Pathways to Marital Relationship Quality During the Aging Process: Mediators of the Association between Physical Health and Marital Quality

Abstract

The goal of this study was to test a set of theory-based hypotheses about the factors linking poor health with marital quality in later life. The data used are from the 2005-2006 National Social Life Health and Aging Project (NSHAP), which surveyed a national probability sample of 3,005 community-dwelling men and women ages 57-85 in the United States . Our sample consists of the 88% of the 1,801 married respondents with complete data (N=1,585). We use a series of multiple regression models, separately for men and women, to test our hypotheses. We find partial support for our hypothesis that marital quality is a function of marital role taking, but robust support for our hypothesis that it is a function of psychological distress. A mediation model was supported, but with differences by gender and by type of health, marital quality, and role.

INTRODUCTION

The benefits of high quality relationships, and particularly high quality marriages, to individuals, families, communities, employers and society are well-known, as work in this area has accelerated over the past twenty years (Bradbury, Fincham & Beach, 2000; Waite & Gallagher, 2000; Fincham & Beach, 2010). Although important across the lifespan, marital relationship quality is particularly significant in later life (Henry, Berg, Smith & Florsheim, 2007). It is linked not only to the likelihood of marital dissolution, but also to mortality (Birditt & Antonucci, 2008; Coyne, Rohrbaugh, Shoham, Sonnega. Nicklas & Cranford, 2001; Hibbard & Pope, 1993). The reason for this link to mortality is the recursive relationship between physical health and marital quality.

Physical health's association with marital quality has been particularly well-documented (Yorgason, Booth, and Johnson 2008). Most research examining the association between health and marital quality has examined how negative interactions in marriage negatively affect physical health (Choi & Marks, 2008; Kiecolt-Glaser & Newton, 2001; Uchino, Cacioppo, Kiecolt-Glaser). This adverse affect is greater at older ages (Umberson, Williams, Powers, Liu & Needham, 2006). Conversely, when marriages are of high quality, they can help enable individuals to cope with stressors and thereby maintain good physical health (Ditzen, Hoppman & Klumb, 2008). Beyond the health dividend associated with marriage itself, high quality marriages can lead to even greater rewards (Murphy, Glaser & Grundy, 1997; Wickrama, Lorenz, Conger & Elder 1997).

The causal mechanisms operate in both directions, however. As health declines in later life, this linkage represents a potential pathway to decreased marital quality. Among adults under 55, decrements in health have been associated with deterioration of marital happiness (Booth & Johnson, 1994). Furthermore, while decrements in one's own health have been linked to modest decrements in marital quality, decrements in one's partner's health – especially a husband's health – have been linked to quite substantial marital quality deterioration (Yorgason, Booth & Johnson, 2008). This

direction of causality may be particularly important in later life, when chronic illness becomes the norm, not the exception (Yang Yang, 2008). The pathways linking poor health with marital quality in later life have been little examined at the population level, despite the importance of martial quality to individuals and society. The goal of this study was to test some hypotheses about the factors linking poor health with marital quality in later life. A secondary goal was to explore gender differences in these associations.

Our conceptual model is based on the stress deteriorization hypothesis and the stress generation model (Davila, Bradbury, Cohan & Tchluk, 1997; Ensel and Lin 1991; Hammen, 1991 – Pearlin et al. 1981; Thoits 1996) According to the first of these theories, one's own or one's partner's poor physical health impacts the roles partners take in a relationship, and individuals dissatisfied with their marital roles, including the role of the invalid spouse, will experience greater psychological distress and less marital happiness (Ensel and Lin 1991; Pearlin et al. 1981; Thoits 1996 – Cited in Warner and Kelley Adams**).** According to the second of these theories, individuals experiencing psychological distress cause their own stressful interactions with spouses, which leads to deterioration of marital quality (Davila, Bradbury, Cohan & Tchluk, 1997; Hammen, 1991 – cited in Proulx, Helms & Buehler 2007 article). Though this second theory was proposed for people experiencing depression, it may generalize to those experiencing any kind of psychological distress. Together, these theories predict that marital quality will be a function of marital role taking and psychological distress, both of which are a function of physical health and the second of which is a function of marital role taking.

Thus, we propose the following hypotheses

1. Relationship roles mediate the association between physical health – one's own and one's partner's – and marital quality
2. Psychological health – one's own and one's partner's -- mediates the association between relationship roles and marital quality
3. Psychological health – one's own and one's partner's -- mediates the association between physical health – one's own and one's partner's – and marital quality

We also propose the following hypothesis, the rationale for which will be explained shortly:

4. The physical caretaker role will be more negatively associated with positive marital quality among women than men, and limitations to the sexual partner role will be more negatively associated with positive marital quality among men than women.

The association of psychological distress with marital quality has been well-researched. Psychological distress has been shown to mediate the association between poor health and low marital happiness (Yorgason, Booth & Johnson, 2008). This mediating affect was seen for both one's own and one's spouse's poor health. Also, the association between psychological ill health and marital distress, though found across the lifespan (Gierveld, Groenou, Hoogendoorn & Smit, 2009; Hawkins & Booth, 2005;

Horowitz, White, Howell-White, 1996; Ross, 1995), has been shown to be stronger in older adults (Whisman, 2007). What has been little explored is how the marital roles played by older adults may mediate the association between physical health, psychological well-being, and marital relationship quality.

Health problems have been linked to problems carrying out social and family roles (Northouse, Mood, Templin Mellon & George, 2000). Health problems of one's partner also sometimes necessitate the healthy partner's assumption of a caretaker role, or can interfere with the healthy partner's engagement in the sexual partner role. While the roles heretofore examined in the literature (including those related to household division of labor) have not proved to be mediators of the association between poor physical health and decreases in marital happiness among older adults (Yorgason, Booth & Johnson, 2008), engagement in the physical caretaker and sexual partner roles have not been tested as such potential mediators.

One of the factors that enable older adults to remain in the community as they age is the availability of kin to provide care if their health declines. Four fifths of spouses of people with a disability provide care to their spouse (Schultz et al, 1997). However, the transition into a caregiver role, and the stresses of the role over time, have both been linked to deterioration of psychological health (Brookwala, Yee, Schulz in Williamson, Shaffer, Parmelee 2000; Pinquart & Sorensen, 2003) Moreover, providing spousal care is more deleterious, on average, to psychological functioning and well-being than providing care to other relatives (Choi & Marks, 2006; Pinquart & Sorensen, 2003). Such decrease in psychological well-being may impact negatively on the marital relationship, as discussed above. Also, if the assumption of the caretaker role leads to a reduction in engagement in the sexual partner role, this may also impact marital quality (Svetlick et al, 2005).

The sexual partner role is itself an important correlate of marital quality. Health problems, particularly men's health problems, have been linked to reduced sexual frequency and higher likelihood of disengagement from the sexual partner role entirely (Call, Sprecher & Schwartz, 1995; Lindau, Schumm, Laumann, Levinson, O'Muircheartaigh & Waite, 2007; Waite & Das, 2010) This association can in part explain the link found between increased age and decreased engagement in partnered sexual activity (Call, Sprecher & Schwartz, 1995) Such a disengagement from the sexual role has been associated with decrease marital satisfaction, though most studies have posited that marital satisfaction is the dependent variable (e.g. Call, Sprecher & Schwartz, 1995). It is possible that those who report that they no longer have sex because they or their partner are "not interested" owe their lack of interest to their dissatisfaction with the marital relationship.

There has been a consistent gender difference in marital happiness over the past forty years, in favor of husbands (Amato, Johnson, Booth & Rogers, 2003; Corra, Carter, Carter & Knox, 2009). This difference has been explored as a factor of socioeconomic variables such as education (Amato, Johnson, Booth & Rogers, 2003; Bulanda, 2011; Corra, Carter, Carter & Knox, 2009). One reason for this difference in later life may be the changes in marital role taking that come with age. For example, while both husbands and wives are more likely as they age to provide care for their spouse, assuming the partner caretaker role has been shown to be more deleterious to women's than men's physical and psychological health and thus we may expect that

such role taking will be more deleterious for women than men's marital happiness. In contrast, though older men rate sex as more important than do women (Lindau, Schumm, Laumann, Levinson, O'Muircheartaigh & Waite, 2007), disengagement from the sexual partner marital role has the potential to reduce the marital happiness of both members of the dyad.

Marital quality refers to both the way that individuals feel about their marriage and the dynamic relational processes that occur in the dyad (Glenn, 1990). These feelings and dynamic processes take both positive and negative forms, and research has demonstrated that these represent different dimensions, and not merely opposite poles of single dimension (Glen, 1990; Fincham, Beach & Kemp-Fincham, 1997; Fincham & Linfield, 1997). From this perspective, the processes that lead to positive marital quality, including those that may occur during marital role interactions, are distinct from those that lead to marital distress (Bradbury, Fincham & Beach, 2000). However, in the case of marital role taking, the salience, importance and even the nature of the process – whether it is a positive or negative process – may differ by gender.

Prior research has mainly focused on the physical and psychological health correlates of marital role engagement or positive marital quality. Most studies examining the predictors of negative marital processes and how negative processes impact positive marital quality have used small or non-representative samples (e.g., Fincham & Linfield, 1997, others). No study has yet examined how health and role factors may operate together to predict both positive and negative marital quality. The goal of the present study was to use a nationally-representative sample of older adults to examine how engagement in the sexual partner, caregiver, and confident roles, and psychological well-being, may explain how individual and partner physical health impacts positive and negative marital quality in later life.

METHODS

Data and Sample

The data used are from the 2005-2006 National Social Life Health and Aging Project (NSHAP), which surveyed a national probability sample of 3,005 community-dwelling men and women ages 57-85 in the United States (O'Muircheartaigh, Eckman, & Smith, 2009; Smith et al., 2009). The study utilized a multi-stage sampling design and over-sampled Latinos and African Americans to ensure sufficient sample size. It has an unweighted response rate of 74.8% and a weighted response rate of 75.5% (O'Muircheartaigh et al., 2009; Smith et al., 2009). The bulk of the data were collected in respondents' homes during a two-hour interview using a Computer-Assisted Personal Interview (CAPI) questionnaire. Additional data were collected via a Leave Behind Questionnaire (LBQ) which the respondent completed and mailed in after the interviewer had left. The return rate for the LBQ was 84% (O'Muircheartaigh et al, 2009).

Of the 3,005 respondents surveyed, 77.9% of the men and 55.5% of the women - almost exactly 60% all together - were married at the time of the interview. Of those 1,801 respondents, the 88% with complete relationship quality and explanatory variable data comprise this study's sample (N=1,585). We retain in the sample those respondents who did not return the LBQ because 16% of the sample did not return the LBQ and we only use a single measure from that instrument. Our method for accounting for the missing data for that one measure is described in the Independent Measures section below.

Marriage Quality Measures

Our measures of marriage quality are derived from seven items that appear in various sections of the questionnaire. In the section on social networks, respondents were asked how close they felt their relationship with their spouse was. Possible responses were not very close, somewhat close, very close, or extremely close. Immediately following the networks section was a set of four questions about the respondent's partner. These items asked how often the respondent could open up to their spouse if they needed to talk about their worries, how often the respondent could rely on their spouse for help if they had a problem, how often the spouse made too many demands on the respondent and how often the spouse criticized the respondent. Possible responses to each were "hardly ever (or never)", "some of the time", or "often". A little later in the interview the respondents were asked a set of questions about their current or most recent sexual partner, which for married respondents was assumed to be their spouse. In this section, respondents were asked how happy their relationship with their spouse was, with answer options anchored at 1 (very unhappy) and 7 (very happy). Respondents were also asked how emotionally satisfying they found their relationship: extremely, very, moderately, slightly, or not at all. "These items map to the well-researched positive and negative aspects of marital quality (Bookwala and Franks 2005; Fincham and Linfield 1997; Johnson et al. 1992)

To obtain consistent response categories across all measures, we recoded the relationship happiness , emotional satisfaction, and relationship closeness measures. All three of these measures were left skewed, so in all three case we collapsed the categories at the low-quality end of the scale. Relationship happiness was recoded into 1= "Unhappy (1,2,3,4)", 2= "Happy (5,6)", and 3= "Very Happy (7)" (r = 0.91 with original measure). Emotional satisfaction was recoded 1= not, slightly, or moderately, 2=very, 3=extremely (r = 0.95 with original measure). Relationship closeness was recoded 1=not very or somewhat, 2=very, 3=extremely (r = 0.99 with original measure).

We formed our scales of negative and positive relationship quality basically following the method in Warner and colleagues(Warner, forthcoming). (Our factor structure differs from theirs in that we added the relationship closeness and emotional satisfaction variables and removed the spending time together variable. All three of these changes increased the internal consistency reliability of the positive marital quality factor but did not substantively impact the factor solution.) An exploratory factor analysis with the principal component method suggested that a two factor solution would be

best. Our main factor analysis used the iterated principle factor method and an oblique rotation, since we expected that the factors would be correlated (as they were, alpha=-0.44). In interpreting the rotated factors,we considered an item with a loading of 0.30 or greater significant. We designated Factor 1 as *Positive Marital Quality* (alpha = 0.76) and Factor 2 as *Negative Marital Quality* (alpha = 0.61). The calculated estimated factor scores (Hatcher 1994) are the dependent variables in our models.

Independent Measures

Sociodemographic measures included age, race/ethnicity, educational attainment, and marriage duration. Age was coded as a categorical variable, with the categories being 57-64, 65-74, and 75-85 years old. Race/ethnicity was coded as white, black or other. Educational attainment was coded as less than high school, high school diploma or equivalent, some college or an associates or vocational degree, and bachelors degree or higher. Based on preliminary biarviate analysis, marriage duration was coded as less than ten years, ten to 39 years, and 40 years or more.

Three of our four measures of physical and psychological health are respondent assessments. Respondents rated their own physical health as excellent, very good, good, fair, or poor, and then did the same for their partner's health. The poor and fair categories of both measures were combined for the analysis to ensure adequate cell size. Respondents also rated their partner's mental health using the same scale, and the poor and fair categories of this measure were combined as well. Based on bivariate results, this measure is used as a continuous variable. The respondent also rated his or her own mental health, but instead of using that measure, we use a more reliable and detailed measure computed using three subscales intended to assess stress, depression, and anxiety. Stress was measured using a modified index version of Cohen's four item PSS stress scale(Cohen, Kamarck, & Mermelstein, 1983). Depressive symptoms were measured using an 11 item scale based on the 11 item Iowa form of the Center for Epidemiological Studies Depression Scale (CES-D) (Radloff, 1977; Shiovitz-Ezra, Leitsch, Graber, & Karraker, 2009). Anxiety symptoms were measured using a modified version of the seven item anxiety subscale of the Hospital Anxiety and Depression Scale (HADS-A) (Snaith & Zigmond, 1986; Zigmond & Snaith, 1983). The text of the items of the anxiety subscale was unchanged from the original but the response categories were modified to match those of the CES-D in order to ease respondent burden and increase consistency. Because these three subscales (stress, CES-D, and HADS-A) are highly correlated and combining them allows for a more parsimonious model, we calculated their average and used that measure in the analysis (Luo & Waite, 2011). The resulting measure of psychological distress has a Cronbach's alpha of .80. It ranges from 1 to 4 with higher values associated with higher levels of distress."

Behaviors indicative of marital role taking are measured with one item for each. Respondents who reported having had sex in the past year were asked how frequently they had had sex with their spouse: once a month or less, two to three times a month, once or twice a week, three to six times a week, or once a day or more. Because this measure was right skewed, we combined the last three categories into a single category

of “once a week or more”. We also added a category “did not have sex in the past year”. Respondents were also asked to list people with whom they most often discussed things that were important to them. We created a variable set to one if the respondent named their spouse in response to this question without being specifically prompted to do so. Finally, respondents were asked, in the leave behind questionnaire if they were currently assisting an adult with day-to-day activities, and if so, their relationship to that adult. From this information we created a four category variable: not providing care to their spouse, providing care to their spouse, no answer given to this question, and no answer given because the LBQ was not returned.

Analysis

Sample characteristics are shown in Table 1, separately for men and women [differences by t-tests and chi-squared shown] along with bivariate associations of each of the covariates with the two marital quality measures. For both the positive and negative marital quality measures we estimated a series of multiple regression models separately for men and women. In order to test for mediation we use the technique suggested by Barron and Kenney (19XX). The first model includes just the sociodemographic and physical health measures. The second model adds the marital role variables. The third, fourth, and fifth models add the measures of respondent’s psychological distress, partner’s mental health, and then both. [The sixth model, only shown in the positive marital quality models, adds the negative marital quality measure.] All analyses are adjusted for the complex sampling design and the resulting unequal probability of selection. All analyses are conducted using Stata, version 9 (Stata Corporation, 2007).

RESULTS

Sample characteristics

As shown in Table 1, our sample was 57% male and 43% female, reflecting older women’s greater likelihood of being widows than older men. Nearly half of both husbands and wives were between the ages of 57 and 64, and over four fifths were white. Husbands were more likely to have a BA or higher, but there were no differences by gender in physical health. Over half of wives and over 40% of husbands had been married for more than 40 years. Husbands were nearly evenly divided among the four sexual frequency categories, while wives were more likely to report the less frequent categories – including 34.2% who reported that they had not had sex with their partner in the past year. Wives were more likely than husbands to report taking the caretaker role while husbands were more likely than wives to name their spouse as a confident. Wives reported more psychological distress than husbands, but also reported that their partner had worse mental health than did husbands. Finally, husbands reported higher positive and negative marital quality.

Demographic factors and marital quality

Turning to the first columns of Tables 2 through 5, we can see the association between sociodemographic factors and marital quality.

The oldest men have less positive and more negative marital quality in initial models, but these age differences are accounted for by other factors. The oldest women have less positive marital quality, but partner's health completely explains the difference. There is no difference by age in negative marital quality among women.

African American men have less positive and more negative marital quality compared to White men. There were no differences in marital quality between Hispanic/other men and White men and no differences by race/ethnicity among women.These findings are consistent with previous research that has found that White men experience the greatest marital happiness, significantly more than Black men, but that the difference between white and Black women's marital happiness has been decreasing (Corra et al, 2009). However, it is not consistent with other studies that have found that Black women have less happy marriages than white women (Bulanda, 2011) This difference may be explained by the smaller sample size in this study, or by the different age range examined in this study.

Men who have been married more than 10 years have less positive marital quality than those who have been married less than 10 years, but there is no such association among women. Among both men and women, those who have been married more than 40 years have more negative relationships than those married less than 10 years. These findings are consistent with other studies that have found that negative relationship qualities increase over time among those who stay with the same partner (Birditt, Jackey & Antonucci, 2009). These findings are also largely consistent with results from longitudinal studies which find that marital happiness decreases with time (VanLaningham, Johnson & Amato, 2001; Umberson, Williams, Powers, Chen & Campbell, 2005), though this study adds the nuance of gender difference missing from some previous studies. We also see no evidence of the u-shaped curve in positive marital quality found in some previous studies, which has been attributed to cohort differences (Glenn, 1998; VanLaningham, Johnson & Amato, 2001)

Physical health, roles, and marital quality

To see the association between physical health and marital quality, we look at the first column in Tables 2 through 5. Own self-rated health is not a predictor of either positive or negative marital quality for either men or women, except in one condition, which will be discussed later. (Women in poor health actually report more positive marriages and less demands and criticism from their partner, once their psychological distress has been controlled for.) Partner's physical health, on the other hand, predicts both women's and men's positive marital quality and women's negative marital quality. Poorer partner health is linked to less positive marital quality among both men and women and more negative marital quality among women.

To see the association between roles and marital quality, we look at the second column of Tables 2 through 5. Absence of partnered sex is linked to both lower positive marital quality and greater negative marital quality for both men and women, though only for men is infrequent versus weekly sex linked to less positive marital quality. Providing care for one's spouse is also linked to lower positive marital quality for both

women and men, while reporting that one's spouse is a confident is linked to greater positive marital quality for both men and women.

Evidence of Mediation

Based on our first hypothesis, we expected to find that physical health would predict marital quality, as would relationship roles (sex, caregiving, confident), and that the coefficient of physical health in the marital quality regression would be reduced when the role variables were added. We find support in this form for our first hypothesis only for partner's physical health and only among women. Only partner's health, not own health, predicted marital quality, and only in the women's models were the partner's health coefficients reduced in both magnitude and significance after adding the role measures.

In separate analyses (not shown), we found that partner's physical health predicted both sexual frequency and caretaking among women, further supporting the mediation model for those two measures. Noteably, we also found that own health predicted sexual frequency for both men and women, though it was not linked directly to marital quality.

Turning now to the association between psychological well-being and marital quality, we examine the third, fourth, and fifth columns of Tables 2 through 5. We find that both one's own and one's partner's psychological well-being is related to both positive and negative marital quality, among both older men and older women. Greater psychological distress is associated with less positive and more negative marital quality, while greater partner psychological well-being is associated with more positive and less negative marital quality. As we see in column five of Tables 2 through 5, these associations hold even after controlling for the other type of well-being, though the association of own distress and negative marital quality is marginal in this case for men.

Based on our second and third hypotheses, we expected to find that psychological health would predict marital quality, as would physical health and relationship roles (sexual partner, caregiver and confident), and that the coefficient of the relationship roles and physical health variables in the marital quality regression would be reduced in significance and magnitude when the psychological health variables were added. We find support in this form for partner's mental health as a mediator, in most but not all cases.

Partner's mental health mediates partner's physical health's association with positive marital quality for both men and women. In the negative martial health models, it is only among women that partner's physical health is a significant predictor, but partner's mental health mediates that association as well. Partner's mental health also partly mediates the association between the sexual, caretaking, and confident role measures and positive marital quality among women, and perhaps between the caretaking and confident role measures and positive marital quality for men. While own psychological distress does not appear to mediate any of these relationships, adding it to the women's models does reveal a suppressed effect: Women in fair or poor health actually experience less negative and more positive marital quality, once their psychological distress is accounted for.

In separate analyses (not shown), we found that partner's physical health predicted partner's mental health among both men and women, further supporting the

mediation model for the physical health measure. Reporting that one's spouse is a confident was also linked to greater partner mental health among both men and women. Noteably, not filling the sexual partner role was negative associated with partner's mental health and providing care for a partner was negatively associated with partner's mental health only among women. [Discussion: does this suggest that women taking care of their partners are more likely to be taking care of partners with dementia or other psychiatric problems?]

Finally, we find support for our fourth hypothesis regarding gender differences in the associations between role taking and marital quality. While both men and women experience less positive marital quality when they are no longer in the sexual partner role with their spouse, the frequency with which they engage in that role is only associated with positive marital quality among men. Likewise, while filling the caretaker role is associated with less positive marital quality among both women and men, only among women does that association persist after psychological health has been accounted for. As expected, we find no gender difference in the association of positive marital quality with having a partner who fills the confident role.

Two last interesting points: when negative marital quality is added to the men's positive marital quality model, the coefficient for Black is no longer significant, suggesting that it is the greater demands and criticisms experienced by Black husbands that account for their lower positive marital quality. This is consistent with Broman's (2005) study, which found that perceptions of spouse behavior explained racial differences in perceived marital quality. When negative marital quality is added to the women's positive marital quality model, the coefficient for poor/fair physical health is reduced in significance and magnitute, suggesting that it is the reduction in demands and criticism experienced by women in poor health (as seen in Table 4) that explains their greater positive marital quality.

Discussion

We find partial support for our hypothesis that marital quality is a function of marital role taking, but robust support for our hypothesis that it is a function of psychological distress. The mediation model was supported, but with differences by gender and by type of health, marital quality, and role.

Limitations

First, this study's results can only be generalized to community-dwelling older adults – those who are institutionalized were not included in the survey sample. Thus, the pathways linking physical health to marital quality may differ for individuals or couples in nursing homes or assisted care facilities. Second, because this study uses cross-sectional data, we cannot be sure of direction of causality. For example, marital quality may be a more important predictor of psychological distress than the other way around, particularly for women (Fincham, Beach, Harold & Osborne, 1997; Proulx, Helms & Buehler, 2007). The impact of caregiving on marital quality may also vary by the quality of the marriage before the caregiving role was assumed (Choi & Marks,

2006). Also, conclusions about the association of duration of marriage with other factors should be interpreted cautiously, since selection bias may be at work. Unhappily married people are more likely to divorce and such people would not be in our sample (Waite, Luo & Lewin, 2009).
Third and finally, this study was limited by its lack of couples data. While it is standard to model dyadic processes using data supplied by a single spouse, a more robust picture can be obtained by using data gathered from both members of the dyad (Walker & Luszcz, 2009).

These results are consistent with studies that have found that self-rated health is associated with marital happiness (Bulanda, 2011)

The association of caregiving with marital quality has important policy implications. More than half of spouses caring for their older partner do so without the support of a secondary caregiver (Wolff & Kasper, 2006). Caregiving itself was associated with an increase in personal distress only among men, and only after controlling for marital quality. But caregiving's direct negative assocation with marital quality among women may in part explain the health and mortality differentials experienced by caregivers. While only some caregivers experience distress about the caregiving (Schulz et al, 1997), those who are stressed may be stressed in part as a result of the decrease in marital quality.

Though we did not measure health-related nagging (Umberson, 1992), making too many demands and being critical may be a way of saying "nagging" "While negative relations are often harmful, other findings suggest that they may have the dual effect of increasing distress while simultaneously improving health behaviors (Hughes & Gove, 1981). Krause, Goldenhar, Liang, Jay, and Maeda (1993) found that although negative interactions were associated with greater depression, they were also associated with more frequent physical exercise among Japanese elders. Similarly, Lewis and Rook (1999) reported that social control efforts were associated with greater distress as well as improved health behaviors. These findings suggest that although negative aspects of relationships may be distressing, they may lead to health improvements." (Birditt & Antonucci, 2008)

Table 1. Sample characteristics and coefficients from bivariate regressions of positive and negative marital factors on these characteristics, by gender

	Men	Women	Men		Women	
	%	%	Positive	Negative	Positive	Negative
Age						
57-64 (1)	46.9	47.5	ref	ref	ref	ref
65-74	33.6	34.7	-0.1	0.07	-0.19*	0.17+
75-85	19.5	17.8	-0.13+	0.18+	-0.27**	0.03
Race/ethnicity						
White (1)	83.5	85.2	ref	ref	ref	ref
Black	6.7	6.9	-0.40***	0.56**	-0.27	0.17
Hispanic/Asian/Other	9.8	7.9	-0.1	0.04	-0.12	0.03
Education* **						
<High school (1)	14.9	13.5	-0.12	-0.07	-0.41*	0.07
High school Diploma	24.2	28.7	-0.04	0.04	-0.14	0.09
Some college	28.1	36.9	-0.01	0.06	-0.13	0.14
BA or higher	32.8	20.9	ref	ref	ref	ref
Marital duration* **						
<10 years (0)	10.2	6.4	ref	ref	ref	ref
10-39 years	46	37.4	-0.29***	0.28+	-0.13	0.06
40+ years (2)	43.8	56.2	-0.26**	0.35*	-0.25+	0.29*
Physical health						
Poor/fair (1)	21.7	18.5	-0.30**	0.21	-0.23	0.01
Good	28	31	-0.30***	0.12	-0.15	0.17
Very good	37	36.8	-0.17+	0.06	-0.15	0.04
Excellent (4)	13.3	13.6	ref	ref	ref	ref
Partner's physical health						
Poor/fair (2)	24.2	26.9	-0.53***	0.28*	-0.73***	0.40***
Good	28.6	29.4	-0.23*	0.17	-0.35*	0.35**
Very good	32.7	29.3	-0.04	0.01	-0.14	0.09
Excellent (5)	14.5	14.5	ref	ref	ref	ref
Partner's mental health+						
Poor/fair (2)	11.4	15.1	-1.05***	0.60***	-1.60***	0.95***
Good	24.9	28.1	-0.50***	0.32**	-0.80***	0.56***
Very good	36.3	31.8	-0.28***	0.21*	-0.50***	0.35***
Excellent (5)	27.3	25	ref	ref	ref	ref
Sexual frequency in past year* **						
Never (0)	24	34.2	-0.38***	0.37***	-0.71***	0.33**
Less than once per month	27.6	25	-0.34***	0.29*	-0.20+	0.22
2-3 times per month	23.5	20.9	-0.12	0.1	0.07	-0.06
Once a week or more	24.9	19.9	ref	ref	ref	ref

Provides care for partner**						
No (0)	79.1	76.3	ref	ref	ref	ref
Yes	3.4	7.2	-0.47**	0.07	-1.01***	0.32*
Missing	3.8	7.1	-0.06	-0.21	-0.08	0.04
Not returned	13.7	9.4	-0.05	-0.06	-0.17	0.11
Spouse was named as confident***						
Yes	86.5	72.3	0.40***	-0.17+	0.53***	-0.05
No (0)	13.5	27.7	ref	ref	ref	ref
Partner's mental health*	3.8	3.67	0.31***	-0.18***	0.49***	-0.30***
Psychological distress ***	-0.11	0	-0.48***	0.28**	-0.50***	0.34***
Neg-2vars-alpha.61 ***	0.1	-0.15	-0.39***	---	-0.54***	---
Pos-5vars-alpha.76 ***	0.14	-0.11		-0.60***	---	-0.43***

Table 2. Coefficients from regression of **positive** marital quality on sociodeomographic characteristics, physical health, marital roles, and mental health, **men**

	(1)	(2)	(3)	(4)	(5)	(6)
Age: 57-64						
65-74	-0.14*	-0.08	-0.10+	-0.08+	-0.10+	-0.08
75-85	-0.14+	-0.03	-0.09	-0.04	-0.09	-0.05
Race/ethnicity: White						
Black	-0.37***	-0.34***	-0.33***	-0.29***	-0.29**	-0.1
Hispanic/Asian/Other	-0.03	-0.03	-0.02	-0.01	0	0.03
Education: <High School	0.05	0.09	0.13+	0.13	0.16*	0.06
High school Diploma	-0.01	0.04	0.06	0.08	0.08	0.07
Some college	0.02	0.06	0.05	0.08	0.07	0.08
BA or higher	ref.	ref.	ref.	ref.	ref.	ref.
Marital duration: <10 years						
10-39 years	-0.21**	-0.15*	-0.20*	-0.17*	-0.21**	-0.15+
40+ years	-0.09	-0.03	-0.1	-0.07	-0.13+	-0.05
Physical health: fair/poor	-0.13	-0.08	-0.1	0.09	0.03	0.03
Good	-0.19*	-0.16*	-0.14+	-0.09	-0.09	-0.1
Very good	-0.15+	-0.15+	-0.15+	-0.11	-0.12	-0.12
Excellent (4)	ref.	ref.	ref.	ref.	ref.	ref.
Partner's physical health: fair/poor	-0.44***	-0.37**	-0.02	-0.35**	-0.04	-0.05
Good	-0.15	-0.13	0.08	-0.14	0.05	0.04
Very good	0.03	0.03	0.12	0.01	0.09	0.06
Excellent (5)	ref.	ref.	ref.	ref.	ref.	ref.
Sexual frequency in past year: never		-0.25**	-0.21**	-0.23**	-0.20**	-0.13+
Less than once per month		-0.24***	-0.21***	-0.22***	-0.20**	-0.14**
2-3 times per month		-0.09	-0.05	-0.08	-0.05	-0.04
Once a week or more		ref.	ref.	ref.	ref.	ref.
Provides care for partner: No						
Yes		-0.25+	-0.2	-0.15	-0.12	-0.19
Missing		0.04	0.03	0.04	0.03	-0.05
Not returned		-0.1	-0.08	-0.08	-0.06	-0.07
Spouse is confident		0.32***	0.25*	0.29**	0.24*	0.22*
Partner's mental health			0.27***		0.25***	0.19***
Psychological distress				-0.40***	-0.32***	-0.27***
Negative marital quality						-0.31***

Table 3. Coefficients from regression of **positive** marital quality on sociodeomographic characteristics, physical health, marital roles, and mental health, **women**

	(1)	(2)	(3)	(4)	(5)	(6)
Age: 57-64						
65-74	-0.11	-0.04	-0.04	-0.08	-0.08	-0.06
75-85	-0.1	0.07	0.05	0.05	0.04	-0.03
Race/ethnicity: White						
Black	-0.25	-0.26	-0.19	-0.22	-0.17	-0.12
Hispanic/Asian/Other	-0.03	-0.11	-0.09	-0.14	-0.12	-0.09
Education: <High School	-0.22	-0.09	-0.01	-0.04	0.03	-0.03
High school Diploma	-0.05	0.09	0.16	0.1	0.16+	0.14
Some college	-0.05	0.02	0.09	0	0.07	0.08
BA or higher	ref.	ref.	ref.	ref.	ref.	ref.
Marital duration: <10 years						
10-39 years	-0.11	-0.08	-0.05	-0.12	-0.08	-0.07
40+ years	-0.13	-0.13	-0.09	-0.17	-0.14	-0.04
Physical health: fair/poor	0.01	0.15	0.14	0.40**	0.35*	0.24+
Good	-0.02	0.09	0.06	0.18	0.13	0.13
Very good	-0.1	0.02	-0.04	0.07	0.01	0.01
Excellent (4)	ref.	ref.	ref.	ref.	ref.	ref.
Partner's physical health: fair/poor	-0.65***	-0.34**	0.19	-0.31*	0.19	0.16
Good	-0.31*	-0.23+	0.14	-0.19	0.16	0.15
Very good	-0.1	-0.13	0.02	-0.12	0.02	0
Excellent (5)	ref.	ref.	ref.	ref.	ref.	ref.
Sexual frequency in past year: never		-0.50***	-0.40***	-0.47***	-0.38***	-0.34**
Less than once per month		-0.12	-0.08	-0.11	-0.07	-0.04
2-3 times per month		0.15	0.1	0.14	0.09	0.06
Once a week or more		ref.	ref.	ref.	ref.	ref.
Provides care for partner: No						
Yes		-0.63***	-0.43**	-0.55***	-0.37**	-0.37**
Missing		-0.03	-0.12	-0.06	-0.14	-0.09
Not returned		-0.19+	-0.21*	-0.12	-0.15	-0.12
Spouse is confident		0.40***	0.32**	0.38***	0.31**	0.33***
Partner's mental health			0.42***		0.40***	0.30***
Psychological distress				-0.43***	-0.37***	-0.25**
Negative marital quality						-0.35***

Table 4. Coefficients from regression of **negative** marital quality on sociodeomographic characteristics, physical health, marital roles, and mental health, **men**

	(1)	(2)	(3)	(4)	(5)
Age: 57-64					
65-74	0.06	0.03	0.04	0.03	0.04
75-85	0.17+	0.09	0.13	0.09	0.13
Race/ethnicity: White					
Black	0.63***	0.63***	0.62***	0.60***	0.60***
Hispanic/Asian/Other	0.1	0.11	0.11	0.1	0.1
Education: <High School	-0.25*	-0.26*	-0.28**	-0.28**	-0.30**
High school Diploma	0	-0.02	-0.03	-0.04	-0.05
Some college	0.04	0.04	0.05	0.03	0.04
BA or higher	ref.	ref.	ref.	ref.	ref.
Marital duration: <10 years					
10-39 years	0.22	0.16	0.19	0.17	0.19
40+ years	0.25+	0.19	0.24+	0.22	0.25*
Physical health: fair/poor	0.12	0.05	0.07	-0.04	0
Good	0.03	0	-0.02	-0.04	-0.04
Very good	0.04	0.02	0.03	0	0.01
Excellent (4)	ref.	ref.	ref.	ref.	ref.
Partner's physical health: fair/poor	0.2	0.17	-0.06	0.15	-0.06
Good	0.11	0.08	-0.06	0.09	-0.04
Very good	-0.05	-0.05	-0.11	-0.04	-0.1
Excellent (5)	ref.	ref.	ref.	ref.	ref.
Sexual frequency in past year: never		0.25*	0.23+	0.24*	0.22+
Less than once per month		0.21	0.2	0.2	0.19
2-3 times per month		0.05	0.03	0.05	0.03
Once a week or more		ref.	ref.	ref.	ref.
Provides care for partner: No					
Yes		-0.14	-0.18	-0.2	-0.22
Missing		-0.27+	-0.26+	-0.27+	-0.26+
Not returned		0	-0.01	-0.01	-0.02
Spouse is confident		-0.09	-0.05	-0.08	-0.04
Partner's mental health			-0.18***		-0.17***
Psychological distress				0.23*	0.17+

Table 5. Coefficients from regression of **negative** marital quality on sociodeomographic characteristics, physical health, marital roles, and mental health, **women**

	(1)	(2)	(3)	(4)	(5)
Age: 57-64					
65-74	0.04	0.02	0.02	0.06	0.05
75-85	-0.13	-0.20+	-0.19+	-0.18+	-0.17
Race/ethnicity: White					
Black	0.19	0.2	0.15	0.17	0.13
Hispanic/Asian/Other	0.03	0.07	0.06	0.09	0.08
Education: <High School	-0.05	-0.06	-0.12	-0.11	-0.16
High school Diploma	-0.01	-0.02	-0.07	-0.03	-0.07
Some college	0.06	0.06	0.01	0.07	0.02
BA or higher	ref.	ref.	ref.	ref.	ref.
Marital duration: <10 years					
10-39 years	0.05	0.04	0.01	0.07	0.04
40+ years	0.27*	0.26+	0.23+	0.30+	0.27+
Physical health: fair/poor	-0.1	-0.14	-0.14	-0.36**	-0.33**
Good	0.09	0.05	0.08	-0.03	0.01
Very good	0.01	-0.01	0.02	-0.06	-0.02
Excellent (4)	ref.	ref.	ref.	ref.	ref.
Partner's physical health: fair/poor	0.40***	0.28*	-0.09	0.25*	-0.09
Good	0.30*	0.26*	0	0.22	-0.02
Very good	0.06	0.05	-0.05	0.04	-0.06
Excellent (5)	ref.	ref.	ref.	ref.	ref.
Sexual frequency in past year: never		0.21+	0.14	0.19	0.12
Less than once per month		0.13	0.1	0.11	0.09
2-3 times per month		-0.13	-0.1	-0.12	-0.09
Once a week or more		ref.	ref.	ref.	ref.
Provides care for partner: No					
Yes		0.2	0.06	0.12	0
Missing		0.05	0.11	0.07	0.12
Not returned		0.12	0.13	0.06	0.08
Spouse is confident		0	0.06	0.02	0.07
Partner's mental health			-0.30***		-0.28***
Psychological distress				0.38***	0.34***

Table A. Coefficients from regressions of **marital roles** on on sociodeomographic characteristics, physical health, mental health, and marital quality, **men**

	Sexual Freq	Sexual Freq	Care	Care	Confide	Confide
Age: 57-64						
65-74	-0.71***	-0.69***	0.76	0.42	-0.88**	-0.84**
75-85	-1.75***	-1.73***	1.19*	0.94	-1.17**	-1.13**
Race/ethnicity: White						
Black	0.15	0.17	0.61	0.7	-0.82*	-0.75*
Hispanic/Asian/Other	0.19	0.17	0.44	0.34	-0.27	-0.29
Education: <High School	0.12	0.1	-0.2	0.08	-1.40***	-1.48***
High school Diploma	-0.31*	-0.32*	0.22	0.26	-1.22***	-1.27***
Some college	0.17	0.15	0.73	0.84	-1.33**	-1.39**
BA or higher	ref.	ref.	ref.	ref.	ref.	ref.
Marital duration: <10 years						
10-39 years	-1.34***	-1.31***	-0.38	-0.5	-0.69+	-0.59
40+ years	-1.41***	-1.40***	0.59	0.47	-0.56	-0.52
Physical health: fair/poor	-1.46***	-1.47***		-0.84	0.39	0.42
Good	-0.67**	-0.66**		-0.39	0.43	0.51
Very good	-0.35	-0.32		0.07	0.53	0.58
Excellent (4)	ref.	ref.		ref.	ref.	ref.
Partner's physical health: fair/poor	-0.81**	-0.79**	16.81***	16.17***	-0.02	-0.02
Good	-0.33	-0.34	14.74***	14.33***	0.04	0.02
Very good	-0.27	-0.28	14.87***	14.48***	0.25	0.21
Excellent (5)	ref.	ref.	ref.	ref.	ref.	ref.
Sexual frequency in past year: never				0.79	0.31	0.38
Less than once per month				-0.01	-0.13	-0.05
2-3 times per month				-1.23	0.07	0.08
Once a week or more				ref.	ref.	ref.
Provides care for partner: No						
Yes	-1.04*	-1.01*			0.3	0.41
Missing	0.08	0.1			-0.28	-0.26
Not returned	0.22	0.23			0.24	0.31
Spouse is confident	-0.17	-0.21		0.22		
Partner's mental health	0.04	0		0	0.33*	0.21
Negative marital quality	-0.19*	-0.12		-0.40*		0.11
Positive marital quality		0.20+		-0.48		0.53**
Distress	-0.12	-0.06		0.74+	-0.24	-0.09

Table B. Coefficients from regressions of **marital roles** on on sociodeomographic characteristics, physical health, mental health, and marital quality, **women**

	Sexual Freq	Sexual Freq	Care	Care	Confide	Confide
Age: 57-64						
65-74	-0.34+	-0.31+	0.79	1.03*	0.15	0.15
75-85	-1.05**	-1.04**	1.61**	1.82**	0.39	0.44
Race/ethnicity: White						
Black	0.42	0.48	-0.23	-0.17	-0.21	-0.16
Hispanic/Asian/Other	0.47	0.50+	.	.	-0.36	-0.28
Education: <High School	0.04	0.03	-0.16	-1.48+	-1.68***	-1.63***
High school Diploma	-0.04	-0.12	0.19	-0.32	-1.62***	-1.66***
Some college	-0.04	-0.08	-0.06	-0.89	-1.14**	-1.17**
BA or higher	ref.	ref.	ref.	ref.	ref.	ref.
Marital duration: <10 years						
10-39 years	-1.10+	-1.07+	0.72	-0.29	0.34	0.37
40+ years	-1.43*	-1.42*	-0.41	-2.12	0.43	0.4
Physical health: fair/poor	-0.67*	-0.76*		0.83	-0.09	-0.17
Good	-0.13	-0.21		1.91	-0.03	-0.1
Very good	-0.1	-0.11		2.15+	-0.31	-0.29
Excellent (4)	ref.	ref.		ref.	ref.	ref.
Partner's physical health: fair/poor	-0.70*	-0.77**	3.63**	2.76+	0.29	0.16
Good	-0.36*	-0.45*	1.83	1.09	0.31	0.19
Very good	0.07	0.03	-0.04	-0.76	0.45	0.4
Excellent (5)	ref.	ref.	ref.	ref.	ref.	ref.
Sexual frequency in past year: never				2.98*	-0.49	-0.33
Less than once per month				2.97+	-0.16	-0.18
2-3 times per month				3.63*	-0.60+	-0.65+
Once a week or more				ref.	ref.	ref.
Provides care for partner: No						
Yes	-0.6	-0.48			-0.89*	-0.67+
Missing	-0.06	-0.01			-0.42	-0.38
Not returned	-0.08	-0.07			0.08	0.16
Spouse is confident	0.24	0.09		-0.77*		
Partner's mental health	0.24*	0.1		-0.72*	0.26*	0.11
Negative marital quality	-0.18	0		-0.18		0.32*
Positive marital quality		0.47***		-0.47*		0.56***
Distress	-0.12	0.01		0.68	-0.09	0.01

Table C. Coefficients from regressions of **partner's mental health and own distress** on on sociodeomographic characteristics, physical health, marital roles, and marital quality, **men**

	Partner's mental health	Partner's mental health	Partner's mental health	Distress	Distress
Age: 57-64					
65-74	0.05	0.05	0.08	0	-0.02
75-85	0.21+	0.20*	0.22*	0.01	0
Race/ethnicity: White					
Black	-0.04	0	0.11	0.11*	0.08
Hispanic/Asian/Other	-0.04	-0.02	-0.02	0.05	0.04
Education: <High School	-0.15	-0.13	-0.17	0.08	0.09+
High school Diploma	-0.05	-0.02	-0.05	0.08	0.08
Some college	0.04	0.06	0.04	0.06+	0.07+
BA or higher	ref.	ref.	ref.	ref.	ref.
Marital duration: <10 years					
10-39 years	0.18	0.16	0.22+	-0.03	-0.05
40+ years	0.25+	0.22+	0.25*	-0.08	-0.09
Physical health: fair/poor	0.1	0.23	0.2	0.41***	0.40***
Good	-0.07	-0.02	0.01	0.15**	0.14**
Very good	0.03	0.06	0.09	0.10*	0.08*
Excellent (4)	ref.	ref.	ref.	ref.	ref.
Partner's physical health: fair/poor	-1.28***	-1.27***	-1.15***	-0.05	-0.05
Good	-0.78***	-0.79***	-0.74***	-0.10*	-0.09+
Very good	-0.33*	-0.34**	-0.35**	-0.08	-0.07
Excellent (5)	ref.	ref.	ref.	ref.	ref.
Sexual frequency in past year: never	-0.14	-0.12	-0.04	0.03	0.01
Less than once per month	-0.1	-0.08	-0.01	0.04	0.01
2-3 times per month	-0.14	-0.13	-0.11	0	-0.01
Once a week or more	ref.	ref.	ref.	ref.	ref.
Provides care for partner: No					
Yes	-0.19	-0.1	-0.06	0.24*	0.21*
Missing	0.03	0.03	0.01	-0.01	0
Not returned	-0.09	-0.07	-0.05	0.05	0.04
Spouse is confident	0.24*	0.21*	0.11	-0.05	-0.02
Partner's mental health				-0.08***	-0.05*
Negative marital quality			-0.02		0
Positive marital quality			0.34***		-0.12***
Distress		-0.32***	-0.18*		

Table D. Coefficients from regressions of **partner's mental health and own distress** on on sociodeomographic characteristics, physical health, marital roles, and marital quality, **women**

	Partner's mental health	Partner's mental health	Partner's mental health	Distress	Distress
Age: 57-64					
65-74	0.01	-0.01	0.03	-0.10+	-0.10+
75-85	0.05	0.04	-0.01	-0.05	-0.03
Race/ethnicity: White					
Black	-0.15	-0.13	-0.04	0.07	0.04
Hispanic/Asian/Other	-0.04	-0.05	0.01	-0.07	-0.09
Education: <High School	-0.2	-0.18	-0.18	0.11	0.12
High school Diploma	-0.16+	-0.16+	-0.19*	0	0.02
Some college	-0.17	-0.17+	-0.16+	-0.05	-0.04
BA or higher	ref.	ref.	ref.	ref.	ref.
Marital duration: <10 years					
10-39 years	-0.08	-0.09	-0.04	-0.09	-0.1
40+ years	-0.07	-0.09	0.01	-0.12	-0.15
Physical health: fair/poor	0.02	0.11	-0.07	0.57***	0.60***
Good	0.08	0.12	0.05	0.21**	0.21**
Very good	0.13	0.15	0.11	0.14*	0.13*
Excellent (4)	ref.	ref.	ref.	ref.	ref.
Partner's physical health: fair/poor	-1.24***	-1.23***	-1.09***	0	0.03
Good	-0.87***	-0.86***	-0.76***	0.04	0.05
Very good	-0.36***	-0.35***	-0.31***	0.01	0.02
Excellent (5)	ref.	ref.	ref.	ref.	ref.
Sexual frequency in past year: never	-0.24*	-0.23*	-0.05	0.05	0
Less than once per month	-0.1	-0.1	-0.04	0.02	0.01
2-3 times per month	0.12	0.11	0.05	-0.03	-0.01
Once a week or more	ref.	ref.	ref.	ref.	ref.
Provides care for partner: No					
Yes	-0.47**	-0.44**	-0.25*	0.18	0.13
Missing	0.2	0.19	0.22	-0.05	-0.07
Not returned	0.04	0.07	0.12	0.16	0.12
Spouse is confident	0.19*	0.18*	0.06	-0.03	0
Partner's mental health				-0.06*	0.01
Negative marital quality			-0.14***		0.09**
Positive marital quality			0.32***		-0.11**
Distress		-0.16**	0.03		