman, 2002; Dzara, 2010; Heaton & Blake, 1999). We do not know, however, if these features of marriage exert a constant influence on divorce risk over time or if this influence on divorce is greater at some times and weaker at others.

Social Exchange Theory

Social exchange theory posits that the levels of rewards and costs within marriages influence how individuals evaluate their relationships (Byers & Wang, 2004; Rusbult, 1983; Rusbult, Johnson, & Morrow, 1986). Relational rewards are the aspects of relationships that are experienced as pleasurable or enjoyable and can lead to more positive relational evaluations. Ideally, relational rewards may make individuals want to remain married and make divorce seem less appealing. Relational costs, on the other hand, are aspects of relationships that are not experienced as pleasurable. Relational costs detract from individuals' relationship satisfaction. Higher levels of costs within marriages may make divorce seem more attractive, especially if the relational costs outweigh the rewards (Sprecher, 2002).

Sexual satisfaction is one marital feature that can be considered a relational reward if it is relatively high and a relational cost if it is relatively low (Sprecher & Cate, 2004). Although, sexual satisfaction can range from low to high, having or not having sexual satisfaction is relative to individuals' experiences. If individuals experience higher sexual satisfaction within their marriages, they may have higher marital satisfaction and fewer thoughts of divorce. Conversely, if sexual satisfaction is lower, individuals may evaluate their marriages as less satisfying and consequently, may have more considerations of divorcing their spouses.

Although some degree of marital conflict is normative and healthy (Crohan, 1992), if the level of conflict within marriages becomes too high, it may become a relational cost. Thus, if individuals have a considerable number of conflicts with their spouses, they may have lower marital satisfaction and may consider divorce if too many conflicts arise within their marriages (Heaton & Blake, 1999; Kluwer & Johnson, 2007).

It is possible that the influence of these aspects of relationships on divorce risk does not matter the longer that the marriage lasts because the cost of ending the marriage increases the

longer it continues (Huesmann & Levinger, 1976). Another possibility is that individuals' perceptions of marital rewards and costs influence the presence or absence of attractive alternative partners. For example, when individuals are satisfied with their marriages, they may evaluate alternative partners as less attractive and the absence of attractive alternatives may promote relationship stability (Huesmann & Levinger, 1976; Levinger, 1979). Alternatively, when individuals are not satisfied with their marriages, real or imagined alternative partners become more attractive and individuals may be more likely to want a divorce.

Current Research on Longer-Term Marriages

Marriages and the characteristics of them are dynamic and not stagnant. Marital and sexual satisfaction have been shown to be the highest at the beginning of marriage and then decline over time or once children are present (Ahlborg, Dahlof, & Hallberg, 2005; Bradbury, Fincham, & Beach, 2000). Conflict frequency also changes over time depending on how long individuals have been married (Hatch & Bulcroft, 2004). Therefore, it cannot be assumed that marital satisfaction, sexual satisfaction, and conflict frequency identically influence each other over time, earlier and later in marriages, since each of these aspects of marriage changes over time.

To date, the examinations on how these important influences on marital relationships relate to each other in middle-aged populations have been cross sectional or have only examined associations between two time points (Dundon & Rellini, 2010; Hatch & Bulcroft, 2004; Litzinger & Gordon, 2005; MacNeil & Byers, 2009; McGonagle, Kessler, & Schilling, 1992). For example, sexual satisfaction and marital satisfaction are positively related for individuals in established marriages (Dundon, & Rellini, 2010; Hieman et al., 2011; Litzinger & Gordon, 2005). Only one longitudinal study has examined the relationship between marital and sexual

satisfaction for individuals in their middle years of marriage. That study found that sexual satisfaction at one point in time is positively related to marital satisfaction at the next point in time but that marital satisfaction is not predictive of sexual satisfaction (Yeh et al., 2006). In middle adulthood, when individuals experience greater marital satisfaction they have fewer conflicts, but this association is only found between two time points (Faulkner et al., 2005). Thus, we know little about how conflict frequency and marital satisfaction influence each other in middle-aged populations and whether these aspects of relationships are similarly associated as marriages endure. We also do not know how or if conflict frequency and sexual satisfaction are associated for individuals in established marriages.

Individuals' levels of sexual satisfaction may be more important to their evaluations of whether or not to stay married at certain times over others. For example, individuals who have lower sexual satisfaction at the beginning of a marriage may be more likely to end it than those who have been married for many years. The latter may believe that greater sexual satisfaction is mostly experienced at the beginning of a marriage (Nobre & Pinto-Gouveia, 2006). Individuals who experience frequent arguments with spouses may be more likely to end a marriage after being married several years because they can no longer tolerate arguing, whereas those who have recently married may think that frequent arguments are part of growing together as spouses (Crohan, 1992). Thus, the latter will not divorce on the basis of frequent arguments. Studies have typically examined if sexual satisfaction and conflict frequency influence whether or not a divorce occurs and not how they may differentially influence divorce risk over time (Dzara, 2010; Hatch & Bulcroft, 2004).

Limitations in Research and the Present Studies

Even though marital satisfaction and divorce are a part of a continuous process, they are rarely examined in the same study (Karney & Bradbury, 1995; Kurdek, 2002). The emphasis of

most studies has been on whether individuals or couples are satisfied with their marriages or if they divorce rather than examining how relational features, specifically sexual satisfaction and conflict frequency, influence the prediction of marital satisfaction and divorce risk over time.

The present studies will address these limitations by broadening the focus to how sexual satisfaction, conflict frequency, and marital satisfaction influence each other and divorce risk in long-term marriages. In addition, we will control for several demographic variables that have been associated with these relational variables, such as age at marriage, number of years married, education level, number of children, premarital cohabitation status, subjective health, and income (Faulkner et al., 2005; Karney & Bradbury, 1995; Traeen, 2010; Hatch & Bulcroft, 2004). We will examine how the marital costs and rewards of sexual and marital satisfaction and conflict frequency influence each other and the risk of divorce; but even more importantly, we will also examine these associations six times over a 20 year period to address how the influences of these marital costs and rewards on each other and divorce risk change over this long period of time.

Marital satisfaction, sexual satisfaction, conflict frequency, and divorce risk will be examined in individuals who have been married an average of 13 to 14 years at the beginning of the study. Those who participated in the entire study were married an average of 33 to 34 years at the study's conclusion. Thus, average participants in the present studies were in established marriages. Many examinations of how marital and sexual satisfaction and conflict frequency influence each other have been examined in individuals who have been married for five years or less (Crohan, 1996; Dzara, 2010; Henderson-King & Veroff, 1994; Schmitt, Kliegel, & Shapiro, 2007). Since long-established marriages are in many ways different from shorter term ones (Schmitt et al., 2007), we will examine if the same factors that have been found in previous

work to contribute to marital satisfaction and stability in shorter term marriages are the same or different from those in longer term marriages.

The ideas for the present studies were birthed from Yeh and colleagues' (2006) study of marital satisfaction, sexual satisfaction, and marital instability. They assessed these constructs five times over an eleven year period in middle-aged adults who were in established marriages. We will advance their study in two ways. Yeh and colleagues did not assess how conflict frequency influences marital and sexual satisfaction which we will do in study one, using an autoregressive cross-lagged model as they did. Thus, study one focuses on the interrelationships among marital satisfaction, sexual satisfaction, and conflict frequency in individuals who were continuously married between 14 and 34 years.

Yeh and colleagues also assessed how marital and sexual satisfaction influence marital instability. Their measure of marital instability assessed for the inclination to separate or divorce and not whether a divorce actually happened. In study two, we will assess how marital satisfaction, sexual satisfaction, and conflict frequency influence the risk of actually divorcing during the middle to late years of marriage. We will also assess how the risk for divorce is constant or fluctuates over a 20 year period. A discrete-time survival analysis will be used to assess divorce risk over this time.

II. Study 1: Longitudinal Interrelationships among Marital Satisfaction, Sexual Satisfaction, and Conflict Frequency

Abstract

Marital satisfaction is a quality of life indicator that has implications for several relational phenomena. Specifically, sexual satisfaction and conflict frequency are two commonly studied relational variables that influence marital satisfaction, but the influence that these three variables, taken together, exert on each other is unclear. The present study will examine the influence that marital satisfaction, sexual satisfaction, and conflict frequency exert on each other during the middle to late years of marriage between 1980 and 2000 at 6 different points in time. Participants were 1,324 European American married individuals who had been married an average of 14 years at the beginning of the study. The data were analyzed using a cross-lagged simplex model and sex differences for each of the paths were tested. Conflict frequency was associated with less sexual satisfaction for men in the present study and sexual satisfaction was associated with less conflict frequency for women in the later marital years of the study. From 1980 to 2000, marital satisfaction at one time point was linked to less conflict frequency at the next time point. The relationship between marital satisfaction and sexual satisfaction was reciprocal across consecutive time points. Methodological, theoretical, and clinical applications are discussed.

Longitudinal Interrelationships among Marital Satisfaction, Sexual Satisfaction, and Conflict Frequency

Marital satisfaction is one of the most salient indicators of quality of life for married individuals. Satisfied married people are generally happier with their lives (Deiner, Suh, Lucas, & Smith, 1999; Wood, Rhodes, & Whelan, 1989). Satisfying marriages often ameliorate the negative effects of depression (Holt-Lundstad, Birmingham, & Jones, 2008), anxiety (Caughlin, Huston, & Houts, 2000), and other mental health disorders (Kiecolt-Glaser & Newton 2001). Additionally, individuals with greater marital satisfaction experience fewer health related difficulties that may allow them to live longer, healthier lives than those who are not satisfied with their marriages (Coyne et al., 2001; Kiecolt-Glaser & Newton, 2001). Therefore, continued examination of the factors that predict and detract from marital satisfaction is warranted.

Sexual satisfaction and conflict frequent are two commonly studied aspects of relationships that directly influence the evaluation of individuals' marital satisfaction. When individuals are sexually satisfied they have more satisfactory marriages (Litzinger & Gordon, 2005; Oggins, Leber, & Veroff, 1993; Stanik & Bryant, 2012). Additionally, when individuals have fewer conflicts with their spouses, they are more satisfied in their marriages (Faulkner et al., 2005; Fincham, 2003; Kluwer & Johnson, 2007). Interestingly, few investigations have examined the longitudinal interplay among conflict frequency, sexual satisfaction, and marital satisfaction in marital relationships. To date, longitudinal studies have examined the relationship between marital and sexual satisfaction and have consistently found that individuals with greater marital satisfaction tend to have greater sexual satisfaction (Christopher & Sprecher, 2000; Litzinger & Gordon, 2005; Young, Denny, Luquis, & Young, 1998). However, longitudinal

examinations of the relationship between marital satisfaction and conflict frequency and between sexual satisfaction and conflict frequency are not as prevalent.

It is important that the longitudinal relationship between marital satisfaction and conflict frequency and between conflict frequency and sexual satisfaction be examined due to the relationship that conflict has with both marital and sexual satisfaction. Frequent disagreements may lead individuals to feel less satisfied with their marriages if they feel that they cannot reach common ground with their spouses. Additionally, frequent arguments may detract from the feelings of warmth between partners that some individuals need to feel sexually satisfied. Therefore, the present study will not only examine the longitudinal associations between marital and sexual satisfaction, but it will also examine the longitudinal relationships that conflict frequency has with marital and sexual satisfaction. We will examine these interrelationships in middle-aged, married individuals.

Social Exchange Theory

For the present study, social exchange theory will be used as the lens through which we examine how conflict frequency, sexual satisfaction, and marital satisfaction influence each other over time. The goal of most individuals in intimate relationships is to maximize relational rewards and minimize relational costs (Byers & Wang, 2004). Rewards are aspects of relationships that individuals experience as positive and pleasurable whereas costs are aspects of relationships that inflict mental, emotional, or physical pain (Byers & Wang, 2004; Rusbult, 1983). The present investigation will consider greater marital and sexual satisfaction and lower conflict frequency as relational rewards whereas lower marital and sexual satisfaction and greater conflict frequency will be considered relational costs.

Individuals will be more satisfied with their marriages to the extent that they have more relational rewards (greater sexual satisfaction and lower conflict frequency) and fewer relational costs (less sexual satisfaction and greater conflict frequency) (Rusbult, 1983; Rusbult et al., 1986). Similarly, individuals may have greater sexual satisfaction to the extent that they have more marital rewards (greater marital satisfaction and less conflict frequency) and fewer marital costs (less marital satisfaction and greater conflict frequency). Conflict frequency, on the other hand, may be greater when individuals experience greater relational costs (lower marital and sexual satisfaction) and fewer relational rewards (higher marital and sexual satisfaction). We recognize that the aspects of relationships examined in the present study exist on a continuum, but progressively higher levels of marital and sexual satisfaction will be considered rewarding to marriages whereas progressively higher levels of conflict frequency will be considered costly to them.

Marital Satisfaction and Sexual Satisfaction

It is widely accepted that individuals who have satisfying sex also have satisfying marriages (Christopher & Sprecher, 2000; Edwards & Booth 1994; Litzinger & Gordon, 2005; Oggins et al., 1993; Perrone, & Worthington, 2001; Stanik & Bryant, 2012; Yeh et al., 2006; Young et al., 1998). Some evidence suggests that a sex difference exists in the direction of the relationship between marital and sexual satisfaction (Byers, 2005). It has been argued that women's sexual satisfaction is driven by relational factors whereas men's sexual satisfaction is not (Henderson-King & Veroff, 1994; Oggins et al., 1993).

For example, women's enjoyment of sex is dependent on whether they perceive their relationship to be satisfying, whereas this is not the case for men (Feeney & Noller, 2004). Alternatively, men more than women, evaluate relationships as satisfying when they are sexually

satisfied and may be more prone to end a relationship when sex is not enjoyable (Lawrence et al., 2008; Sprecher, 2002). In line with this argument, Lawrence and colleagues found that compared to women, men's satisfaction with their marriages declined more rapidly over time when they were not sexually satisfied. However, they were not able to assess whether this relationship was maintained after the first three years of marriage, since data collection ended at that time.

Furthermore, it has been posited that marital satisfaction and sexual satisfaction have reciprocal effects on each other (Edwards & Booth 1994; Henderson-King & Veroff, 1994). By reciprocal, we mean that over multiple points over time, marital satisfaction predicts sexual satisfaction which then further predicts marital satisfaction. Thus, a cycle may be created so that these two aspects of relationships continuously influence each other from year to year. To our knowledge this notion has only been tested in one study but longitudinal reciprocal influence was not found (Yeh et al., 2006). Yeh and colleagues found that sexual satisfaction consistently influences marital satisfaction over an eleven year period but marital satisfaction does not influence sexual satisfaction. The notion that reciprocal influence exists between these two constructs should be retested in a population that consists of people outside of rural Iowa, which was the population studied by Yeh et al. (2006).

The evidence provided thus far suggests that men may feel more satisfied with their marriages when they are sexually satisfied while women may feel more satisfied with sex when they are satisfied with their marital relationship. It is also possible that the association between marital and sexual satisfaction is reciprocal. These notions will be tested in the present study over 20 years of marriage.

Other non-sexual aspects of a relationship might also have influence on marital and sexual satisfaction (Young et al., 1998). Some empirical evidence suggests that the level of

conflict within a relationship may influence both marital and sexual satisfaction. On average, individuals who frequently argue with their spouses have less marital satisfaction (Faulkner et al., 2005; Kluwer & Johnson, 2007). When individuals cease to have sex, the most frequently cited reason is marital discord (Edwards & Booth 1994). This finding suggests that sexual satisfaction is influenced by how well individuals get along with their spouses. Therefore, the relationship between conflict frequency and marital and sexual satisfaction will also be examined in the present study.

Marital Satisfaction and Conflict Frequency

A robust literature exists that illuminates the associations among specific conflict resolution styles and marital satisfaction (Birditt, Brown, Orbuch, & McIlvane, 2010; Burleson & Denton, 1997; Carrère & Gottman, 1999; Gottman & Levenson, 2000; Roberts, 2000). Conflict frequency, another dimension of marital conflict, is negatively associated with marital satisfaction. Satisfied married individuals have been found to have more agreements than disagreements with their spouses whereas unsatisfied married individuals have more disagreements than agreements and engage in more conflicts than satisfied married individuals (Faulkner et al., 2005; Fincham, 2003; Gottman & Levenson, 1992; Kluwer & Johnson, 2007; Oggins et al., 1993). These findings are consistent in both cross-sectional and short term longitudinal studies.

A sex difference may exist in how conflict frequency influences marital satisfaction. Lawrence and colleagues (2008) found that women's marital satisfaction declined more quickly than men's over the first 3 years of marriage when the perceived level of conflict within the marriage was high. This suggests that in the present study, the negative link between conflict

frequency and marital satisfaction may be stronger for women. It is unclear whether or not the sex differences in this association are maintained beyond the first 3 years of marriage.

Lawrence and colleagues (2008) only examined the influence of conflict on marital satisfaction when, in fact, conflict may be both a cause and consequence of decreased marital satisfaction (Karney & Bradbury, 1995). It may be that increased levels of conflict within a relationship lead to decreased assessments of marital satisfaction or that decreased marital satisfaction leads to increased conflict. Another possibility is that a reciprocal cycle is formed so that more frequent conflicts lead to less marital satisfaction which in turn leads to more conflict. The present study will test these possibilities.

Sexual Satisfaction and Conflict Frequency

Less is known about how conflict frequency influences sexual satisfaction or, alternatively, how sexual satisfaction influences conflict frequency. The research that exists, although limited, suggests that frequent arguing is negatively associated with sexual satisfaction for men and women (Haning et al., 2007; Treaan, 2010). Haning and colleagues found that in individuals in their late twenties, 25% of whom were married, greater conflict was associated with less sexual satisfaction for men and women. However, the measure that was used to assess conflict included questions about conflict frequency, withdrawal and criticizing during arguments, and feelings of resentment (Haning, 2005). Therefore, this was not a true measure of how frequently individuals argue with their spouses. Treaan, (2010) found that for individuals between the ages of 18 and 67 one of the most frequently cited reasons for a lack of sexual satisfaction was frequent arguments with one's spouse or partner. In fact, in Treaan's study, 35% of men and 33% of women reported that frequent arguing was a contributing factor to their lack of sexual satisfaction.

The results from these studies leave us with more questions than answers. Because the studies that have examined this relationship are cross sectional and have not directly tested the relationship between sexual satisfaction and conflict frequency, we know little about the direction of the influence that sexual satisfaction and conflict frequency exert on each other. Does sexual satisfaction influence conflict frequency or does conflict frequency influence sexual satisfaction? Or is there reciprocal influence? The present study will answer these questions.

The Present Study

The present study will examine the interrelationships among marital satisfaction, sexual satisfaction, and conflict frequency in continuously married middle-aged individuals. One advantage of the present study over previous ones is that married individuals were followed over the course of 20 years at 6 different time points, whereas the other longitudinal studies reviewed thus far have followed individuals and couples for much shorter durations (Edwards & Booth, 1994; Henderson-King, & Veroff, 1994; Kluwer & Johnson, 2007; Yeh et al, 2006). The present study is an investigation of middle-aged individuals who are in established marriages as opposed to newly formed ones, which extends previous research by examining the interrelationships among marital satisfaction, sexual satisfaction, and conflict frequency in the middle to late years of marriage. Additionally, no other study has examined the interplay among sexual satisfaction, conflict frequency, and marital satisfaction over such an extended period. To best examine these inter-relationships, a cross-lagged simplex model will be used as it will allow us to simultaneously test associations among these constructs.

We control for several socio-demographic variables that are associated with marital satisfaction, sexual satisfaction, and/or conflict frequency. The number of years married, number children in the home (Faulkner et al., 2005; Hatch & Bulcroft, 2004), age (Karney & Bradbury,

1995), education, income (Greenstein, 1995; Traeen, 2010), and subjective health (Faulkner et al., 2005; Fincham, 2003; Hatch & Bulcroft, 2004) are related to individuals' perceptions of marital satisfaction, sexual satisfaction, and/or conflict frequency. Controlling for these variables allows us to test stringently the associations among the variables of interest.

Based on previous research, the following questions will be addressed in the present study:

RQ1: Controlling for conflict frequency, does a positive and reciprocal relationship exist between marital satisfaction and sexual satisfaction over time and is the relationship the same for men and women?

RQ2: Controlling for sexual satisfaction, does a negative and reciprocal relationship exist between conflict frequency and marital satisfaction over time and is this relationship the same for men and women?

RQ3: Controlling for marital satisfaction, does a negative and reciprocal relationship exist between conflict frequency and sexual satisfaction over time, and is this relationship the same for men and women?

Method

Data

The *Marital Instability over the Life Course* dataset provides the data for the present study (Booth, Johnson, Amato, & Rogers, 1980-2000). The data were accessed from the Interuniversity Consortium for Political and Social Research (ICPSR) website. Data collection occurred in 1980, 1983, 1988, 1992, 1997, and 2000. Random digit dialing was used to select the sample. All husbands and wives under the age of 55 in the United States were eligible for participation. The sample is reportedly representative of all married individuals in the

United States in terms of age, race, household size, presence of children, and home ownership. The sample includes more women than men and is more educated than the average population, as evidenced by 30% of the sample having a bachelor's degree versus 24% of the national population (Booth et al, 1980-2000). According to the researchers, attrition only slightly influenced the representativeness of the sample. Individuals who were younger, African Americans, males, renters, households where the husband had no college education, southern residents, and residents of metropolitan areas were no more than 4% less likely to complete the study (Booth et al, 1980-2000). For more information about data collection procedures see Amato, Johnson, Booth, & Rogers (2003).

Participants

The original sample consisted of 2,033 men and women who were married as of 1980. Since this study investigates how the variables of interest change over time for continuously married individuals, only participants who remained married over the course of the study were included. Thus, 302 participants were deleted because this was not their first marriage and 225 participants who had divorced from 1980 to 2000 were deleted. Since the original sample was overwhelmingly European American, participants of other racial groups were not included in the analytical sample ($n=182$). The analytic sample is comprised of 1,324 participants of whom 549 (41%) were men and 775 (59%) were women.

The mean age of participants in 1980 was 35.9 ($SD=9.4$) and participants had married at an average age of 21.5 ($SD=3.3$). On average, participants had 14 years of education in 1980 ($M=13.6$, $SD=2.5$), which indicates that most participants had slightly above a high school diploma at the beginning of the study. Participants had been married for an average of 14.4 years ($SD=9.4$) and had approximately two children ($M= 2.1$, $SD= 1.6$) at the beginning of the study.

The mean household income at the beginning of the study was \$29,539 ($SD = \$16,591$). Separate demographic information for men and women is presented in Table 1.

Measures

Marital satisfaction. Following the suggestions of previous research (Bradbury et al., 2000; Whisman, 1997), we took into consideration the criticism that the most widely used measures of marital satisfaction actually measure constructs other than marital satisfaction and re-evaluated the psychometric properties of our initial measure. In its original form, the marital satisfaction measure was an 11-item scale, but after conducting Principal Components Analyses (PCA), the scale was reduced to 5 items that focus only on marital satisfaction. Marital satisfaction was thus assessed at six time points with the following five statements: "How happy are you with the amount of understanding you receive from your spouse?," "How happy are you with the amount of love and affection you receive from your spouse?," "How happy are you with your spouse as someone to do things with?," "How happy are you with the extent to which you and your partner agree about things?," and "Taking all things together, how would you describe your marriage? Responses were coded on a 3-point Likert scale from 1 (*very happy*) to 3 (*not too happy*). Items were reverse scored so that higher scores indicated greater marital satisfaction. Cronbach's alpha for this measure ranged from .78-.85 and .80-.89 for men and women, respectively, across all six time points.

Sexual satisfaction. It has been argued that single item global measures may be best when measuring sexual satisfaction to ensure measurement fidelity to the construct of sexual satisfaction (Fincham & Bradbury, 1987; Sprecher & Cate, 2004). Additionally, many large scale surveys that have measured sexual satisfaction have used global assessments of sexual satisfaction instead of multi-item scales (DeLamater, Hyde, & Fong, 2008; Dundon & Rellini

2010; Dzara, 2010; Laumann, Gagnon, Michael, & Michaels, 1994; Lawrance & Byers, 1998). Following in this tradition, we also will use a single item to assess sexual satisfaction in the present study. The sexual satisfaction item was originally a component of the marital satisfaction measure, but due to evidence that suggests that marital and sexual satisfaction are two separate domains (Mark & Jozkowski, 2013), the sexual satisfaction question was extracted from the marital satisfaction items. Sexual satisfaction was assessed at six time points with the question, “How happy are you with your sexual relationship?” Responses were coded on a 3-point Likert scale from 1 (*very happy*) to 3 (*not too happy*). Items were reverse scored so that higher scores indicated greater sexual satisfaction.

Conflict frequency. Conflict frequency is typically measured with an item that reflects the total number of arguments (Crohan, 1996; McGonagle et al., 1992). Following the suggestion that single item measures reduce response fatigue (Robins, Hendin, & Trzesniewski, 2001), the present study also used a single item measure of conflict frequency. Conflict frequency was assessed at six time points with the global question “How often do you disagree with your husband/wife?” Responses were coded on a 5- point Likert Scale from 1 (*never*) to 5 (*very often*).

Control variables. Several variables that have been shown to have an influence on marital satisfaction, sexual satisfaction, and/or conflict frequency will be controlled. These variables will be tested as controls for 1980 marital satisfaction, sexual satisfaction, and conflict frequency. *Subjective health* was measured with the question “In general, would you say your own health is excellent, good, fair, or poor?” Responses were coded on a 4-point Likert scale from 1 (*poor*) to 4 (*excellent*). To measure *number of children*, respondents were asked “altogether, counting children who live with you and children, who don’t, how many children

have you had?" Responses ranged from 0 to 10. *Education* was measured with the question "how many years of school have you completed?" Responses ranged from 3 to 22 years. *Income* was measured by asking participants their total household income in 1979. *Years married* was measured by subtracting participants' years married from their age when they were first married. *Age* was measured by asking participants how old they were in 1980.

Analysis plan. A cross-lagged simplex hypothesized model was fit to the full sample to test the significance of the direct and indirect paths across 3 domains (marital satisfaction, sexual satisfaction, and conflict frequency) across 6 time points from 1980 to 2000 (see Figure 1). Second, a multi-group model tested moderation by sex of each path in the model. Differences across the paths for males and females were tested using delta chi-square tests. These analyses were conducted with the SAS and Mplus statistical programs (SAS, 2002-2004; Muthen & Muthen, 1998-2010).

Missing data were not imputed; rather, available data from all 1,324 participants were used in analyses by using full information maximum likelihood (FIML) estimation with robust standard errors. FIML estimation is one of the best methods of dealing with missing data (Acock, 2005). Model fit was assessed by the χ^2 statistic/degrees of freedom ratio and the RMSEA. A χ^2 statistic/degrees of freedom ratio of less than 5 and an RMSEA less than .10 indicate good model fit (Wheaton, Muthen, Alwin, & Summers, 1977).

Results

First, univariate statistics were estimated for each study variable for men and women separately and are presented in Table 1. The distribution of each variable was examined. A square root transformation was used for the marital satisfaction variable to ensure that this variable met the assumption for normality when conducting linear analyses. All other variables

were relatively normally distributed. Bivariate statistics were estimated for all study variables for women separately (bivariate results available from author by request).

We fit the hypothesized model to the full sample (see Figure 2). Model fit statistics indicate that the model fit the data moderately well ($\chi^2=909$, $DF=156$, χ^2/DF ratio= 5.8; RMSEA=.06). The auto-regressive effects of marital satisfaction at one point in time predicting marital satisfaction at the next point in time are all positive and significant. A similar pattern exists for the auto-regressive effects of both sexual satisfaction and conflict frequency. Clearly, stability across time exists in each of these domains as can be seen by the parameter and correlation estimates for each of these paths. In this and the multi-group model below, age of respondent, health status, number of children, years married in 1980, and education level are significant, but income is not. Thus all control variables except income were retained in the model.

Interpreting a main effects model once a moderated model has been tested and found to be significant (see below) is not recommended by most methodologists (Singer & Willett, 2003), but we will mention a few of the main effects. Several cross-lagged effects are significant across time (see Figure 2). Marital satisfaction at each time point is positively predictive of sexual satisfaction at the next time point (see Figure 2). In fact, the effect size is larger at each time point (.69, $p<.001$ to 1.04, $p<.001$). At each time point, marital satisfaction is negatively predictive of conflict frequency at the next point in time. Conflict frequency negatively predicts marital satisfaction from one time point to the next at a fairly consistent level across the 20 years, except for 1983 to 1988. Conflict frequency in 1980 negatively predicts sexual satisfaction but only in 1983, and sexual satisfaction only predicts the next time point for marital satisfaction twice in this model.

More importantly, we conducted a multi-group analysis that tested, using delta-chi square tests, if the effects between and across all of the observed variables were equal or not for men and women. In other words, the main effects model was moderated by sex. Model fit statistics indicate that the multi-group model fit the data well ($\chi^2=1155$, $DF= 388$, χ^2 /DF ratio= 2.9; RMSEA=.06; see Figure3). Marital satisfaction, sexual satisfaction and conflict frequency at one point in time are positively associated with themselves at subsequent time points, as is usual in all simplex models; the strength of most of these paths is similar for men and women. The only significant difference between men and women's auto-regressive effects occurs from conflict frequency in 1992 to conflict frequency in 1997 ($\beta_{Men} = .40$, $r = .43$, $p=.001$; $\beta_{Women} = .28$, $r = .26$, $p=.001$).

Several cross-lagged paths are different for men and women. Marital satisfaction in 1992 (12 years after the start of the study) negatively predicts conflict frequency in 1997 for men ($\beta_{Men} = -1.15$, $r = -.27$, $p=.001$) and women ($\beta_{Women} = -.89$, $r = -.22$, $p=.001$), but the association is stronger for men. Similarly, marital satisfaction in 1997, 17 years after the start of the study, is negatively predictive of conflict frequency in 2000 for men ($\beta_{Men} = -.85$, $r = -.21$, $p=.001$) and women ($\beta_{Women} = -.39$, $r = -.10$, $p=.10$) but this association is much stronger for men. If men are maritally satisfied in the middle to later part of marriage they experience less conflict a few years later as do the women, but women's experience of conflict is less effected by previous marital satisfaction.

Fewer differences in cross-lagged paths are significant when sexual satisfaction is the predictor. The path from sexual satisfaction in 1997, again, late in marriage, to marital satisfaction in 2000 is negative for men ($\beta_{Men} = -.02$, $r = -.10$, $p=.10$) but not significant for women. The path from sexual satisfaction in 1997 to conflict frequency in 2000 is negative for

women ($\beta_{Women} = -.15, r = -.15, p = .05$) but not significant for men. So, very late in marriage, men's sexual satisfaction is somewhat related to marital satisfaction 3 years later, but women's is not; whereas women who are sexually satisfied later in marriage experience less conflict frequency 3 years later.

Sex differences in cross-lagged paths also exist when conflict frequency is the predictor. Men's conflict frequency in 1980 negatively predicts 1983 sexual satisfaction ($\beta_{Men} = -.08, r = -.08, p = .01$) but no association exists for women. The path from 1988 conflict frequency to 1992 marital satisfaction is negative for women ($\beta_{Women} = -.04, r = -.14, p = .001$) but not significant for men. Lastly, the path from 1997 conflict frequency to 2000 marital satisfaction is significant and negative for women ($\beta_{Women} = -.03, r = -.12, p = .01$) but not significant for men. Overall, near the beginning of this study, men's sexual satisfaction is lower if their experience of conflict is greater a few years earlier, but for women, during the later years of this study, it is their marital satisfaction that is lower if their conflict frequency is greater in prior years.

Many cross lagged paths are the same for men and women. Marital satisfaction at one time point positively predicts sexual satisfaction at the next time point, and marital satisfaction at one time point negatively predicts conflict frequency at the next time point. So, on average, both men and women who are maritally satisfied at one time point experience more sexual satisfaction and less conflict at the next time point. However, later in the marriage, the effect of men's marital satisfaction on conflict frequency is much greater than it is for women. Lastly, and similarly for men and women, at the beginning of the study, conflict frequency negatively predicts marital satisfaction 3 years later ($\beta = -.02, r = -.09, p = .001$) as well as from 1992 to 1997 ($\beta = -.02, r = -.09, p = .01$). During several other cross-lagged years (1988 to 1992 [$\beta = -.04, r = -.14, p = .001$] and 1997 to 2000 [$\beta = -.03, r = -.12, p = .01$]) women who experience more conflict,

experience lower marital satisfaction a few years later, but for men this relationship does not exist. So later in marriage women appear to be more sensitive to marital conflict and it has a greater negative effect on their satisfaction with their marriages.

The multi-group cross-lagged model for men predicts between 32.1% and 47.9% of the variation in marital satisfaction, between 16.9% and 29.2% of the variation in sexual satisfaction, and between 13.7% and 34.5% of the variation in conflict frequency. For women, the cross-lagged model predicts between 36.8% and 49.1% of the variation in marital satisfaction, between 20.1% and 30.6% of the variation in sexual satisfaction, and between 16.1% and 26.3% of the variation in conflict frequency.

Discussion

The present study examined the longitudinal interrelationships among marital satisfaction, sexual satisfaction, and conflict frequency over a 20 year period during the middle years of marriage. Our goal was to determine if the associations between marital and sexual satisfaction, marital satisfaction and conflict frequency, and between conflict frequency and sexual satisfaction are reciprocal over time and if sex differences exist among these associations. Some relationships are reciprocal and others are not. Sex differences exist in some associations but most of these differences are not consistently found across the 20 year period.

Sexual Satisfaction and Conflict Frequency

For example, no reciprocal associations exist for the relationship between sexual satisfaction and conflict frequency. In fact, with the exception of the assessment at the beginning of the study for men and the end of the study for women, sexual satisfaction and conflict frequency are unrelated. It was curious that conflict frequency, only for men, influenced sexual

satisfaction negatively at the beginning of this study. Then at the end of the study, sexual satisfaction negatively influences conflict frequency only for women.

Consistent with previous cross sectional research, conflict frequency is negatively associated with sexual satisfaction earlier in marriage, but this association only exists for men (Haning et al., 2007; Treaan, 2010). Thus, when men have more frequent arguments with their spouses, they have lower sexual satisfaction but when they have fewer arguments with their spouses they have greater sexual satisfaction. It is possible that in earlier years if men have frequent arguments with their spouses that their spouses restrict access to sex and therefore men's sexual satisfaction decreases (Young et al, 1998). As marriages continue, the presence or absence of disagreements has no effect on sexual satisfaction. Even if arguments are present, they may not affect whether or not people enjoy the act of having sex.

Sexual satisfaction in 1997 negatively predicts conflict frequency in 2000 for women. Age-related changes to women's sexual functioning could be influencing their ability to feel sexually satisfied (Heiman et al., 2009; Laumann et al, 2006), leading to frustration and therefore more conflict. Another possibility is that if satisfying sex leads to increases in psychological well-being, women simply may not want to engage in arguments because they are happier and have fewer issues about which to argue (Penhollow, Young, & Denny, 2009).

Marital Satisfaction and Sexual Satisfaction

Marital satisfaction and sexual satisfaction have a reciprocal relationship, but only starting in 1980 with marital satisfaction. In 1980, marital satisfaction is positively associated with sexual satisfaction in 1983 that is then positively associated with marital satisfaction in 1988. This cycle continues until over the 20 years. Once this cycle is in place, it is maintained for a very long period of time and it can manifest itself in a way that is rewarding or costly to

individuals. When greater marital satisfaction leads to greater sexual satisfaction, individuals may work diligently to maintain this cycle within their marriages. On the other hand, when less marital satisfaction predicts less sexual satisfaction that in turn predicts less marital satisfaction, individuals may become entrenched in this perpetual negative cycle. Even if desired, changing this unrewarding cycle may be extremely difficult, which is why it is maintained for such an extended period.

These findings are consistent with previous studies that have found marital and sexual satisfaction to be positively associated (Litzinger & Gordon, 2005; Young et al., 1998). Additionally, the results from the present study indicate that men's and women's sexual satisfaction is equally predicted by marital satisfaction, meaning that sex differences do not exist in this association. This contrasts with previous findings that have suggested that a sex difference exists in how marital satisfaction predicts sexual satisfaction (Feeney & Noller, 2004; Henderson-King & Veroff, 1994; Lawrence et al., 2008; Oggins et al., 1993). To our knowledge only one other study has examined whether sexual and marital satisfaction exert a reciprocal influence on each other (Yeh et al., 2006) but, in that study, sexual satisfaction only predicts marital satisfaction and marital satisfaction does not predict sexual satisfaction. Perhaps this difference in findings can be attributed to the populations that were sampled. The sample in Yeh and colleagues' (2006) study was from a localized rural community and the sample for the present study was randomly selected from a national pool of possible participants. Thus, the findings from the present study can be generalized to a more diverse population than those from Yeh and colleagues (2006).

Marital satisfaction is consistently and positively predictive of sexual satisfaction for men and women. Although one study of individuals in shorter term marriages found similar

associations (Oggins et al., 1993), we also found that marital satisfaction is important for sexual satisfaction for individuals who have been married for an extended period of time. When individuals are more satisfied with their marriages, they are also more satisfied with sex, but when they are less satisfied with their marriages, they are less satisfied with sex. Thus, the influence of marital satisfaction on sexual satisfaction may be positive throughout the course of individuals' marriages.

Sexual satisfaction positively predicts marital satisfaction for men and women near the beginning of the study from 1983 to 1988 and from 1992 to 1997. Several factors may influence how or if this association is present. For example, the demands of maintaining a home, stressors at work, and age-related changes to sexual functioning may determine how sexual satisfaction predicts marital satisfaction because the presence of these factors may require a significant amount of time and energy to address (Laumann et al., 2006; Liu, 2000; Morokoff & Gilliland, 1993). If so, having less time to focus on sex may underlie these decreases in sexual satisfaction that in turn is related to later low marital satisfaction. But if these factors are not present, individuals may have more time to devote to sex and consequently, greater sexual satisfaction may predict greater marital satisfaction. Sexual satisfaction is not predictive of marital satisfaction from 1980 to 1983 and from 1988 to 1992, earlier in the married years. If marital partners derive their marital satisfaction from areas outside their sexual relationship, sexual satisfaction may not predict marital satisfaction.

Near the end of the 20 year period of the current study, sexual satisfaction negatively predicts marital satisfaction for men. This finding is in stark contrast to previous work that has found this to be a positive association (Edwards & Booth 1994; Litzinger & Gordon, 2005). This finding becomes easier to understand when considering the age of the participants and the stage

of the life cycle that we examined. The average male participant was approximately 37 years old in 1980 when the study began. At the study's conclusion, men were approximately 57 years old, thus it is possible that sexual functioning begins to decline that may lead to a declining sense of sexual satisfaction (Dundon & Rellini, 2010; Laumann et al., 2005) and hence a more negative sense of marital satisfaction. Additionally, men had been married an average of 14 years at the beginning of the study and approximately 34 years at the end of the study. As marriages endure the test of time, men may become more satisfied with their marriages, regardless of their sexual satisfaction, because many of the difficulties present earlier in the relationship have been resolved. The coupling of declining sexual functioning with relatively high marital satisfaction may explain this contrary finding. Additionally, it is important to remember that this study did not use an experimental design; therefore, it cannot be assumed that greater sexual satisfaction causes poorer marital satisfaction or lower sexual satisfaction causes greater marital satisfaction.

Marital Satisfaction and Conflict Frequency

For women, marital satisfaction is negatively predictive of conflict frequency that is then negatively predictive of marital satisfaction over the entire course of the study. However for men, this reciprocal relationship is only present near the beginning of the study. Individuals may experience their conflicts as having a negative impact on their overall evaluations of their marriages. If so, greater conflict frequency may lead to lower marital satisfaction that then leads to greater conflict frequency. Alternatively, when individuals have fewer conflicts with their spouses, they may evaluate their marriages as more satisfying. Thus, fewer conflicts will lead to greater marital satisfaction that then leads to fewer conflicts.

Regardless of the situation, the pattern is longer term for women. Women have been traditionally socialized to be the caretakers of close relationships and responsible for maintaining

connections with others (Umberson, Chen, House, Hopkins, & Slaten, 1996). If frequent arguments are perceived indicators of a failure to maintain this role, then frequent arguments may be more detrimental to women's well-being than men's (Fincham & Beach, 1999). When women's physical and mental health is lowered due to having frequent marital arguments, it may influence their mood and may make them prone to more arguments with their spouses (Bolger, DeLongis, Kessler, Ronald, & Schilling, 1989) and thus, experience lower marital satisfaction. Additionally, women are, on average, more demanding when arguments arise (Heffner et al., 2006). If their husbands avoid these arguments, the negative cycle may be more likely to last because the conflicts are not resolved (Christensen & Shenk, 1991). If the arguments are resolved, the frequency of disagreements may be lower, and women may evaluate their marriages more positively when the conflicts are minimal.

If men are able to elude conflict with their wives, it is possible that the number of conflicts is not important for their marital satisfaction because they may just not engage in the arguments (Christensen & Shenk, 1991). Other studies have shown conflict frequency and marital satisfaction are negatively associated (Faulkner et al., 2005; Kluwer & Johnson, 2007; Oggins et al., 1993), but the present study highlights how marital satisfaction and conflict frequency have different reciprocal influences on each other over time based on the sex of the partner.

Marital satisfaction is consistently negatively predictive of conflict frequency for men and women. Therefore, when individuals are more satisfied with their marriages, they have fewer arguments but when they are less satisfied with their marriages, they have more frequent arguments. This finding is consistent with previous studies that have found this same negative association (Faulkner et al., 2005; Kluwer & Johnson, 2007; Oggins et al., 1993).

When individuals argue frequently with their spouses, sometimes they feel less satisfaction with their marriages but when they argue less frequently with their spouses, they feel more satisfied with their marriages. At other times, only women's marital satisfaction is influenced by the level of conflict they have with their spouses. Yet still, from 1983 to 1988, marital satisfaction is not influenced by the presence or absence of marital disagreements. When examining the entire 20 year period, it appears that less conflict frequency is a stronger determinant of greater marital satisfaction for women, which is consistent with the results from a previous study (Lawrence et al., 2008). Additionally, our findings support the argument that conflict frequency and its influence on marital satisfaction is not stable but rather variable over time (Fincham & Beach, 1999).

The autoregressive effects of marital satisfaction and sexual satisfaction are significant and positive, denoting a great deal of stability across 20 years of marriage. This is consistent with previous studies (Byers, 2005; Yeh et al., 2006). Although conflict frequency is also stable over time, it has been shown to increase sometimes and decrease at other times in different longitudinal studies (Crohan, 1996; Faulkner et al., 2005). This difference is likely related to the populations that are examined. Crohan (1996) found that conflict frequency increases between years 1 and 3 in newly formed marriages while Faulkner and colleagues (2005) found that for husbands married for more than 16 years, conflict frequency declines over time. These findings indicate that the associations among conflict frequency over time may vary depending on the length of marriages and the sex of respondents.

The findings from this study support social exchange theory. According to social exchange theory, perceptions of rewards and costs will influence whether or not individuals are satisfied with their marriages (Byers & Wang, 2004; Rusbult et al., 1986). The ultimate reward

of marital satisfaction positively influences sexual satisfaction and negatively influences conflict frequency. We conceptualized sexual satisfaction as a relational reward, but its influence on marital satisfaction is not consistently positive over time. Sexual satisfaction may be a cost to the marital relationship if it is low but a marital reward if it is high. We conceptualized conflict frequency as a relational cost and its negative influence on marital satisfaction is more often present for women than men. Conflict frequency may be more costly to women's marital satisfaction when it is high and more rewarding to women's marital satisfaction when it is low. Additionally, conflict frequency is negatively predictive of sexual satisfaction for men earlier in the marriage, meaning that high conflict frequency is indeed a cost to men's sexual relationships at that time. Thus, the influence of an aspect of marital relationships as a relational reward or cost is dependent upon whether a person is male or female and the when during marriage that it is being examined.

The major strength of this study is that we have established that reciprocal cycles of influence occur between marital and sexual satisfaction and between marital satisfaction and marital conflict. Additionally, the influence that marital and sexual satisfaction and conflict frequency exert on each other is variable, perhaps depending on the life cycle of marriage. The results from the present study indicate that marriages are not stagnant entities. Rather, the influence that marital relational aspects such as these exert on each other may be constant at times, variable, or non-existent depending on when the aspects of relationship are examined. This is important to remember so that we do not assume that these marital features are automatically set once they are established.

Additionally, we were able to assess the longitudinal influences that sexual satisfaction and conflict frequency exert on each other, controlling for marital satisfaction. Prior to this study,

the findings about this relationship were only drawn from cross sectional studies, thus assumptions about the directionality of this relationship could not be made. Controlling for marital satisfaction, we know that conflict frequency negatively predicts sexual satisfaction for men earlier on in marriage; and for women, sexual satisfaction negatively predicts conflict frequency as they enter into the later years of their marriages. These findings add to our understanding of the complexity of achieving sexual satisfaction within marriages and how sexual satisfaction can influence the frequency of disagreements, especially in marriages that have lasted beyond the early years.

Another major strength of the present study is that participants are examined six times over the course of a 20 year period and are in marriages that have withstood the test of time. Much of the longitudinal work on marital satisfaction and sexual satisfaction has focused on newly married individuals (Lawrence et al., 2008; Oggins et al., 1993; Stanik & Bryant, 2012). Research on sexual satisfaction's influence on relational constructs in the middle years of marriages has been an area that comparatively few have chosen to examine (Dundon & Rellini, 2010; Laumann et al., 2006).

Several strengths are attributed to how the population was sampled. The present study did not utilize a convenience sample. Participants were recruited on a national level in the United States in 1980, and self-selection bias is reduced because the sample for the present study was randomly chosen. The sample was comprised only of individuals who were in their first marriages, thus, the number of participants' marriages did not confound the findings (Karney & Bradbury, 1995).

The limitations of this study must be considered along with its strengths. First, this is not couple data. An investigation of how marital satisfaction, sexual satisfaction, and conflict

frequency influence each other for the self and the partner would have provided a more comprehensive picture of the interrelationships among study variables. Second, we used a global measure of conflict frequency that prevents us from knowing how or if specific conflict content areas influence sexual and marital satisfaction. Third, the sample is comprised of only European Americans with a slightly higher socioeconomic status than the average person in 1980, which limits our ability to generalize to other populations. This focus on predominantly European American populations has been a criticism of marital research for quite some time (Karney & Bradbury, 1995; Whisman, 1997), yet relatively few studies have adequately addressed this limitation (Henderson-King & Veroff, 1994; Stanik & Bryant, 2012). Lastly, the individuals in this population are relatively highly sexually satisfied and satisfied with their marriages, which is not uncommon when examining these aspects of marriage. Therefore, results from different populations in which people are not very satisfied with marriages or with sex might be quite different (Fincham, 2003). For example, we may have been more likely to find a reciprocal association between sexual satisfaction and conflict frequency if more variability existed in responses for sexual satisfaction.

Future studies can address these methodological limitations by making greater efforts at recruiting couples for longitudinal marital research. Researchers also should use conflict frequency measures that not only assess global levels of marital conflict, but also assess specific areas of conflict. This will help us understand which specific conflict areas are most salient to marital functioning and satisfaction at different points of time in a marriage. Additionally, more research must be conducted with non-European American populations. As the faces of American families change, we need to make stronger efforts to examine African American, Hispanic

American, and Asian American marriages to the extent that European American marriages have been examined.

Lastly, we should focus on marital and sexual satisfaction and conflict frequency in participants with a broader range of marital and sexual satisfaction. Although clinical research often examines populations who experience very low marital and sexual satisfaction, the studies are usually on a much smaller scale and participants self-select into the research process. Therefore, a balance between married individuals who are high and low on satisfaction measures must be found so that participants with high, mid-level, and low marital and sexual satisfaction can be included in the same studies.

The present study has implications for practitioners and researchers. Although the data are not drawn from a clinical population or those in need of relational interventions, practitioners can apply these findings in therapeutic and relational education settings. When couples and individuals seek relational therapy, practitioners commonly assess levels of marital and sexual satisfaction and conflict frequency (Doss, Simpson & Christenson, 2004). When a couple presents with problems surrounding their sexual relationship, therapists should assess the level of conflict and relate that to how the couple functions sexually, since this connection may not be already acknowledged by the couple. Therapeutic theories of change suggest that when problems within the marriage are resolved, then sexual satisfaction typically increases (O'Leary & Arias, 1983). Therefore, therapists working with couples and individuals should first address areas of conflict in the marriages, before addressing sexual relationship problems.

Educational programs must be able to articulate clearly the importance of how marital and sexual satisfaction and conflict frequency influence each other and offer tools that help participants understand these interrelationships. This is especially important for intervention

programs that focus on increasing sexual satisfaction within the relationships. If the areas of conflict within the marriages are not assessed, participants may leave the intervention, try to apply the principles learned in the intervention, and ultimately feel discouraged when they apply the lessons learned and they don't work. Because greater marital conflict may detract from husbands' and wives' sexual satisfaction, assessing conflict levels within the marriage and teaching participants how to address them will be vitally important to the intervention's success.

The present study leaves us with more questions concerning how conflict influences sexual satisfaction. Would similar results be found in newly formed marriages? Is conflict frequency, constructive conflict resolution style, or destructive conflict resolution style more predictive of sexual and marital satisfaction? Is sex more satisfying after a heated disagreement? Future studies should address these questions so that a clearer picture of the relationship between conflict and marital and sexual satisfaction can be drawn.

As the marriages themselves, associations among marital satisfaction, sexual satisfaction, and conflict frequency change over time. Individuals should not assume that the ways that different aspects of their marriages influence each other will be the same the longer their marriages last. Rather, they should be aware that as their marriages endure, different aspects of their marriages will benefit or detract from their marital satisfaction depending on when they evaluate it.

Table 1

Means and Standard Deviations for Study Variables (N=1,324)

Variable	Men (n= 549)		Women (n= 775)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1. Marital Satisfaction 1980	2.59	.42	2.52	.46
2. Marital Satisfaction 1983	2.53	.45	2.50	.45
3. Marital Satisfaction 1988	2.51	.47	2.48	.46
4. Marital Satisfaction 1992	2.52	.47	2.47	.48
5. Marital Satisfaction 1997	2.71	.47	2.47	.50
6. Marital Satisfaction 2000	2.72	.41	2.58	.52
7. Sexual Satisfaction 1980	2.49	.60	2.56	.57
8. Sexual Satisfaction 1983	2.38	.65	2.49	.59
9. Sexual Satisfaction 1988	2.34	.65	2.42	.61
10. Sexual Satisfaction 1992	2.32	.65	2.39	.62
11. Sexual Satisfaction 1997	2.31	.67	2.36	.63
12. Sexual Satisfaction 2000	2.52	.70	2.47	.67
13. Conflict frequency 1980	2.81	.69	2.86	.66
14. Conflict frequency 1983	2.85	.65	2.86	.64
15. Conflict frequency 1988	2.81	.69	2.91	.67
16. Conflict frequency 1992	2.82	.69	2.89	.63
17. Conflict frequency 1997	2.73	.64	2.83	.68
18. Conflict frequency 2000	2.64	.64	2.70	.68
19. Subjective Health 1980	3.45	.72	3.41	.69
20. Age 1980	36.87	9.57	35.26	9.30
21. Education 1980	14.04	2.77	13.34	2.32

Table 1 (cont.)

Means and Standard Deviations for Study Variables (N= 1,314)

Variable	Men (n= 549)		Women (n= 775)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
22. Number of kids	2.07	1.51	2.13	1.60
23. Years married 1980	14.16	9.49	14.57	9.35
24. Age at marriage	22.71	3.38	20.68	2.32
25. Family Income 1980	\$29,849	\$16,422	\$29,319	\$16,717

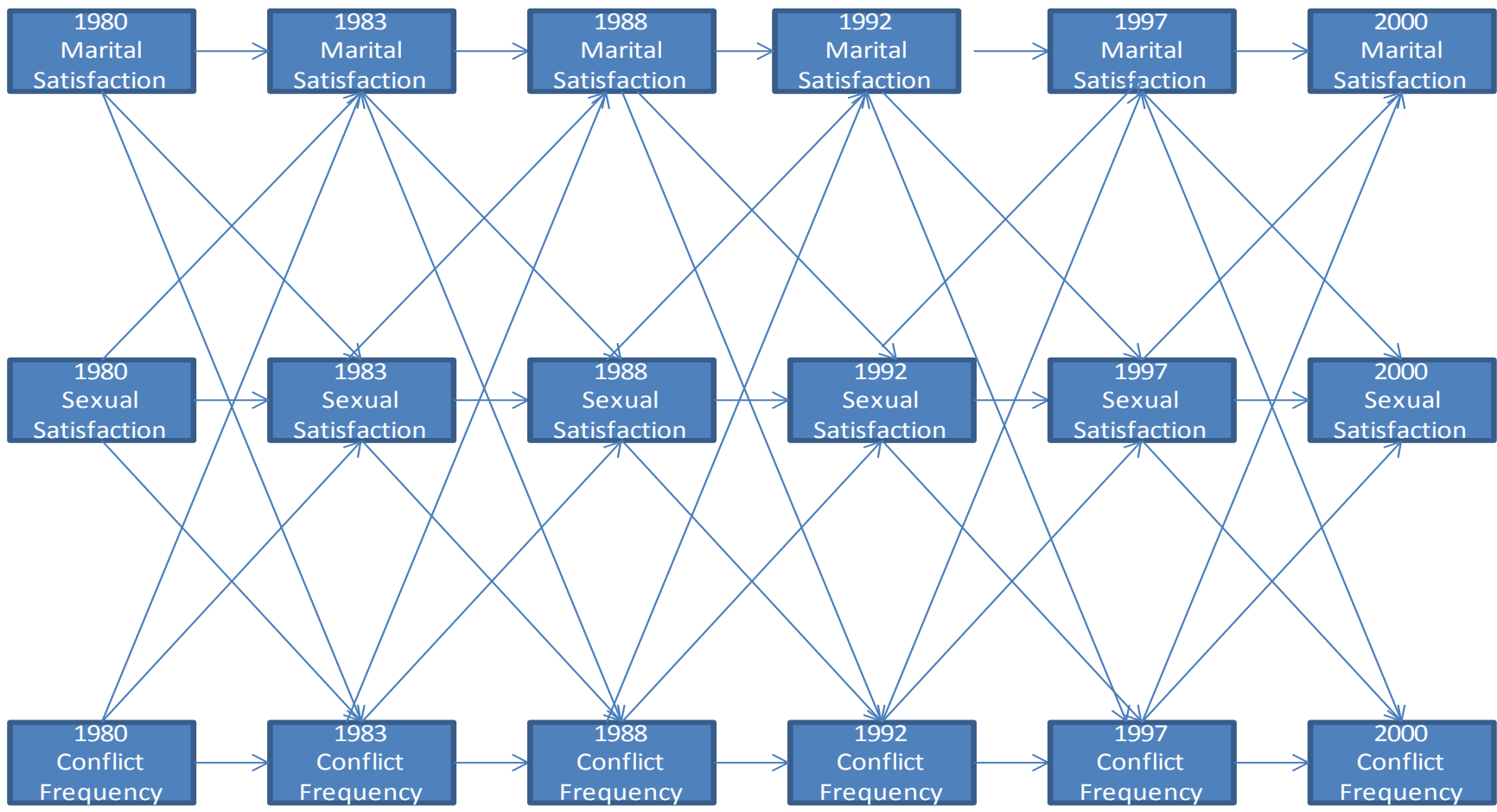


Figure 1. Hypothesized conceptual model.

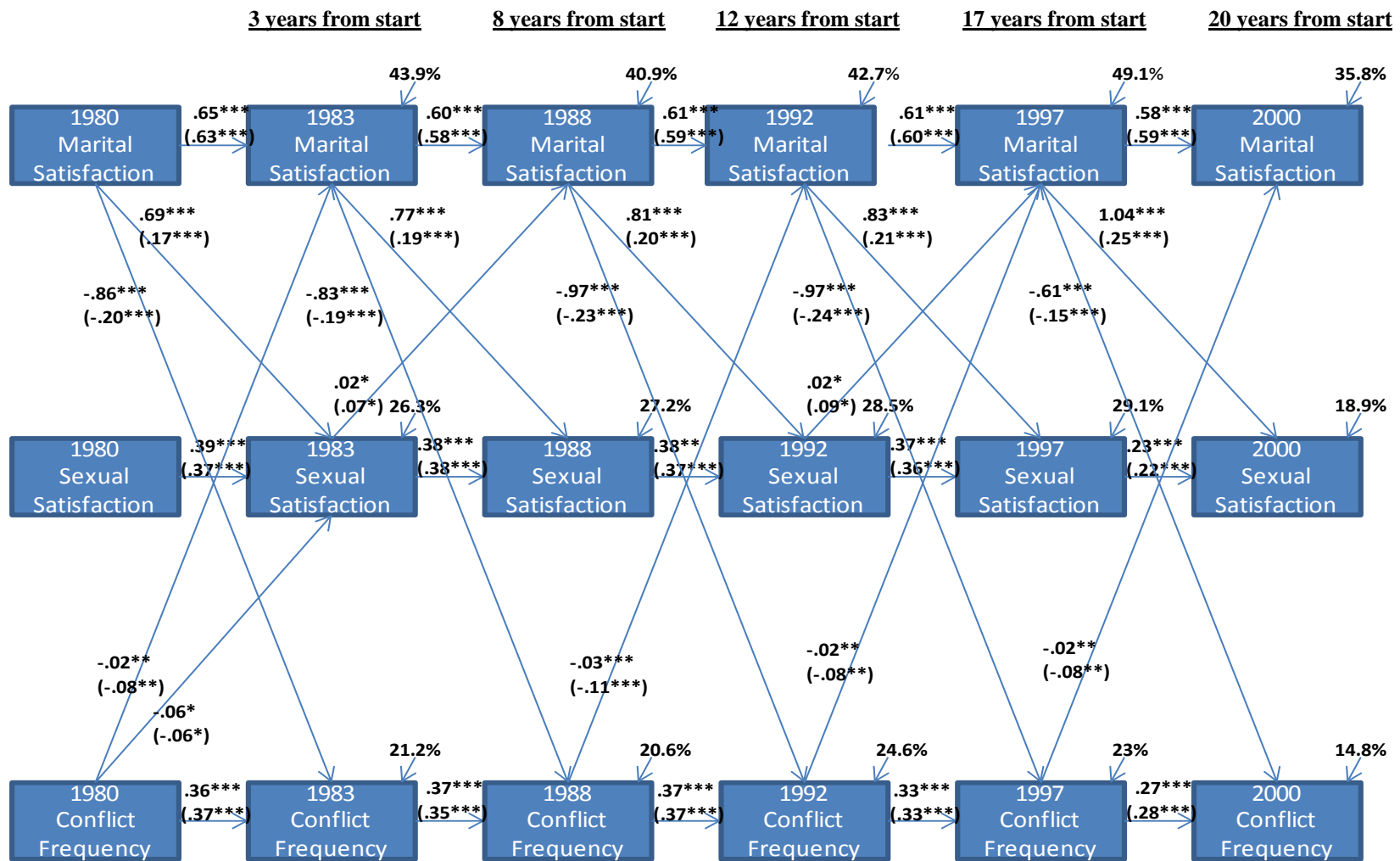


Figure 2. Cross-lagged simplex model representing the longitudinal influence of marital satisfaction, sexual satisfaction, and conflict frequency between 1980-2000, controlling for age in 1980, subjective health, number of children, years married in 1980, and education ($N=1,324$; $\chi^2=909$, $DF=156$, χ^2/DF ratio= 5.8; RMSEA=.06)

Note: * $p < .05$. *** $p < .001$.

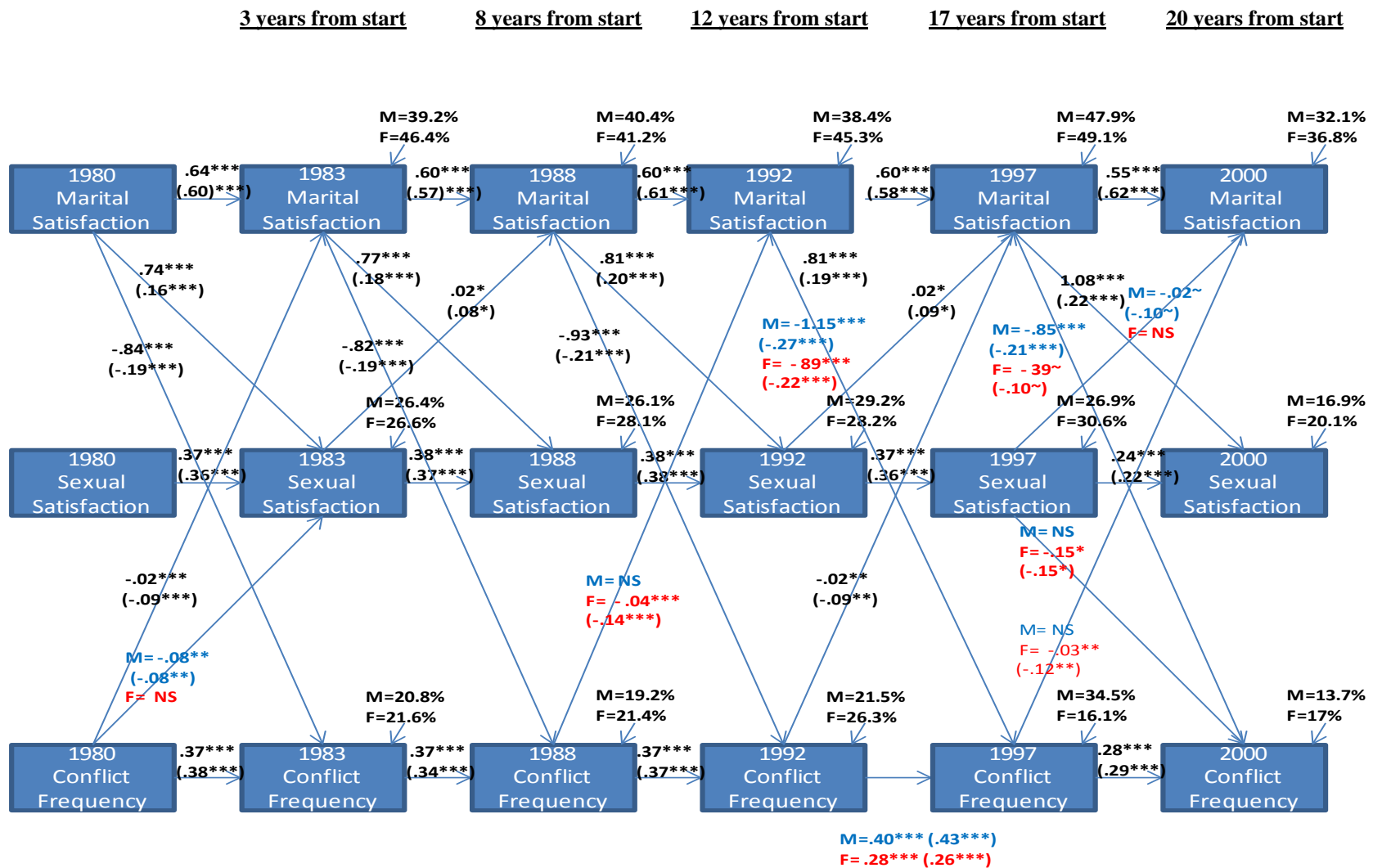


Figure 3. Moderation by sex of cross-lagged simplex model representing the longitudinal influence of marital satisfaction, sexual satisfaction, and conflict frequency between 1980-2000, controlling age in 1980, subjective health, number of children, years married in 1980, and education (Male=549, Female=775; $\chi^2=1155$, $DF=388$, χ^2/DF ratio= 2.9; RMSEA=.06)

Note: ~ $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

III. Study 2: Predicting Divorce Risk by Marital Satisfaction, Sexual Satisfaction, and Conflict Frequency Over 20 Years of Marriage

Abstract

Marital satisfaction, sexual satisfaction, and conflict frequency influence if individuals will experience a divorce, but the longitudinal influences of these rewards and costs of marriage on divorce risk is unknown. The present study examines the 20 year influence of these rewards and costs on divorce risk for individuals who, on average, had been married for 14 years at the beginning of the study. Participants were 1,467 married individuals who were European Americans and in their first marriages. A discrete-time survival analysis was used to determine when, during the 20 year period, individuals are most at risk for divorce, given they had not experienced it prior to that time, and how marital and sexual satisfaction and conflict frequency influence divorce risk. Divorce risk is highest between 1983 and 1988, approximately 17 to 22 years after marriage, and both rewards and costs of marriage influence that risk. Implications for researchers and practitioners are discussed.

Predicting Longitudinal Divorce Risk by Marital Satisfaction, Sexual Satisfaction, and Conflict Frequency over 20 Years of Marriage

The dissolution of marriages typically has negative effects on individuals. The negative effects of divorce have received ample scholarly attention, possibly due to the negative effects that a divorce can have on the ex-spouses' and their children's mental, physical, and emotional well-being (Amato, 2000, 2010; Cherlin, Chase-Lansdale, & McRae, 1998). Since a considerable number of individuals will experience at least one divorce within their lifetimes (Bramlett & Mosher, 2001), continued examination of the relational contributors to this phenomenon is necessary, especially for individuals who are in established marriages in middle adulthood (Brown & Lin, 2012).

A recent study indicates that the divorce rate for individuals over the age of 50 has doubled in recent decades (Brown & Lin, 2012) even though the divorce rate in the United States has generally leveled off since the 1990's (Amato, 2010). Most of the research to date that has examined the predictors of divorce risk have examined them in populations of individuals who had not yet reached middle adulthood (DeMaris, 2000; Dzara, 2010; Kalil, Ziol-Guest, & Epstein, 2010). Therefore, the predictors of divorce for individuals in middle adulthood are not well known.

How relational constructs such as marital satisfaction, sexual satisfaction, and conflict frequency differentially influence divorce risk over time has also not been widely studied. Most studies that have examined these phenomena in relation to divorce have examined whether these relational aspects influence if divorce occurs rather than how these relational aspects predict the risk for divorce over time. Are individuals who are not sexually satisfied or not satisfied with their marriages and/or experience a high level of conflict within their marriages at a lower risk

for divorce earlier or later in their marriages, or is the influence of these constructs on divorce risk the same over time? The present study seeks to answer these questions in a population of middle-aged individuals. The social exchange theory will provide the lens through which these factors will be examined in determining individuals' divorce risk.

Social Exchange Theory

The goal of most individuals in intimate relationships is to maximize relational rewards and minimize relational costs (Byers & Wang, 2004). Rewards are aspects of relationships that are experienced as gratifying whereas relational costs are aspects of relationships that are not pleasurable (Byers & Wang, 2004; Rusbult, 1983). In the present study, high marital and sexual satisfaction and low conflict frequency will be considered relational rewards whereas low marital and sexual satisfaction and high conflict frequency will be considered relational costs.

According to social exchange theory, divorce is more likely if individuals have experienced low relational rewards and high relational costs (Impett, Beals, & Peplau, 2002; Rusbult, 1983; Rusbult et al., 1986). Divorce risk will be low when individuals are satisfied with their marriages, have satisfying sex, and have few marital conflicts. Conversely, greater risk for divorce exists when individuals have low marital and sexual satisfaction and high levels of conflict. It is possible that the perception of the rewards and costs within a relationship can change over time. If so, then the influence of each reward and cost on individuals' divorce risk may also vary over time. The present study will determine the influence of each reward (greater marital and sexual satisfaction and lower conflict frequency) and cost (lower marital and sexual satisfaction and greater conflict frequency) on divorce risk over a twenty year period as well as whether that influence varies across that time period (e.g., sexual satisfaction influences divorce risk more in the early years than the later years of marriage).

The overall evaluations of marriages and the evaluations of specific components of marriages influence whether individuals will decide to remain married or divorce (Broman, 2002; Rodrigues et al., 2006; Rosand, Slinning, Roysamb, & Tambs, 2014). Sexual satisfaction is one important component of marriages; when sex is not enjoyable, individuals may seek to end marriages in hopes of attaining sexual compatibility with other partners (Dzara, 2010). Once an uncomfortable level of conflict is reached, individuals may seek divorces in order find mates with whom they can have more harmonious interactions (Heaton & Blake, 1999).

Many researchers have studied divorce trends over the last several decades. In general, divorce rates in the United States are no longer increasing but have leveled off (Amato, 2010; Teachman, 2010). However, for individuals over the age of 50, divorce rates have recently doubled (Brown & Lin, 2012). Although an interest continues to exist in the demographic, intrapersonal, and relational influences on divorce's likelihood, one important next step is to determine how relational factors such as marital satisfaction, sexual satisfaction, and conflict frequency influence the risk for divorce over time (Amato, 2010; Kalil et al., 2010).

Marital Satisfaction and Divorce

One of the most consistent predictors of whether marriages will end is individuals' levels of marital satisfaction (Karney & Bradbury, 1995). Several studies have found that when individuals are satisfied with their marriages, divorce is less likely to occur (Broman, 2002; Gager & Sanchez, 2003; Rodrigues et al., 2006; Rosand et al., 2014). Interestingly though, marital satisfaction may not always be the best predictor of whether or not a divorce will occur because some who are unsatisfied with their marriages will remain married despite being unhappy (Broman, 2002; Gager & Sanchez, 2003; Huston et al., 2001). For example, Broman

(2002) found that although individuals who are not satisfied with their marriages are almost twice as likely to actually divorce, most unsatisfied married individuals remain married.

The association between marital satisfaction and divorce risk may be moderated by sex. One study found that husbands' reports of marital dissatisfaction are more closely related to divorce than wives reports of dissatisfaction but, when wives are more unhappy than their husbands, stability rates are similar to marriages in which both spouses are satisfied (Gager & Sanchez, 2003). Conversely, Rosand and colleagues (2014) found that dissatisfaction with marriages is a stronger predictor of marital dissolution for women than men. This inconsistency may be related to the different sampling procedures that are employed in these studies. Unlike Gager and Sanchez (2003), Rosand and colleagues (2014) sampled women during the post-partum period after childbirth, which may have had a significant influence on the findings. When women have recently delivered children, the transition of adding additional members to the family creates a unique stress that likely influences their evaluation of their relationships and the decision to divorce.

As previously mentioned, marital satisfaction may not always be the best indicator of divorce risk, but other factors that have been associated with marital satisfaction may influence divorce risk over time. Sexual satisfaction and conflict frequency are two relational factors that are consistently associated with marital satisfaction (Edwards & Booth 1994; Kluwer & Johnson, 2007; Litzinger & Gordon, 2005; Oggins, Leber, & Veroff, 1993). However, the longitudinal influence that these constructs exert on marital dissolution has received less empirical attention. Do sexual satisfaction and conflict frequency influence when individuals will divorce? The empirical evidence to date says that this is a possibility.

Sexual Satisfaction and Divorce

When expectations for satisfying sex are not met within marriages, individuals may want to end their marriages in search of satisfying sex (Dzara, 2010; Schwartz & Young, 2009). Sexual satisfaction is negatively associated with thoughts of divorce (Yeh et al., 2006) and multiple investigations have found that low sexual satisfaction is associated with marital dissolution (Dzara, 2010; Edwards & Booth, 1994; Yabiku & Gager, 2009). It is possible that the influence of sexual satisfaction on marital dissolution is different in the earlier versus the middle or later years in individuals' marriages (Byers, 1999); however, the aforementioned studies provide little clarification on whether the influence of sexual satisfaction on divorce risk is constant or changes over the course of individuals' marriages. Considering that sexual functioning changes over time as people age and this influences changes in sexual satisfaction (Laumann et al., 2006), it is quite possible that the influence that sexual satisfaction has on divorce risk changes as well.

Clear evidence does not exist for whether the association between sexual satisfaction and divorce is the same or different for men and women. According to some research, sexual satisfaction is a stronger indicator of marital dissolution for men (Dzara, 2010; Oggins et al., 1993; Sprecher, 2002). However, it is also possible that the relationship between sexual satisfaction and divorce is essentially the same for men and women (Yeh et al., 2006). The study that found men's sexual satisfaction is predictive of divorce examined couples during the newlywed period of their marriages up to five years after getting married (Dzara, 2010). Yeh and colleagues (2006), on the other hand, examined couples who had been married for a few decades. Thus, as marriages mature, it is possible that sex differences in how sexual satisfaction predicts divorce risk diminishes. We must further examine these potential sex differences to determine if and how they influence marital dissolution.

Conflict Frequency and Divorce

Although individuals may not experience high levels of conflict prior to divorce, some research suggests that conflict is associated with increased divorce risk (Amato, 2010). The way individuals resolve conflict is predictive of whether or not divorce will eventually occur (Birditt et al., 2010; Gottman & Levenson, 2000). However, specific conflict resolution styles may not have to be employed often if individuals have few explicit conflicts within their marriages. This begs the question of whether the frequency of conflict has an effect on whether or not individuals will divorce. This question has received considerably less attention than the influence of conflict resolution style in previous research.

The research findings in this area are not straightforward. Some studies have found that frequent arguing is associated with divorce (Hatch & Bulcroft, 2004; Heaton & Blake, 1999), whereas another found that conflict frequency is not related to marital disruption (DeMaris, 2000). These differences may exist because although the same data were used for two of the studies, one study examined couples married approximately 16 years (Heaton & Blake, 1999), whereas another examined couples married approximately 7 years (DeMaris, 2000). Thus, it is possible that the influence of conflict frequency on divorce risk increases over time, but this too must be tested.

Additionally, a sex difference may exist for the association between conflict frequency and divorce risk, but these research findings are also unclear. For example, conflict frequency in one study is associated with increased risk of divorce only for husbands (Sanchez & Gager, 2000), but in another study is related to marital dissolution only for wives (Orbuch, Veroff, Hassan, & Horrocks 2002). The way that conflict frequency was measured may have influenced these differences. Sanchez and Gager (2000) asked participants to total the number of

disagreements in three specific areas (household tasks, money and time spent together), whereas Orbuch and colleagues (2002) asked participants about the amount of upsetting disagreements had in the last month. In the latter, participants had a much broader range of arguments from which to draw. Furthermore, the studies mentioned thus far did not compare how conflict frequency influences divorce risk at more than one point in time. How conflict frequency influences the likelihood of divorce earlier versus later in a marital relationship is unknown.

Timing of Divorce

Before the influences of marital satisfaction, sexual satisfaction, and conflict frequency on divorce risk can be examined, the baseline risk for divorce across the years of marriage must first be established. One study indicates that the risk for divorce peaks at the fourth year of marriage (Goldstein, 1999), although the results from this study must be interpreted with caution due to a high percentage of imputed marital lengths. Another recent study found that marriages last an average of 6 years before ending in divorce (Kalil et al., 2010). Approximately 33% of divorces will occur within the first 10 years of marriage and 43% of marriages will end in divorce within the first 15 years (Bramlett & Mosher, 2001; Teachman 2003). Differences in recruitment and demographics influence these subtle differences in findings; however, these results are only applicable to marriages that are examined from the beginning of marriage through the initial peak of divorce risk. Therefore, these are not applicable to individuals in longer term marriages who have passed the initial peak period of divorce risk. One may assume that the risk for a divorce may be lower in such a population since these marriages have survived past the initial risky years, although to date, this cannot be said with confidence. Furthermore, these studies tell us little about how the risk for divorce changes during the marriage, therefore, assumptions about increases and decreases in individuals' divorce risk over time cannot be made.

The Present Study

The present study seeks to extend previous research on divorce in two ways. First, we will establish when married individuals are most likely to divorce over a 20 year period during the middle to late years of marriage and we will determine how this risk may fluctuate over time. Additionally, we will establish how marital satisfaction, sexual satisfaction and conflict frequency influence the risk for divorce over this period. The following research questions will be answered in the present study, controlling for cohabitation prior to marriage, age at marriage, marital length, educational level, subjective health, and income:

RQ1: What is the risk of divorce for married individuals when they have been married between 13 and 33 years between the years of 1980 and 2000?

RQ2: Is the risk of divorce influenced by marital satisfaction, sexual satisfaction and conflict frequency?

RQ3: Is the influence of marital satisfaction, sexual satisfaction, and conflict frequency on the risk of divorce different over time? For example, might sexual satisfaction have a time varying effect on the risk of divorce?

RQ4: Is the influence of marital satisfaction, sexual satisfaction, and conflict frequency on the risk of divorce the same for men and women?

Method

Data

The *Marital Instability over the Life Course* data (Booth et al., 1980-2000) were accessed from the Interuniversity Consortium for Political and Social Research (ICPSR) website. The data were collected 1980, 1983, 1988, 1992, 1997, and 2000. To be considered for study inclusion, participants had to be United States citizens, married as of 1980, and under the age of 55. All

United States citizens who met these criteria were eligible for participation. The sample was selected through a random digit dialing procedure. Originally, the sample consisted of 2,033 participants. Information about marital status was collected on all participants even if they did not complete the survey at all data collection periods. The sample is reportedly representative of the United States demographics of 1980 in age, race, household size, presence of children, and home ownership. However, the sample includes more female than male participants and is more educated than the 1980 average (Booth et al., 1980-2000). According to the primary investigators, attrition did not highly influence the representativeness of the sample.

Only participants who were European American were retained for the analytic sample since the original sample was overwhelmingly European American ($n = 1,789$). Additionally, since we are examining time to first divorce, those who have been married more than once ($n=225$) or who had been widowed ($n= 97$) were omitted from the sample. See Amato and colleagues (2003) for more information about data collection procedures.

Participants

The participants for the present study were 1,467 men and women who participated in the *Marital Instability over the Life Course* study (Booth et al., 1980-2000). This analytic sample is comprised of 42% male participants ($n=611$) and 58% female participants ($n=856$). In 1980, all participants were married and under the age of 55. The mean age of participants in 1980 was 35.7 ($SD=9.1$). Participants had been married for an average of 12.9 ($SD=9.5$) years in 1980 and had approximately 14.2 ($SD=2.6$) years of education in 1980, which indicates that most participants had slightly above a high school diploma. In 1980, participants had approximately 2 children ($SD= 1.4$). All participants were in their first marriages. Separate demographic information for men and women is presented in Table 1.

Measures

Divorce. To assess whether or not individuals divorced over the course of data collection, marital status was assessed at every time point except the first one with the question “Have you divorced since we interviewed you in the previous assessment?” A value of 1 was assigned when participants experienced a divorce, and a 0 was assigned when participants did not experience a divorce.

Marital satisfaction. The original marital satisfaction scale included 11 items, but some were deleted after conducting principal components analyses (PCA), following the suggestions presented in previous studies (Bradbury et al., 2000; Whisman, 1997). Marital satisfaction was assessed with the following five statements at each of the 6 data collection points: “How happy are you with the amount of understanding you receive from your spouse?,” “How happy are you with the amount of love and affection you receive from your spouse?,” “How happy are you with your spouse as someone to do things with?,” “How happy are you with the extent to which you and your partner agree about things?,” and “Taking all things together, how would you describe your marriage? A 3-point Likert scale was used to code responses from 1 (*very happy*) to 3 (*not too happy*). In the original scale, a score of 1 equaled “very happy” and 3 equaled “not too happy,” Thus, the items were reverse scored. Cronbach’s alpha for this measure ranged from .79-.88 and .83-.89 .for men and women, respectively, across all time points.

Sexual satisfaction. Many measures of sexual satisfaction ask about sexual frequency, orgasm frequency, and others that do not measure sexual satisfaction, therefore a single item measure was chosen for the present study (Byers, 1999; Robins et al., 2001). Originally, the sexual satisfaction question was a component of the marital satisfaction measure, but due to evidence that suggests that marital and sexual satisfaction are two separate domains (Mark &

Jozkowski, 2013), the sexual satisfaction question was measured with a single item. Participants were asked the following global question at all 6 time points: “How happy are you with your sexual relationship?” Responses were coded on a 3-point Likert scale from 1 (*very happy*) to 3 (*not too happy*). Responses were reverse coded so that higher scores were indicative of higher sexual satisfaction.

Conflict frequency. One global question was used to assess conflict frequency at all 6 time points, “How often do you disagree with your husband/wife?” Responses were coded on a 5- point Likert scale from 1 (*never*) to 5 (*very often*). A single item was chosen to measure conflict frequency because of findings that suggest that single item measures are better than multiple item measures because they reduce response fatigue and the measurement properties are similar to multi-item scales (Robins et al., 2001). Additionally, a global conflict frequency question will allow participants to reflect upon all conflicts they have experienced as opposed to limiting their responses to specific conflict areas.

Control variables. It is impossible to control for all variables that may influence people’s risk for divorce. However, several variables that have been shown to have an influence on divorce, marital satisfaction, sexual satisfaction, and/or conflict frequency will be entered sequentially into the baseline survival models and retained if they are significant. Studies have indicated that cohabitation prior to marriage (Heaton, 2002; Teachman, 2003), age at marriage (Amato & DeBoer, 2001; Goldstein, 1999), marital length (Heaton, 2002), education (Dzara, 2010; South & Spitz, 1986), subjective health (Amato, 2010), and income (Birditt et al., 2010) are related to individuals’ risk for divorce and/or perceptions of sexual satisfaction and conflict frequency. *Age at marriage* was assessed by asking participants their ages at the beginning of their marriage. *Marital length* was assessed by subtracting participants’ age at marriage from

their age in 1980. *Subjective health* was measured with the question “In general, would you say your own health is excellent, good, fair, or poor?” A 4-point Likert scale was used to code responses from 1 (*poor*) to 4 (*excellent*). *Education* was measured with the question, “How many years of school have you completed?” *Cohabitation prior to marriage* was measured by asking respondents whether they had lived with their spouses prior to marriage; yes responses were coded with a 1 and no responses were coded with a 0. Lastly, *income* was measured by asking participants their total household income in 1979.

Analytic plan. When examining the risk of divorce, quite often inappropriate methods are used (multiple regression, analysis of variance, structural equation modeling) rather than methods best suited for the study of risk (Cox proportional hazards models, discrete time hazard models) (DeMaris 2000; Dzara, 2010; Gager & Sanchez, 2002; Orbuch et al., 2002). Using regression or other similar methods only allows for the assessment of whether or not divorce occurs over a period of time but not assess when individuals or couples are at the greatest risk to experience a divorce. Therefore, the use of a discrete-time hazard model (Singer & Willett, 2003) will be useful in predicting when individuals are most at risk for divorce and what predicts that risk.

Discrete time survival analysis was used to assess the risk of divorce over the 20 year time span (RQ1). The influence that conflict frequency, sexual satisfaction, and marital satisfaction, all measured at the beginning of the study in 1980, have on the risk of divorce over this time span was tested using delta chi-square tests (RQ2) (Keiley, Kirkland, Zaremba, & Jackson, 2012; Singer & Willett, 2003). We then tested if any of these predictors interact with time in the prediction of divorce risk across the 20 years; that is, is the effect of any of the predictors on the profile of risk different at different times in the marriage (RQ3). Finally, the

moderation of this conditional profile of risk by the sex of the participants was tested to determine whether effects of conflict frequency, sexual satisfaction, and marital satisfaction in 1980 on the risk of divorce are different for men and women (RQ4).

Results

As shown in Table 1, means for marital and sexual satisfaction are on the higher end of the 3-point scale, and the means for conflict frequency are around the middle of the 5-point scale. Pearson's correlations for women and men are mostly in the expected directions (correlation table available from author by request). For women, high marital and sexual satisfaction at one time point are negatively associated with divorce at the next time point and high conflict frequency at one time point is positively associated with divorce at each subsequent time point. Men's marital satisfaction is negatively associated with divorce at every time point except for between 1997 and 2000, when individuals had been married between 30 and 33 years. Sexual satisfaction for men is negatively associated with divorce at every time point except for between 1980 and 1983 when individuals had been married between 13 and 16 years and between 1997 and 2000 when they had been married between 30 and 33 years. Men's conflict frequency is positively associated with divorce between 1983 and 1988 and between 1988 and 1992 when they had been married between 21 and 25 years, and negatively associated with divorce between 1997 and 2000. According to self reports, 201 of the 1,467 participants experienced a divorce over the course of the study (120 women and 81 men; see Table 2). A graphical depiction of the life table is presented in Figure 1.

To examine the timing of first divorce, a series of nested discrete-time survival models were fit to the data. The unconditional baseline model illustrates the estimated conditional probabilities of divorce before predictors were added to the model (see Figure 1). Figure 1 represents the hazard function (see Table 2) and indicates the conditional probability of first

divorce during each time period, given that it had not occurred prior to that period. From this figure, we can see that the risk of divorce sharply increases between 1980 and 1983 when individuals had been married between 13 and 16 years, then, slowly peaks in 1988 when individuals had been married approximately 21 years. The risk for first divorce gradually decreases after that until 1997 when individuals had been married an average of 30 years, then, it falls sharply almost back to zero in 2000 when individuals had been married around 33 years.

The conditional probabilities for divorce are relatively low. At its height, the conditional risk of divorce is 3.9 % between 1983 and 1988, given that divorce had not occurred prior to that time meaning that the risk for divorce is highest when individuals had been married between 16 and 21 years. At its lowest, the conditional risk for divorce is 0.1% between 1997 and 2000 when individuals had been married between 30 and 33 years, given that it had not occurred prior to that time. Overall, 13.7% of participants experienced a first divorce over the course of the study (see Table 2). Figure 2 represents the survival function plotted across the 20 years of the study for the participants (also represented in Table 2). As shown in Figure 2, approximately 96.1% of the sample's marriages survive in 1983 and this percentage gradually declines to 86.3% in 2000. Thus, by the end of the study, 86.3% of participants have not experienced a divorce.

Fitted conditional discrete-time survival models tested the effects of predictors on time to first divorce. The predictors were entered in the following order: control variables all measured in 1980 at the start of the study (subjective health, years of education, premarital cohabiting status, marital length, age at marriage, and family income), then our major question predictors were added one at a time (conflict frequency, sexual satisfaction, and marital satisfaction all from 1980). As shown in Table 3, only the control variables age at marriage, number of children, and whether or not people cohabited before marriage are significant and therefore retained. More

importantly, conflict frequency, sexual satisfaction, and marital satisfaction reported in 1980 predict time to first divorce. Having greater conflict frequency, lower sexual satisfaction, and lower marital satisfaction are all associated with the risk for divorce. Younger age at first marriage, having fewer children, and having lived together prior to marriage are associated with a greater risk for divorce.

Conflict frequency, sexual satisfaction, and marital satisfaction do not interact with time to predict divorce ($\Delta\chi^2_{\text{Conflict*Time}} = 3.66, \Delta DF = 4, p < .05$; $\Delta\chi^2_{\text{SexSat*Time}} = 4.18, \Delta DF = 4, p < .05$; $\Delta\chi^2_{\text{MarSat*Time}} = 5.02, \Delta DF = 4, p < .05$). In other words, the effect of the relational predictors on divorce risk did not vary with time. We also tested whether or not the effects of the predictors of time to first divorce are moderated by sex, but no sex differences were found ($\Delta\chi^2_{\text{Conflict*Sex}} = 1.56, \Delta DF = 2, p < .05$; $\Delta\chi^2_{\text{SexSat*Sex}} = .44, \Delta DF = 2, p < .05$; $\Delta\chi^2_{\text{MarSat*Sex}} = .78, \Delta DF = 2, p < .05$).

The best way to interpret the results of a fitted model is to present the plots of the predicted values for the fitted hazard functions for prototypical adults. To answer our question of whether conflict frequency, sexual satisfaction, and marital satisfaction influence when people will divorce, we created three fitted hazard plots, one for each question predictor from the final fitted model (Model 5, Table 3), controlling for the effects of the other predictors. Each plot was created by taking values that were one standard deviation above (high value) and below (low value) the mean for one of the predictors of interest (e.g., conflict frequency, sexual satisfaction, and marital satisfaction), holding the other two predictors at their means, holding the control variables (age at marriage, number of children, and premarital cohabiting status) at their means, and calculating the predicted values of the logit hazard function.

We then plotted each of these fitted hazard functions. Figure 3 represents the fitted hazard function, the conditional risk of divorce, for different levels of conflict frequency,

controlling for sexual and marital satisfaction, plus control variables. Figure 4 represents the fitted hazard function, the conditional risk of divorce, for different levels of sexual satisfaction, controlling for conflict frequency and marital satisfaction, plus the control variables. Figure 5 represents the fitted hazard function, the conditional risk of divorce, for different levels of marital satisfaction, controlling for sexual satisfaction and conflict frequency, plus the control variables. In each figure, the prototypical conditional hazard functions at high and low levels of each relational aspect have the same shape but are shifted upwards or downwards depending on the values that were entered into the equation. If the effects of the relationship predictors on the risk of divorce had a time-varying quality (RQ3), the shape of these conditional hazard functions would be different at the high and low values of the relational predictor. But, no time-varying quality was present.

As the plots indicate, the risk for divorce is relatively stable from 1983-1997 when individuals had been married between 16 and 30 years, and then sharply decreases in the year 2000 when they had been married roughly 33 years. Because the risk of divorce is not dependent on any time-varying quality of each of our predictors (conflict frequency, sexual satisfaction, or marital satisfaction), the profiles of risk in each domain only differ by the level of the major predictor in each plot. In Figure 3, at high levels of conflict frequency across time, the conditional risk is always greater than for low levels of conflict. The case is similar for both marital and sexual satisfaction (see Figures 4 and 5). So, the risk for divorce as predicted by high conflict frequency and low marital and sexual satisfaction slightly increases when individuals had been married between 16 and 21 years, then slowly decreases when individuals had been married roughly 21 to 25 years, and finally, sharply decreases when individuals had been

married approximately 30 to 33 years(see Figure 3). The patterns for lower conflict frequency and high sexual and marital satisfaction are the same but shifted downwards.

Discussion

We investigated the influence of conflict frequency, sexual satisfaction, and marital satisfaction on timing of first divorce, and tested sex differences in their prediction of divorce. Consistent with previous research (Heaton & Blake, 1999; Oggins et al., 1993; Sanchez & Gager, 2000; Yabiku & Gager, 2009), conflict frequency, sexual satisfaction, and marital satisfaction predict divorce. Sex differences in how marital satisfaction, sexual satisfaction, and conflict frequency influence divorce risk do not exist. In addition, the effects of all three major predictors do not have differential time varying influences.

Controlling for sexual and marital satisfaction, individuals who argue more frequently with their spouses have a greater likelihood for divorce than individuals who argue less frequently. This finding is consistent with previous studies that have found a greater number of arguments to be associated with increased divorce risk (Heaton & Blake, 1999; Sanchez & Gager, 2000; Orbuch et al., 2002). Individuals may become preoccupied with solving marital problems to the extent that they can no longer enjoy being with their spouses when frequent disagreements occur. Additionally, frequent arguments may create a negative emotional atmosphere within marriages (Kiecolt-Glaser & Newton, 2001), and individuals may want to end their marriages in hopes of having fewer negative interactions with other partners.

Individuals with low sexual satisfaction are more likely to divorce than those with high sexual satisfaction when controlling for marital satisfaction and conflict frequency. This finding is also consistent with previous studies (Dzara, 2010; Yabiku & Gager, 2009). Considering the significance that sexual gratification adds to individuals' quality of life (Haavio-Mannila & Kontula, 1997), they may want to end their marriages and seek out other relationships where this

component of the quality of life can be fulfilled. Since being sexually satisfied is an expectation for most married individuals (Schwartz & Young, 2009), they may want to divorce when their experiences do not match their expectations.

Low marital satisfaction is associated with greater likelihood of divorce, whereas greater marital satisfaction is associated with a lower likelihood of divorce. This finding supports previous studies (Gager & Sanchez, 2003; Rodrigues et al., 2006). Although individuals with low marital satisfaction are more likely to experience a divorce, individuals typically will remain married, which is also consistent with previous findings (Broman, 2002; Huston et al., 2001). Although the risk of marital dissolution based on 1980 reports of marital satisfaction is the greatest in 1983 when the average person, had been married 16 years, only about 5% of individuals with low marital satisfaction experienced a divorce in 1983 compared to 1.6% of individuals with high marital satisfaction.

This study supports the argument that as marriages endure, they become more stable (Karney & Bradbury, 1995). They may endure, but perhaps not because satisfaction is high or conflict is low. The longer marriages last, individuals may become habituated to marriages that add relatively little satisfaction to their lives (Levenson, Carstensen, & Gottman, 1994). In this case, individuals may decide to remain married despite the lack of marital fulfillment.

Although found in previous studies (Dzara, 2010; Gager & Sanchez, 2003), sex differences in how relational constructs influence the risk for divorce are not present in the current study. Marital satisfaction, sexual satisfaction, and conflict frequency predict divorce risk equally for men and women. Men and women have similar marital frustrations that could lead them to want a divorce. Thus, more overlap than discrepancy may exist between men's and women's reasons for wanting a divorce, especially in long term marriages. This finding lends

support to the argument that sex differences in relational research may be largely overstated (Karney & Bradbury, 1995).

Compared to studies that have examined divorce risk during the early years of marriage (Kalil et al., 2010; Teachman, 2003), this one highlights the fact that divorce risk for middle-aged individuals in middle years of marriage is consistently lower over time. When individuals have been married between 30 and 33 years, they are roughly 53 to 56 years old. This study highlights that although the divorce rate for individuals over 50 has doubled in recent years (Brown & Lin, 2012), the divorce risk for individuals in their fifties and beyond is comparatively lower than for younger individuals.

The reasons that divorce occurs may be different for those in shorter versus longer term marriages. Individuals who divorce in the earlier years of marriage may become unsatisfied with their relationships soon after entering them and may then decide to end their unions early (Huston et al., 2001). Conversely, individuals who divorce later on in their marriages may have frustrations that have built over several years and finally decide that they cannot endure their relationships any longer (Huston et al., 2001). Since, on average, men and women had been married approximately 13 years at the beginning of the study, the latter scenario is more likely.

The findings from this study support social exchange theory to some extent. Social exchange theory posits that individuals are more likely to divorce when relational rewards are low and relational costs are high (Impett et al., 2002; Rusbult et al., 1986). Across the entire 20 years, low marital and sexual satisfaction and higher conflict frequency (which were considered costs), are associated with increased divorce risk, while higher marital and sexual satisfaction and low conflict frequency (which were considered rewards) predict lower risk for divorce.

It is also possible that other rewards and costs may be in operation that lead individuals to remain married despite having low marital and sexual satisfaction and high conflict frequency. Maintaining a stable family life with children, comfortable routines that have been established over years, and companionship may make the idea of an alternative life alone or with another spouse seem less attractive (Heaton & Albrecht, 1991). Additionally, thoughts of dividing assets, spitting up a family, and the process of actually going through with a divorce may be overwhelming and serve as barriers to divorce, especially in long-term marriages; at later ages, compared to younger ones, divorce may feel as if it more trouble than it is worth.

In summary, the present study shows that marital satisfaction, sexual satisfaction, and conflict frequency are indeed predictive of divorce and similarly predictive for both for men and women. However, the influence that these constructs exert on divorce diminishes the longer marriages last. Consequently, divorce risk as predicted by marital and sexual satisfaction and conflict frequency depends on when in marriage they are examined.

Strengths

We were able to assess divorce risk over 20 years during the middle and late years of marriage. Most other studies that have examined divorce have only examined if a divorce occurs over a certain period of time. Additionally, we were able to determine when, during this period, individuals are most at risk for divorce and how this risk does not fluctuate over time. This study suggests that critical periods for divorce exist for individuals who have been married for several years.

We were also able to examine what may influence divorce risk as individuals are entering the later years of their marriages, which few other studies have done. We established that although marital satisfaction, sexual satisfaction, and conflict frequency are important predictors

of divorce, these constructs are more important to the risk of divorce in the earlier years of marriage, rather than the later years. Clearly, we still know little about what predicts divorce later in the life of marriages. Thirty-three percent of first marriages will end in divorce within the first 10 years of marriage and approximately 43% will end within the first 15 years (Bramlett & Mosher, 2001; Teachman 2003).

We also found no sex differences in the prediction of divorce. This is a strength because we can now begin to focus on divorce risk as something that men and women may experience for similar and not necessarily different reasons, particularly in established marriages. This null finding indicates that we might want to shift our focus from searching for ways that marital factors influence divorce differently for men and women to examining the similarity of these variables on the prediction of divorce.

Participants in the present study were relatively highly satisfied with their marriages and with sex, which means that even the individuals who we considered to have low marital or sexual satisfaction experienced average levels each. Despite this, individuals with “low” marital and sexual satisfaction were still two to three times more likely to divorce than individuals with “high” levels of satisfaction. Therefore, the present study highlights that when individuals experience average levels of marital and sexual satisfaction, they are more likely to divorce than individuals who are highly satisfied.

Limitations

The limitations of the present study must also be considered. We were not able to establish if the type of conflict has an influence on divorce risk across time. It is possible that arguments about household labor and child care may differentially predict divorce when compared to arguments about money and leisure activities. Furthermore, we did not assess how

conflict resolution style and conflict frequency differentially influence divorce although at least one study has done so (DeMaris, 2000). Future studies should examine global conflict frequency, content specific conflict frequency, and conflict resolution styles in the same study to establish which has a greater influence on divorce risk. This would inform practitioners so they would know what to focus on during interventions with individuals and couples who are on the brink of divorce.

Another limitation is that the participants were not married to each other. Ideally, both marital partners would have been examined since the constructs of interest are interpersonal in nature. Thus, future studies should make greater efforts to interview both marital partners so that the influence of the interpersonal context on divorce risk can be examined.

Although divorces are less likely to occur in marriages that have lasted for several decades (Goldstein, 1999), it is possible that factors, other than marital and sexual satisfaction and conflict frequency, that influence divorce risk for them are different from those who divorce in shorter term marriages. Future studies should continue to examine the factors that may influence the divorce risk for people in longer marriages, such as differences in shared goals and/or plans for the future, so that differences between those and shorter term marriages can be compared and contrasted.

Previous studies have found that the constructs that predict divorce may be different for people who are of different racial backgrounds (Orbuch et al., 2002). Unfortunately, we were not able to assess racial differences because the analytic sample consisted of only European-Americans. More effort needs to be made to recruit more ethnically diverse samples. Since the face of America is becoming browner and the cultural diversity within this country continues to

expand, it is vital for researchers to examine similarities and differences in divorce risk by ethnicity to inform the practice of interventionists and relationship educators.

Conclusions

Researchers must also be aware that as marriages approach the later years, they become more stable and levels of marital and sexual satisfaction and conflict frequency have some bearing on whether people remain married to their spouses, but less so the longer marriages last. What is remarkable is that out of 1,467 individuals, only 201 were divorced after 20 years. This is not surprising, considering that the present study utilized a sample that was highly satisfied with their marriages. Therefore, the focus should shift away from divorce risk to the constructs that have maintained marriages for extended periods of time. This way researchers, educators, and interventionists will be able to enrich existing marriages and provide a benchmark for other married people to strive towards.

Table 1

Means and Standard Deviations for Study Variables

Variable	Female <i>n</i> = 856		Male <i>n</i> =611	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1. Marital Satisfaction 1980	2.49	.48	2.56	.43
2. Marital Satisfaction 1983	2.47	.47	2.49	.47
3. Marital Satisfaction 1988	2.46	.48	2.48	.48
4. Marital Satisfaction 1992	2.45	.51	2.51	.47
5. Marital Satisfaction 1997	2.48	.51	2.53	.46
6. Marital Satisfaction 2000	2.58	.53	2.72	.41
7. Sexual Satisfaction 1980	2.53	.59	2.48	.61
8. Sexual Satisfaction 1983	2.47	.60	2.34	.66
9. Sexual Satisfaction 1988	2.42	.62	2.32	.64

Table 1 (cont.)

Means and Standard Deviations for Study Variables

Variable	Female <i>n</i> = 856		Male <i>n</i> = 611	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
10. Sexual Satisfaction 1992	2.39	.63	2.31	.64
11. Sexual Satisfaction 1997	2.36	.64	2.33	.67
12. Sexual Satisfaction 2000	2.47	.67	2.52	.71
13. Conflict Frequency 1980	2.88	.67	2.82	.65
14. Conflict Frequency 1983	2.90	.65	2.82	.63
15. Conflict Frequency 1988	2.92	.70	2.83	.64
16. Conflict Frequency 1992	2.90	.67	2.81	.69
17. Conflict Frequency 1997	2.83	.69	2.73	.65
18. Conflict Frequency 2000	2.70	.71	2.65	.68

Table 1 (cont.)

Means and Standard Deviations for Study Variables

Variable	Female <i>n</i> = 856		Male <i>n</i> =611	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
19. Subjective Health	3.42	.68	3.48	.71
1980				
20. Age	34.26	9.16	35.91	9.45
1980				
21. Years of Education	13.33	2.23	14.09	2.74
1980				
22. Number of Children	2.03	1.54	1.96	1.5
1980				
23. Years Married	13.66	9.21	13.26	9.30
1980				
24. Age at Marriage	20.60	2.84	22.64	3.34
25. Family Income	\$29,290	\$16,843	\$29,628	\$16,985
1980				

Table 2

Life Table Describing Time to First Divorce before Adding Predictors

Year	Period	Married @ beginning of period	Divorced during the period	Censored at end of period	Hazard Function	Survivor Function
0	before 80	1467	--	--	--	1.000
1	80-83	1467	57	0	.0389	.9611
2	83-88	1410	55	0	.0390	.9237
3	88-92	1355	41	0	.0303	.8957
4	92-97	1314	38	0	.0289	.8698
5	97-00	1276	10	1266	.0078	.8630

Table 3

Parameter Estimates and Standard Errors in Parentheses from a Fitted Taxonomy of Five Discrete-time Hazard Models Representing the Risk of Divorce in a First Marriage as a Function of Age at First Marriage, Number of Children, Premarital Cohabiting Status, Sexual Satisfaction, Conflict Frequency, and Marital Satisfaction

	Model 1	Model 2	Model 3	Model 4	Model 5
D ₃	-3.21*** (.14)	-1.04~ (.56)	-1.93** (.64)	.03 (.76)	2.59*** (.86)
D ₈	-3.20*** (.14)	-1.03~ (.56)	-1.91** (.64)	.07 (.76)	2.64*** (.87)
D ₁₂	-3.47*** (16)	-1.29** (.57)	-2.17*** (.65)	-.18 (.77)	2.41** (.87)
D ₁₇	-3.51*** (.17)	-1.36** (.57)	-2.24*** (.65)	-.24 (.77)	2.34** (.87)
D ₂₀	-4.84*** (.32)	-2.76*** (.64)	-3.64*** (.71)	-1.65* (.82)	.93 (.92)
Conflict Frequency			.31** (.10)	.18 ~ (.11)	-.12 (.13)
Sexual Satisfaction				-.57*** (.12)	.03 (.15)
Marital Satisfaction					-1.30*** (.21)
Controls					
Age at 1st marriage		-.08*** (.03)	-.08*** (.03)	-.09*** (.03)	-.09*** (.03)
# Children		-.27*** (.06)	-.27*** (.06)	-.29*** (.06)	-.35*** (.06)
Cohabit		.41* (.20)	.38* (.20)	.39* (.20)	.29~ (.20)

Table 3 (cont.)

Parameter Estimates and Standard Errors in Parentheses from a Fitted Taxonomy of Five Discrete-time Hazard Models Representing the Risk of Divorce in a First Marriage as a Function of Age at First Marriage, Number of Children, Premarital Cohabiting Status, Sexual Satisfaction, Conflict Frequency, and Marital Satisfaction

	Model 1	Model 2	Model 3	Model 4	Model 5
-2 Log (df)	1775 (5)	1716 (8)	1708 (9)	1673 (10)	1636 (11)
Δ -2 Log (df)		59*** (3)	8*** (1)	35*** (1)	37*** (1)

*Note: ~p < .10. *p < .05. **p < .01. ***p < .001.*

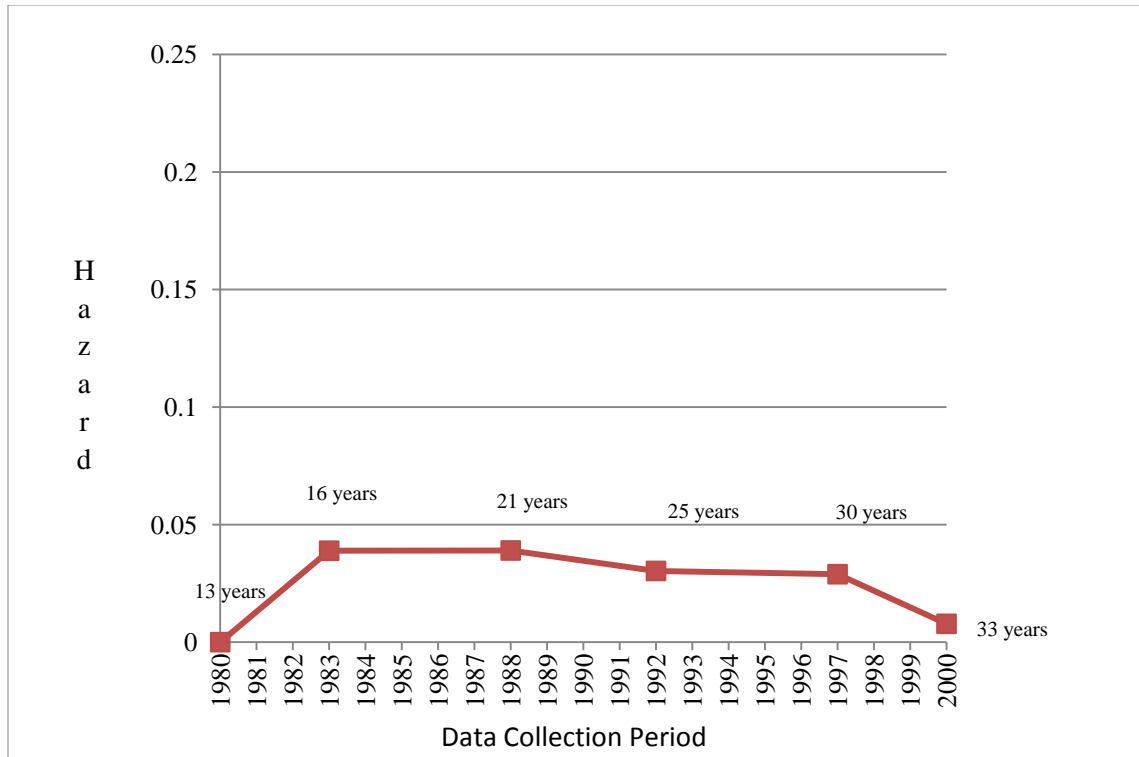


Figure 1. Baseline divorce hazard function before predictors were added to the model. On average, participants were married 13 years at the start of the study.

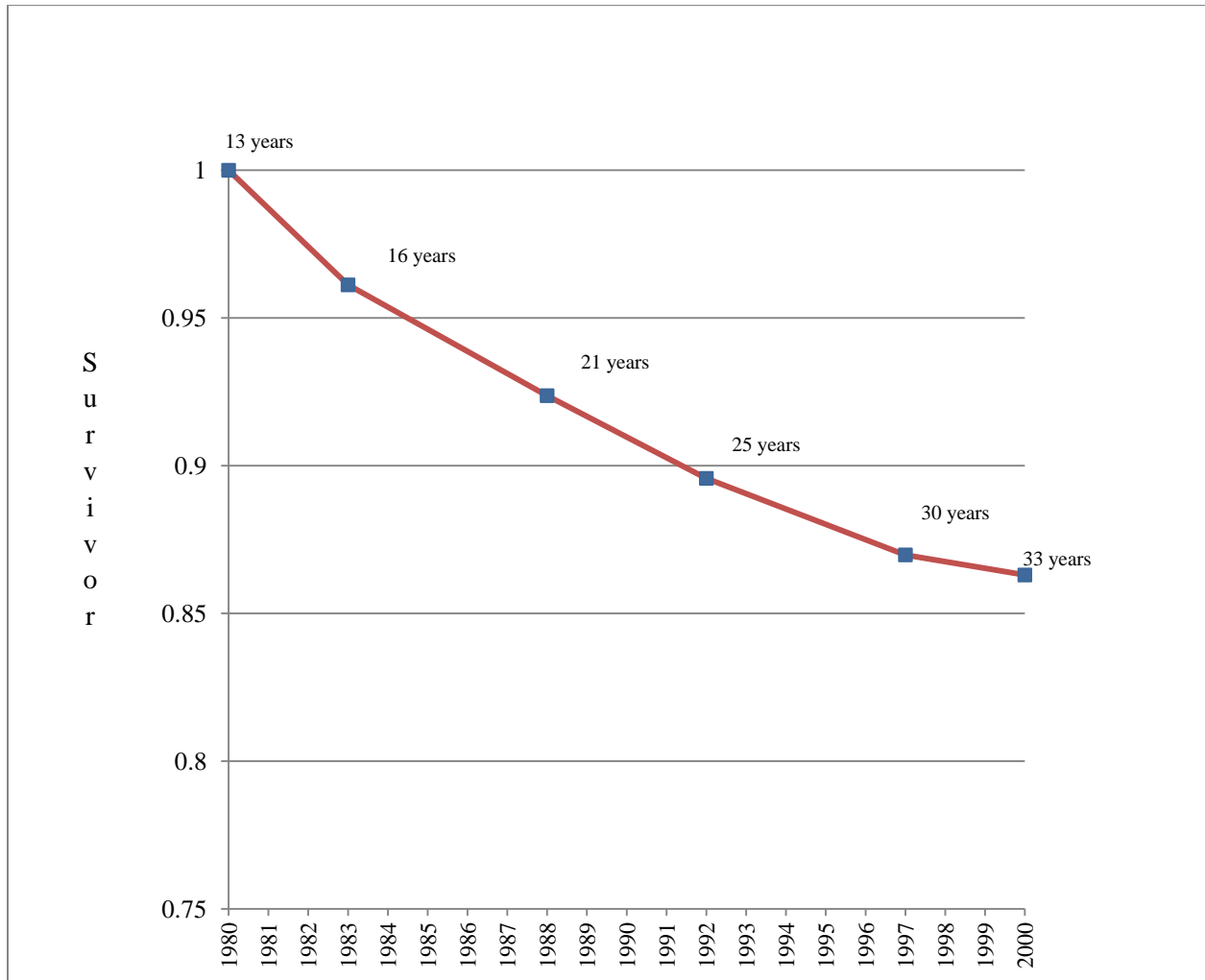


Figure 2. Baseline divorce survivor function before predictors were added to the model. On average, participants were married 13 years at the start of the study.

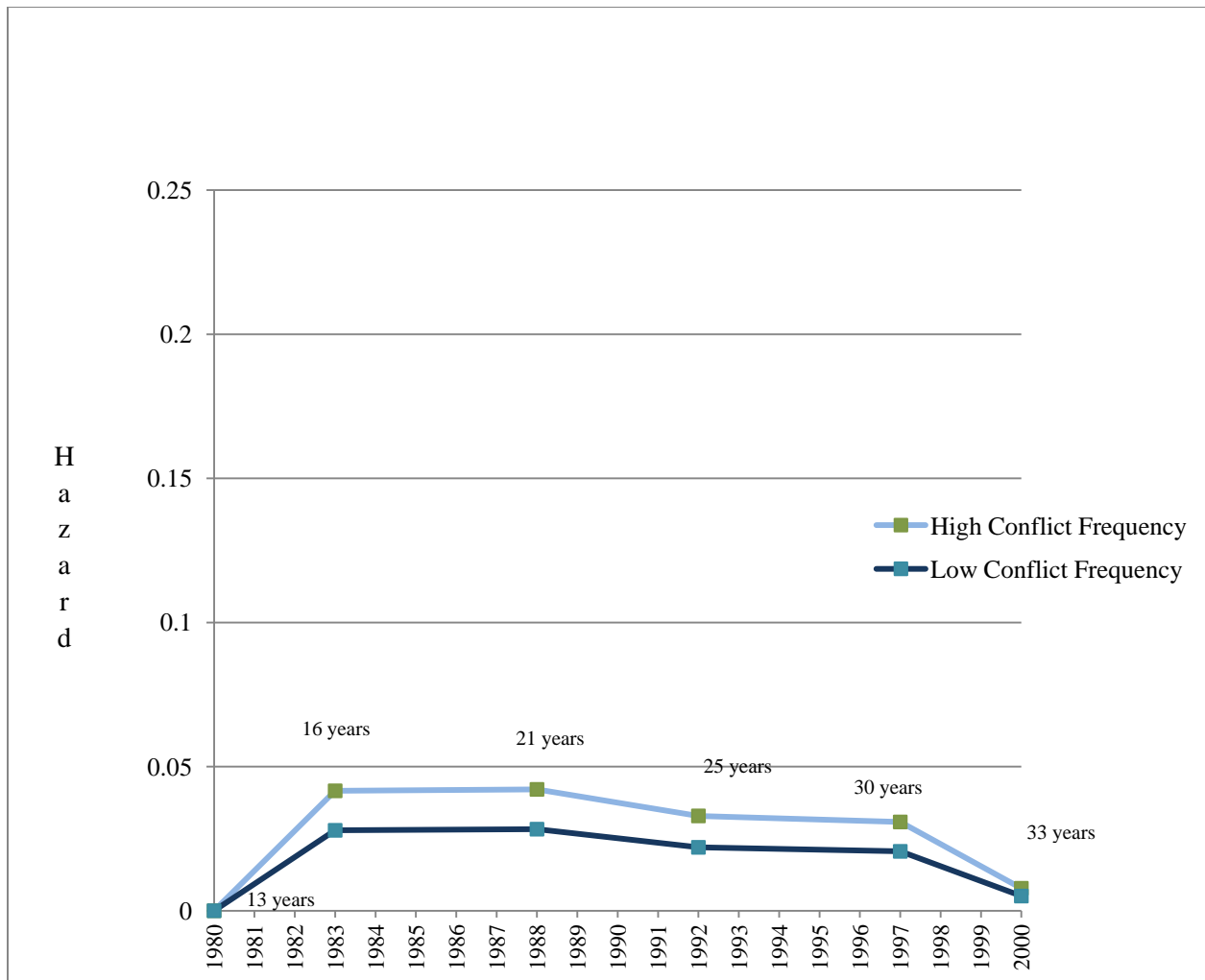


Figure 3. Divorce hazard function predicted by 1980 conflict frequency, controlling for sexual and marital satisfaction, and control variables (age at marriage, number of children, and premarital cohabiting status). On average, participants were married 13 years at the start of the study.

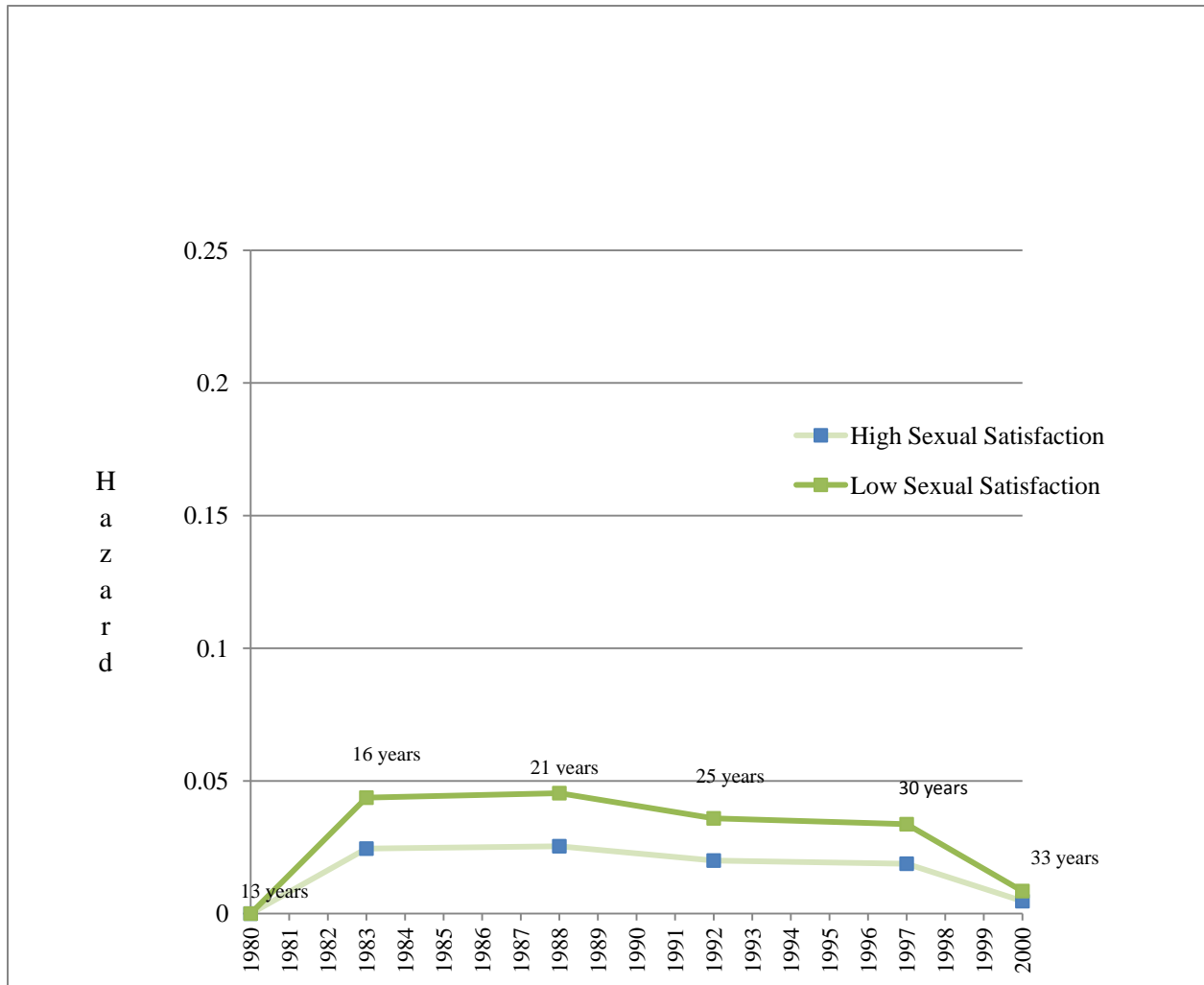


Figure 4. Divorce hazard function predicted by 1980 sexual satisfaction, controlling for conflict frequency, marital satisfaction, and control variables (age at marriage, number of children, and premarital cohabiting status). On average, participants were married 13 years at the start of the study.

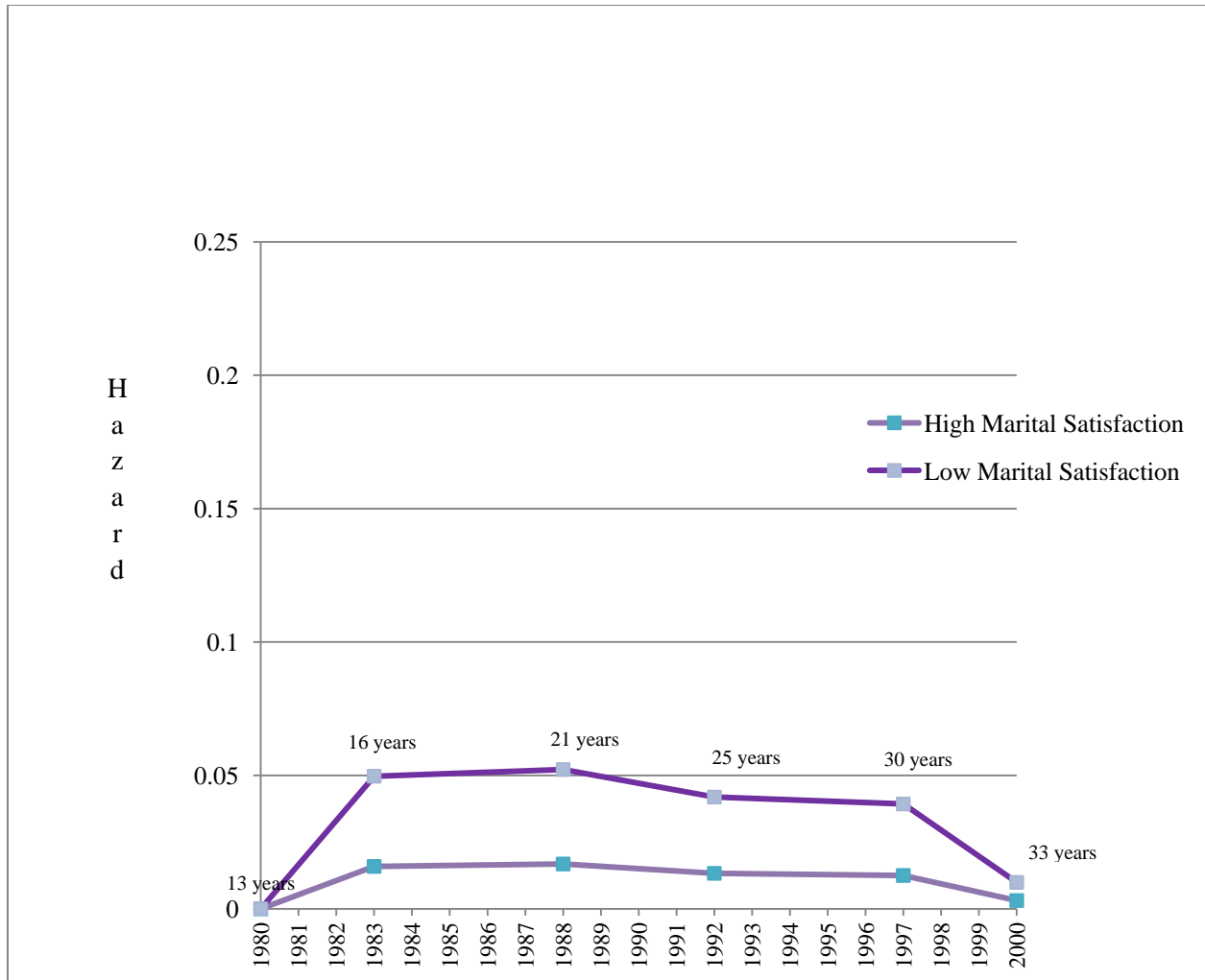


Figure 5. Fitted divorce hazard function predicted by 1980 marital satisfaction, controlling for sexual satisfaction, conflict frequency, and controls (age at marriage, number of children, and premarital cohabiting status). On average, participants were married 13 years at the start of the study.

IV. General Conclusion

Since marriage and divorce are ultimately a part of a continuous sequence, it is important that studies include both to determine if the predictors of marital satisfaction and divorce risk are the same (Karney & Bradbury, 1995). The present studies investigated both the longitudinal interrelationships among marital satisfaction, sexual satisfaction, and conflict frequency and how these constructs influence divorce risk over 20 years in enduring marriages. Since marital satisfaction, sexual satisfaction, and conflict frequency change in marriages over time (Faulkner, et al., 2005; Liu, 2003; Van Laningham, Johnson, & Amato, 2001), the associations among these constructs is sometimes different and sometimes similar. This depends on which set of associations is under examination and the direction of influence that is considered.

In the first study, conflict frequency influences the perception of marital satisfaction to a greater extent than it does sexual satisfaction, meaning that sexual satisfaction is not as sensitive to conflict as marital satisfaction. Frequent arguments do not detract from the experience of enjoying sex, but they do detract from marital satisfaction. Therefore, creating an environment for satisfying sex to occur is, on average, not dependent upon how frequently individuals argue with their spouses. Sexual satisfaction, however, does not influence conflict frequency across many of the middle years of a marriage. The idea that unsatisfying sex could become a point of contention between spouses and may lead to arguments between them was largely unsubstantiated.

The make-up sex phenomenon is not in operation when frequent arguments are present. This is evidenced by the finding that on average, higher conflict frequency does not lead to higher sexual satisfaction. Make-up sex likely takes place immediately following an argument,

not years later. Thus, it is possible that the spacing of data collection obscured any possible positive association between sexual satisfaction and conflict frequency.

Marital satisfaction consistently negatively predicts conflict frequency. When spouses have less marital satisfaction they have more frequent arguments and vice versa. This finding indicates that when people are less satisfied with their marriages, they may make fewer efforts to suppress their thoughts and feelings concerning areas of contention between them and their spouses. Conversely, when people are more satisfied with their marriages, they may either suppress their thoughts and feelings for the benefit of the marriage or they may be able to discuss areas of disagreement without them becoming full-fledged arguments that create emotional distress. Since marital satisfaction is a more consistent predictor of conflict frequency than conflict frequency is of marital satisfaction means that having a strong marriage may ameliorate the negative effects of conflict more than frequent conflicts will decrease evaluations of one's marriage.

Although study one found several sex differences among study variables, both studies also found similarities between men and women. For example, marital satisfaction is positively predictive of sexual satisfaction for men or women for the entire 20 year period. Additionally, marital and sexual satisfaction and conflict frequency equally predict divorce for men and women. These findings suggest that associations among some relational constructs are universal for men and women. Thus, the two sexes should not be examined as though one is from Mars and the other is from Venus, when in fact, they share many similarities (Young et al., 1998).

Social exchange theory posits that the perceived level of rewards and costs within a marriage will influence marital satisfaction and divorce risk (Byers & Wang, 2004; Impett et al., 2002). High marital and sexual satisfaction and low conflict frequency were conceptualized as

relational rewards whereas low marital and sexual satisfaction and high conflict frequency were considered relational costs. Study one found that marital satisfaction and sexual satisfaction are positively associated and marital satisfaction and conflict frequency are negatively associated more often for women. Additionally, conflict frequency and sexual satisfaction are negatively associated for men at the early to middle years of marriage and for women near the later years. These findings indicate that the influence of rewards and costs differentially influence each other over time and the presence or absence of influence is sometimes dependent on being male or female.

Additionally, high marital satisfaction, high sexual satisfaction, and low conflict frequency (all considered rewards) are associated with a lower risk for divorce whereas low marital and sexual satisfaction and high conflict frequency (all considered costs) are associated with higher divorce risk. Divorce likelihood was the highest between 1983 and 1997 when individuals had been married between 16 and 30 years, but by the year 2000, when average individuals had been married 33 years, the total divorce risk was quite low. This means that influence of rewards and costs on divorce risk may be null and void the longer marriages last. The longer marriages last, individuals may be less likely to divorce because the cost of ending marriages that have lasted several decades outweighs the benefits (Levinger, 1979).

The present studies also indicate that, in some ways, marital factors such as satisfaction, sexual satisfaction, and conflict frequency influence each other as well as divorce risk in similar ways regardless of marital duration. Sexual satisfaction positively predicts marital satisfaction which is consistent with findings from studies conducted with people in shorter and longer term marriages (Oggins, Leber, & Veroff, 1993; Yeh et al., 2006) and conflict frequency predicts

lower marital satisfaction which is also similar to another study conducted with newlywed couples (Crohan, 1996).

Marital and sexual satisfaction and conflict frequency predict divorce risk which is consistent with findings from previous studies (Dzara, 2010; Heaton & Blake, 1999; Rodrigues et al., 2006), but the percentage of individuals who experienced a divorce in study two is lower compared to findings from other studies (Bramlett & Mosher, 2001; Kalil et al., 2010). Since many divorces occur within the first 10 to 15 years of marriage (Bramlett & Mosher, 2001; Teachman, 2003), it is possible that the divorce risk in the present study was lower because, on average, these individuals had been married long enough to have passed the most risky times for a divorce to occur. The marital aspects that we examined must continue to be studied in marriages of longer durations to inform interventionists on how they are similar to and different from marriages of shorter durations.

Several practical implications can be drawn from the present studies. Interventionists who work with married individuals and couples must be aware of how long their target populations have been married. This awareness will inform therapists and educators about how to best work with those they serve. It is also important that educational interventions help their audiences develop skills that will increase marital satisfaction and sexual satisfaction and teach individuals and couples how their conflicts can be used to benefit their marriages.

The present studies highlight how the aspects of marriage we examined influenced each other and divorce risk. The middle and later years of marriage should continue to be studied to illuminate how aspects of marriage such as these change over time. From the newlywed years through marriages that have lasted several decades, it is important that marital development until

death or divorce be examined to educate the general public about how to maintain satisfying marriages and prevent divorce.

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