Married people show better health and lower mortality risk than the unmarried (Waite & Gallagher, 2000), but the benefits depend on the quality of the relationship, with poor quality relationships no better and perhaps worse than no relationship (Umberson, Williams, Powers, Liu, & Needham, 2006; Williams, 2003). Marital quality is important across the life span but seems to be particularly important in later life as health tends to decline and the effects of adversity accumulate (Carstensen, 1992; Henry, Berg, Smith, & Florsheim, 2007; Umberson et al., 2006). Marital adversity has been found to accelerate the decline in physical and mental health with age and to increase the risk of dying (Birditt & Antonucci, 2008; Coyne et al., 2001; Hibbard & Pope, 1993; Waite, Luo, & Lewin, 2009). At the same time, poor health can act as a stressor in the marriage, leading to declines in marital quality (Booth & Johnson, 1994; Wickrama, Lorenz, Conger, & Elder, 1997).

Most of the research examining the link between physical health and marital quality has investigated how negative interactions in marriage lead to declines in physical health (Choi & Marks, 2008; Kiecolt-Glaser & Newton, 2001; Uchino, Cacioppo, & Kiecolt-Glaser, 1996), with larger effects at older ages (Umberson et al., 2006). Conversely, high-quality marriages can help individuals to cope with stressors and thereby maintain good physical health (Ditzen, Hopmann, & Klumb, 2008; Warner & Kelley-Moore, 2012). However, the causal mechanisms connecting marital quality and physical health operate in both directions. Indeed, among adults age less than 55, decrements in health have been associated with deterioration in marital happiness (Booth & Johnson, 1994; Wickrama et al., 1997). Furthermore, although decrements in one’s own health have been linked to modest decrements in marital quality, decrements in one’s partner’s health have been linked to quite substantial declines in marital quality (Yorgason, Booth, & Johnson, 2008). This process may be particularly important in later life, when chronic illness becomes common (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 marital quality to individuals and society. In this study, we examine one set of hypothesized pathways. We argue that reduced engagement in sex with one’s spouse, an enriching marital role, is associated with worse marital relationship quality among those whose own health is poor and those whose spouse has physical health problems. Also, marital relationship quality is worse among those with the psychological distress that often accompanies...
We develop a conceptual model that links physical health, couple sexual activity, psychological well-being, and marital quality. In our model, ongoing sexual activity mediates the association between physical health and marital quality, as does psychological well-being. We conceptualize sexuality activity and psychological well-being as mediators because especially at older ages the biggest challenges to health come from chronic conditions, which develop slowly over years. In contrast, poor mental health as reflected, for example, in depression, may alter relatively quickly in response to the current situation (Hughes & Waite, 2009; Luo, Hawkley, Waite, & Caccioppo, 2012) as can sexual behavior (Carpenter, Nathanson, & Kim, 2009). Note that although we use the term marital quality for convenience, our analysis includes cohabiters as well. We test a series of hypotheses based on this model using data on both members of older adults in marital and cohabitational dyads from the second wave of the nationally representative National Social Life, Health and Aging Study.

**Couple Sexual Activity As a Mediator of the Physical Health–Marital Quality Association**

Poor physical health may be associated with marital quality indirectly through spousal engagement in marital roles. Poor physical health of one or one’s partner may affect the roles partners take in a relationship and the interaction between them in these roles. Hence, in this framework, poor physical health affects marital happiness through poor role performance and less positive (or more negative) interactions.

**Sexual Behavior**

Health problems have been linked to problems carrying out social and family roles (Northouse, Mood, Templin, Mellon, & George, 2000). In particular, the health problems of one or one’s partner can interfere with either partner’s desire for or ability to engage in sexual relations (DeLamater & Moorman, 2007; Karraker, DeLamater, & Schwartz, 2011; Laumann, Das, & Waite, 2008). It is important to note that the physical health problems of men may be especially important regarding sexual relations (Lindau et al., 2007). Physical health has been shown to affect satisfaction with sex in a middle-aged population (Carpenter et al., 2009). The link between health problems and sexual activity may help explain the observed association between increased age and decreased engagement in partnered sexual activity (Call, Sprecher, & Schwartz, 1995; Donnelly, 1993), which has been associated with low marital satisfaction (Call et al., 1995; DeLamater & Moorman, 2007; Donnelly, 1993). We hypothesize that marital quality is lower among those with less engagement in partnered sex.

**Physical Health, Psychological Health, and Marital Quality**

The impact of poor physical health on psychological distress has been well documented among individuals and in relationships. At the individual level, poor physical health, as indicated by morbidity and frailty, increases the risk for poor psychological health (Blazer, 2009; Bruce, 2000; Ormel, Rijssijk, Sullivan, van Sonderen, & Kempen, 2002). At the relationship level, one’s partner’s poor physical health, and his or her associated poor psychological health, predicts poor psychological health in the physically healthy partner (Hagedoorn et al., 2001).

According to the stress generation model, individuals experiencing psychological distress cause stressful interactions with spouses, which leads to poor marital quality (Davila, Bradbury, Cohan, & Tochluk, 1997; Hammen, 1991). Thus, in this framework, poor physical health leads to stress, which increases the risk of poor psychological health, which in turn increases chances of negative interactions and ultimately poor marital quality. Evidence for this theory has been found among older adults at both the individual and relationship levels. Psychological distress has been shown to mediate the association between one’s own and one’s spouse’s poor health and low marital happiness (Yorgason et al., 2008). Psychologically distressed people have also been shown to have more negative spousal interactions (Kramer, 1993; Rehman, Gollan, & Mortimer, 2008). Though the association between psychological ill health and marital distress is found across the life span (Giervel, van Groenou, Hoogendoorn, & Smit, 2009; Hawkins & Booth, 2005; Horwitz, White, & Howell-White, 1996; Ross, 1995), it seems to be stronger in older adults (Whisman, 2007).

Thus, we hypothesize that 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.

**Dimensions of marital quality.**—Marital quality consists of both positive and negative dimensions, which are distinct constructs, not merely opposite poles of a single dimension (Fincham, Beach, & Kemp-Fincham, 1997; Fincham & Linfield, 1997). Most research to date has focused mainly on the positive dimension, and on the physical and psychological health correlates of sexual engagement (Carpenter et al., 2009) or, separately, of marital quality. For this reason, we know little about how physical health, psychological well-being, and the sexual engagement of the couple operate together to predict both positive and negative marital quality in a population sample.

**Conceptual Framework**

Our conceptual model of the associations among physical health, partnered sexual behavior, psychological health,
Galinsky and Waite and marital quality is shown in Figure 1. In this model, poor physical health—either one’s own or one’s partner’s—is linked to lower levels of both one’s own and one’s partner’s psychological health and greater likelihood of low levels of partnered sex. In turn, infrequent partnered sex and poor psychological health are both associated with poor marital quality. Note that this model reflects one set of hypothesized relationships. We discuss alternative models later in the article. We test the following hypotheses:

1. We hypothesize frequency of sex with one’s spouse mediates the association between physical health—one’s own and one’s partner’s—and marital quality.

2. We hypothesize that 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.

**Methods**

**Data and Sample**

Data come from the second wave of the National Social Life Health and Aging Project (NSHAP). The first wave of this study, conducted in 2005 and 2006, 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 second wave, conducted in 2010 and 2011, reinterviewed as many respondents from the first wave as could be contacted and were healthy enough to participate (88.8%), as well as some Wave 1 non-respondents, and the partners of the Wave 2 respondents, with an unweighted response rate of 76.1% for referent respondents and 84.5% for partners, yielding an overall response rate of 78.3%. In both waves, the bulk of the data were collected in respondents’ homes during a 2-hr interview using a Computer-Assisted Personal Interview questionnaire. Additional data were collected via a Leave-Behind Questionnaire (LBQ) that the respondent completed and mailed in after the interviewer had left. The return rate for the second wave LBQ was 87%.

Of the 2,261 original Wave 1 respondents, 1,961 (86.7%) were randomly selected for the partner-interview sample. Of these, 1,075 (54.8%) were married or living with a partner. Of such partners offered an interview, 905 (84.2%) participated. Of the 161 original Wave 1 non-respondents who participated in Wave 2, 90 were married or living with a partner, and of those 90 partners, 48 (53%) participated. The characteristics of the sample of participating partners are discussed in O’Muircheartaigh, English, Pedlow, and Kwok (in press), who point to very little bias. The two same-sex couples in the sample were included. Thus, the total number of respondents participating whose spouse or cohabiting partner also participated was 1,910. The 76.6% of those 1,910 respondents with complete data on relationship quality and explanatory variables comprise this study’s sample ($N = 1,464$). Sample characteristics are shown in Table 1.

**Measures**

**Marital quality.**—Our measures of marriage quality are derived from nine items. First, 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. Respondents were also asked a set of four questions about their spouse. 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), rarely, some of the time, or often. Respondents were also asked how happy their relationship with their spouse was, with answer options anchored at 1 (very unhappy) and 7 (very happy) and how they liked to spend their free time—doing things together with their partner, doing some things together and some separately, or doing things separately. The respondents were asked how emotionally satisfying they found their relationship with

![Figure 1. Conceptual model of the associations among physical health, sexual activity, psychological health, and marital quality.](image-url)
their current or most recent sexual partner, which for married respondents was assumed to be their spouse. Answer options were extremely, very, moderately, slightly, or not at all. Finally, in the LBQ, they were asked how often their partner got on their nerves. Possible responses were never or hardly ever, rarely, sometimes, or often.

To obtain consistent response categories across all measures, we recoded these measures. The measures of relationship happiness, emotional satisfaction, and relationship closeness were left skewed, so 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 = .91 with original measure). Emotional satisfaction was recoded 1 = not, slightly, or moderately; 2 = very; and 3 = extremely (r = .95 with original measure). Relationship closeness was recoded 1 = not very or somewhat, 2 = very, and 3 = extremely (r = .99 with original measure). For consistency with the other items in the scale, we collapsed the categories never/hardly ever and rarely for the opening up, relying on, criticizing, and getting on nerves items.

To form our scales of negative and positive relationship quality, we first conducted an exploratory factor analysis with the principal component method, which suggested that a two-factor solution would be best. Our main factor analysis used the iterated principle factor method and an oblique rotation because we expected that the factors would be correlated (as they were, r = −.66). We refer to Factor 1 as Positive Marital Quality (alpha = 0.76) and Factor 2 as Negative Marital Quality (alpha = 0.63). The estimated factor scores, which we calculated following Warner and Kelley-Moore (2012), are the dependent variables in our models (Floyd & Widaman, 1995). The final results from this factor analyses are shown in Table 2.

Our marital quality measures are very similar to those used by Warner and Kelley-Moore (2012). Our factor structure differed slightly in that we added the close, gets on nerves, and emotional satisfaction variables. We made these changes for three reasons. First, the gets on nerves item was added in Wave 2 and was not available to Warner and Kelley-Moore. Second, with only the original items in the scale, the negative marital quality scale, as derived from a factor analysis using the Wave 2 sample, had only two items. Third, the addition of these items increased the reliability of both marital quality factors in our sample. The changes did not substantively affect the factor solution.

**Physical health.**—Both measures of physical health are self-assessments. Respondents rated their own physical

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**Table 1. Sample Characteristics**

<table>
<thead>
<tr>
<th>Variable</th>
<th>% (N) or mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondent’s physical health (%)</td>
<td>12.6 (172) 33.3 (461) 33.7 (498) 20.4 (333)</td>
</tr>
<tr>
<td>Partner’s physical health (%)</td>
<td>12.4 (173) 31.8 (456) 34.7 (485) 21.2 (350)</td>
</tr>
<tr>
<td>Respondent’s report of sexual frequency in past year (mean, SD)</td>
<td>1.2 (1.8)</td>
</tr>
<tr>
<td>Respondent’s mental health (mean, SD)</td>
<td>2.7 (1.5)</td>
</tr>
<tr>
<td>Partner’s mental health (mean, SD)</td>
<td>2.7 (1.5)</td>
</tr>
<tr>
<td>Respondent’s gender (male), %</td>
<td>49.3 (726)</td>
</tr>
<tr>
<td>Respondent’s age (%)</td>
<td>&lt;65: 31.4 (343) 65–74: 43.9 (674) 75+: 24.7 (447)</td>
</tr>
<tr>
<td>Respondent’s race/ethnicity (%)</td>
<td>White: 85.7 (1,131) Black: 4.6 (133) Other: 9.7 (200)</td>
</tr>
<tr>
<td>Respondent’s education (%)</td>
<td>&lt;High school: 12.6 (233) High school diploma or higher: 87.4 (1,231)</td>
</tr>
<tr>
<td>Respondent’s comorbidity score (%)</td>
<td>0: 17.8 (223) 1: 22.5 (321) 2: 20.2 (322) 3+: 39.5 (598)</td>
</tr>
<tr>
<td>Partner’s comorbidity score</td>
<td>0: 17.5 (223) 1: 23.7 (335) 2: 17.8 (288) 3+: 41 (618)</td>
</tr>
<tr>
<td>Marital duration (%)</td>
<td>&lt;10 years (0): 10.6 (118) 10–39 years: 33.8 (463) 40+ years: 55.6 (883)</td>
</tr>
<tr>
<td>Relationship type (%)</td>
<td>Married: 95.6 (1,415) Cohabiting: 4.4 (49)</td>
</tr>
</tbody>
</table>

**Table 2. Factor Loadings From the Factor Analysis of Marital Quality Among Older Adults**

<table>
<thead>
<tr>
<th>Factor structure</th>
<th>1 (&quot;Positive Marital Quality&quot;)</th>
<th>2 (&quot;Negative Marital Quality&quot;)</th>
<th>Questionnaire items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor Loadings From the Factor Analysis</td>
<td>0.52</td>
<td>0.03</td>
<td>Rely on partner</td>
</tr>
<tr>
<td>Factor Loadings</td>
<td>0.60</td>
<td>0.01</td>
<td>Open up to partner</td>
</tr>
<tr>
<td>Factor Loadings</td>
<td>−0.01</td>
<td>0.74</td>
<td>Partner criticizes</td>
</tr>
<tr>
<td>Factor Loadings</td>
<td>0.02</td>
<td>0.58</td>
<td>Partner makes too many demands</td>
</tr>
<tr>
<td>Factor Loadings</td>
<td>−0.37</td>
<td>0.34</td>
<td>Partner gets on nerves</td>
</tr>
<tr>
<td>Factor Loadings</td>
<td>0.65</td>
<td>−0.05</td>
<td>Happiness of marriage</td>
</tr>
<tr>
<td>Factor Loadings</td>
<td>0.60</td>
<td>−0.06</td>
<td>Emotional satisfaction</td>
</tr>
<tr>
<td>Factor Loadings</td>
<td>0.64</td>
<td>0.06</td>
<td>Feel close to partner</td>
</tr>
<tr>
<td>Factor Loadings</td>
<td>0.38</td>
<td>−0.02</td>
<td>Spend time with partner</td>
</tr>
</tbody>
</table>

**Notes.** Values in bold are greater than 0.30.

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"Sexual frequency was coded as 3 = once a week or more, 2 = two to three times per month, 1 = less than once per month, and 0 = never.

"Mental health and partner’s mental health were coded as 4 = excellent, 3 = very good, 2 = good, and 1 = poor/fair.

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"Physical health."—Both measures of physical health are self-assessments. Respondents rated their own physical

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"Physical health."—Both measures of physical health are self-assessments. Respondents rated their own physical
health as excellent, very good, good, fair, or poor. Partner’s physical health was obtained directly from the respondent’s partner’s interview. Self-rated physical health is a widely used global measure that seems to reflect some underlying dimension of health or trajectory of health that the person perceives. It is quite predictive of later mortality and has been well validated (Benyamini, Idler, Leventhal, & Leventhal, 2000; Ferraro & Kelley-Moore, 2001). The poor and fair categories of both measures were combined for the analysis to ensure adequate cell size (Smith, 2009). The own and partner’s physical health measures are correlated: \( r = .20 \). Because a person’s assessment of their physical health can be affected by their mental health (Mulsant, Ganguli, & Seaberg, 1997), we include a count of major chronic conditions as a control. The NSHAP comorbidity index is a weighted index, based on the Charlson comorbidity index, created from indicators of 15 conditions (Vasilopoulos et al., in press). The categorical version was coded with four categories: a score of 0, 1, 2, and 3 or more. As was the case for the physical and mental health measures, we obtained the value of “partner’s comorbidity score” variable directly from the interview with the partner. The partners’ comorbidity indexes were correlated at .10.

**Psychological health.**—Respondents also rated their own mental health using the excellent, very good, good, fair, or poor scale. The question followed immediately after the question on self-rated physical health and asked: What about your emotional or mental health? Is it excellent, very good, good, fair, or poor? This question reflects the individual’s perception and evaluation of their symptoms as significant (Zuvekas & Fleishman, 2008), in contrast to measures of depressive symptoms or anxiety, which ask about the symptoms directly. As for the physical health measures, we obtained the value of “partner’s mental health” variable directly from the interview with the partner. The poor and fair categories of this measure were also combined for the analysis. The own and partner’s mental health measures were also correlated: \( r = .20 \).

**Partnered sexual behavior.**—We measure frequency of sex with the spouse using two variables (Galinsky, Waite, & McClintock, in press). Respondents were first asked if they had had sex with their spouse in the past year. Those who answered that they had were then asked about their sexual frequency: 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 skewed toward lower frequencies, to ensure adequate cell size we combined the last three categories into a single category of “once a week or more.” We combined the answers to these two questions to yield a measure with four categories: did not have sex with spouse in the past year, had sex once a month or less, had sex two to three times a month, and had sex once a week or more (0 = none to 3 = once a week or more). Each respondent reported on his or her own perception of engagement in the sexual frequency role. Partner reports were correlated at \( r = .72 \).

**Control measures** included gender, age, race/ethnicity, educational attainment, and relationship type and duration, factors that have been associated with marital quality. Age was coded as a categorical variable, with the categories being younger than 65 years old, 65–74, and 75 or older. Race/ethnicity was coded as white, black, or other. Educational attainment was coded as high school diploma or equivalent, or less than that. Marriage duration was coded as less than 10 years, 10–39 years, and 40 years or more. For cohabiting couples, this measure was calculated as the length of time they had been cohabiting. We also included a categorical measure of morbidity.

**Analysis**

Our analysis consisted of two steps. First, we estimated a series of multiple regression models, for both the positive and negative marital quality measures, entering first the sociodemographic and physical health measures, then adding the partnered sex and psychological health measures. The physical health measures were entered into the regressions as categorical variables, with the excellent category as the reference, because preliminary analysis revealed that the associations between physical health and marital quality were not linear. The sexual behavior and psychological health measures were entered as continuous variables because preliminary analysis showed that their associations with marital quality were linear. Second, we tested for mediation by performing Sobel tests with bootstrapping to test the significance of the indirect effects and to check whether the effect of physical health on marital quality was significantly reduced when the mediating variables were added to the model (Preacher & Hayes, 2008). We calculated indirect effects using the products of coefficients method (Baron & Kenny, 1986).

All analyses were adjusted for the complex sampling design and the resulting unequal probability of selection. All analyses were conducted using Stata Release 11 (Stata Corporation, College Station, TX).

**Results**

**Physical Health and Marital Quality**

To examine the association between physical health and marital quality, we turn to the first two columns in Table 3. The first column presents results for the regression of positive marital quality on demographic factors, own and partner’s physical health. The net of sociodemographic controls and partner’s health reveals that those with lower levels of own self-rated physical health tend to report lower levels of
positive marital quality and higher levels of negative marital quality. Older adults in fair/poor health experience lower positive marital quality than those in excellent health, and those in good or fair/poor health experience higher negative marital quality than those in excellent health. The net of sociodemographic characteristics and own physical health, those whose partners are in fair/poor physical health have lower levels of marital quality compared with those whose partners are in excellent physical health. Partner’s physical health is virtually identical for own health and for partner’s health; in each case, those with health at the bottom of the scale or whose partner had health this bad showed levels of positive marital quality that were a third of a standard deviation lower than those with excellent health or with partners in excellent health.

**Sexual Activity and Marital Quality**

To see the association between partnered sexual activity and marital quality, we look at the second column of Table 3. Lower levels of engagement in partnered sex
in the last year are linked to both lower positive marital quality and higher negative marital quality. A one-point increase in the measure of sexual activity, say from reporting no sex at all to reporting sex once a month or less, was associated with an increase in positive marital quality and a decrease in negative marital quality of about 0.12 SD in the respective scale.

**Psychological Well-Being and Marital Quality**

To see the association between psychological health and marital quality, we look at the third and fourth sets of models in Table 3. We find that both one’s own and one’s partner’s mental health are associated with positive and negative marital quality. The associations are in the expected directions for both measures: poorer mental health is associated with lower levels of positive and higher levels of negative marital quality. As we see in Model 4, these associations hold even after controlling for the other type of well-being. Note that the coefficient for own mental health is larger for positive than for negative marital quality (0.26 vs. −0.18), and it is larger for own than for partner’s mental health (0.25 vs. 0.11 for positive and −0.17 vs. −0.08 for negative marital quality).

**Evidence of Mediation: Marital Role As Mediator**

Based on our first hypothesis, we expected to find that physical health would predict marital quality, as would partnered sex, and that the coefficients of physical health in the marital quality regression would be reduced when the sexual activity measure was added. We find strong support for this first hypothesis for own physical health, but only partial support for partner’s physical health, because partner’s physical health only predicted positive marital quality. The change in the coefficient for own fair/poor health in the positive marital quality model, after the sexual activity variable was added, according to the Sobel test, was −0.06 with bias-corrected 95% confidence interval (95% CI: −0.12 to −0.02). The corresponding changes in the negative marital quality model were 0.05 with 95% CI (0.02–0.10) for own good health and 0.06 with 95% CI (0.02–0.11) for fair/poor health. The corresponding change in the coefficient for partner’s fair/poor health in the positive marital quality model was −0.07 with 95% CI (−0.12 to −0.04).

A test of mediation using the product of coefficients method showed that the indirect effect of own physical health on positive marital quality through sexual engagement was significant ($B = −0.15, 95\% CI = −0.26 to −0.06, p < .01$), as was the indirect effect of own physical health on negative marital quality through sexual engagement ($B = 0.14, 95\% CI = 0.06–0.28, p < .01$), and the indirect effect of partner’s physical health on positive marital quality through sexual engagement ($B = −0.14, 95\% CI = −0.26 to −0.05, p < .01$).

**Evidence of Mediation: Psychological Well-Being As Mediator**

Based on our second hypotheses, we expected to find that physical health would predict marital quality, as would psychological health, and that the coefficient of the physical health variables in the marital quality regression would be reduced in significance and magnitude when the psychological health variables were added. We find complete support for this hypothesis for own physical health and own mental health and partial support for partner’s physical health and partner’s mental health. There is also marginal evidence that own mental health mediates the association between partner’s physical health and positive marital quality.

When the own mental health measure was added to the positive marital quality model, the own physical health coefficient for fair/poor health was significantly reduced by −0.36 (95% CI −0.47 to −0.27) and the partner’s physical health coefficient for fair/poor health was marginally significantly reduced by −0.11 (95% CI −0.11 to 0). When the own mental health measure was added to the negative marital quality model, the own physical health coefficient for good health was significantly reduced by 0.18 (95% CI 0.12–0.26) and the own physical health coefficient for fair/poor health was significant reduced by 0.25 (95% CI 0.17–0.35). Partner’s mental health mediated the association between partner’s physical health and positive marital quality. The effect of partner’s health on positive marital quality was reduced when partner’s mental health was added to that model—the fair/poor health coefficient was reduced by −0.18 (95% CI −0.29 to −0.07). Partner’s mental health did not mediate the association between own physical health and positive or negative marital quality.

A test of mediation using the product of coefficients method showed that the indirect effect of own physical health on positive marital quality through own mental health was significant ($B = −0.76, 95\% CI = −0.99 to −0.57, p < .0001$), as was the indirect effect of own physical health on negative marital quality through own mental health ($B = 0.53, 95\% CI = 0.37–0.76, p < .0001$), the indirect effect of partner’s physical health on positive marital quality through own mental health ($B = −0.11, 95\% CI = −0.27 to −0.02, p < .1$), and the indirect effect of partner’s physical health on positive marital quality through partner’s mental health ($B = −0.37, 95\% CI = −0.59 to −0.17, p < .01$).

**Demographic Factors and Marital Quality**

Some final results are worth noting. Consistent with previous research, husbands reported higher positive marital quality than wives (Table 3) (Bulanda, 2011). African American older adults report higher levels of negative marital quality compared with white older adults (Table 3). This finding is consistent with previous research that has found that whites report higher marital happiness than African Americans (Corra, Carter, Carter, & Knox, 2009).
Robustness Checks

We repeated the analysis restricting the sample to those couples who were legally married, dropping those who were cohabiting. The results were unchanged. We also repeated the analysis using multiple imputation, such that all of the married or cohabiting Wave 2 respondents whose partners participated were included in the analysis sample. Again, the results were substantially the same. We next repeated the analysis using a measure of depressive symptoms over the past week instead of self-reported mental health and the results were substantially the same. Finally, we repeated the analysis using a continuous measure of age and alternative categorizations of educational attainment and marriage duration. Again, the results were substantially the same.

We also reestimated all models dropping from the factor scale the items that loaded at less than 0.4 and found all results and interpretations of them robust to this change. Lastly, we estimated models that included caregiving as a predictor, with the intent of testing it as a mediator between physical health and marital quality and found that it did not predict marital quality.

Discussion

The benefits of high-quality relationships, and particularly high-quality marriages, to individuals, families, communities, employers, and society are well known (Bradbury, Fincham, & Beach, 2000; Fincham & Beach, 2010; Waite & Gallagher, 2000). Marital quality can be reduced by health declines in later life (Booth & Johnson, 1994; Yorgason et al., 2008). However, the pathways linking the health of each of the spouses to the health of the marriage are not well understood. This article uses a nationally representative sample of older adult couples to examine how engagement in partnered sex and psychological well-being may explain the link of the physical health of each of the partners to positive and negative marital quality in later life. The NSHAP W2 data provide detailed measures of psychological well-being and marital quality, both pointed out as important gaps in earlier studies (Carpenter et al., 2009). NSHAP W2 also provides information obtained directly from both members of marital and cohabiting dyads.

According to our conceptual framework, the poorer physical health that is often a problem in later life increases the chances of low engagement in sex with one’s spouse and of poor psychological well-being. Both of these factors may themselves be associated with poor marital quality and we argue that they may mediate the association between physical health and marital quality.

This conceptual model specifies that poor physical health affects the psychological well-being of that person and his or her spouse at the same time that it affects the sexual behavior of the couple. These, in turn affect marital quality directly and moderate the effect of physical health on marital quality. This causal order is supported by previous research on some of these links, although reverse causality is possible and, for some of these relationships, probable. Over the long run, marital quality may affect physical and emotional health (Holt-Lunstad & Birmingham, 2008), and psychological well-being may affect sexual function (Carpenter et al., 2009). Longitudinal data on dyads are needed to test this more elaborated conceptual framework. Our framework provides a baseline from which these analyses can be done, when longitudinal data on these dyads are available.

We find that degree of engagement in partnered sex mediates the association of own and partner’s physical health with positive marital quality, and own health and negative marital quality. These results are consistent with our first hypothesis. Consistent with our second hypothesis, we found that own mental health mediates the association between own physical health and both positive and negative marital quality, and between partner’s physical health and positive marital quality. Partner’s mental health mediates the association between partner’s physical health and positive marital quality.

Our finding that the frequency with which one engages in partnered sex mediates the physical health–marital quality association is consistent with the literature. Intimacy and giving and receiving love are important components of the marital role, these goals are often achieved via sexual interactions, and physical health problems can interfere with sexual activity (DeLamater & Moorman, 2007; Karraker et al., 2011; Laumann et al., 2008). Our finding that psychological health mediates the physical health–marital quality association is also consistent with one other study that found such a mediating effect (Yorgason et al., 2008). Our study improves upon Yorgason and colleagues (2008), by including a measure of partner’s self-reported physical and mental health. Our finding that own mental health mediates all three physical health–marital quality links identified, but partner’s mental health only mediates one of the three (partner’s physical health and positive marital quality) might be explained by our measurement of marital quality. Our outcome is the respondent’s own evaluation of the quality of the marriage. Own mental health is a lens through which the individual views both the relationship and the partner, coloring them brighter or darker. This makes it a powerful mediator. Partner’s mental health, on the other hand, only affects own perceptions of marital quality to the extent to which it is externalized and thus affects the partnership.

As individuals age, the means of sexual expression may change, with less focus on vaginal intercourse and more frequent sexual touching (Galinsky, 2012). Our measure of sexual behavior was designed to be quite inclusive; it asks explicitly about any activities with one’s partner that were sexually arousing, noting that they did not need to result in orgasm or include vaginal intercourse. Thus, older adults who reported no or little partnered sex were saying that they were quite disengaged from this activity with their spouse. The men and women in these sexually inactive couples showed lower levels of marital happiness and higher levels...
of dissatisfaction and negative interactions than couples who maintained their sexual engagement, in some form, as they aged.

Strengths and Limitations

This study uses recent data, including a measure of sexual activity with their partner not often available in data sets that also contain data on physical, psychological, and marital well-being, to test theory-based hypotheses. We include an extensive and rich set of measures of both positive and negative dimensions of marital quality. The measures of spouse’s physical and mental health are obtained directly from that person and thus are not subject to bias as they would have been if the respondent reported on his/her spouse’s health. The results can be generalized to married community-dwelling older adults in the United States. These are the strengths of the study. The study also has some limitations.

First, this study’s results cannot be generalized to older adults living in institutions because such people were not included in the survey sample. Second, because this study uses cross-sectional data, we cannot be sure of direction of causality. For example, poor marital quality probably reduces the likelihood of and frequency of sex for the couple, as might poor mental health. And both probably make couple negotiations around the challenges of declining health more difficult and less often successful. Own and partner’s physical and mental health are measured by one question each, and although self-rated physical health has been well validated, the measure of self-rated mental health is less well known and understood. An extension of this line of research might explore the relationship of specific mental health challenges, such as anxiety or depression, and specific chronic diseases such as diabetes, to sexual functioning and marital quality. Longitudinal data on both members of the couple would allow researchers to begin to disentangle causal connections. Third, selection bias may be at work. Unhappily married people are more likely to divorce, and probably more likely to die, and such people would not be in our sample (Waite et al., 2009). Fourth, the processes we study may differ by race or ethnicity, by socioeconomic status, and by gender. Future research might explore these possibilities.

Implications

This study’s results suggest that to protect marital quality in later life, it may be important for older adults to find ways to stay engaged in sexual activity, even as health problems render familiar forms of sexual interaction difficult or impossible. Clearly, older adults’ access to high-quality health care for both physical and emotional issues is key. The results also suggest that those caring for older adults, both physicians and family, be alert to physical changes that may affect mood and emotional state, with implications for sexual and marital functioning. Medical professionals who feel ill-equipped to address intimacy issues with their older patients might refer them to specialists in couples and sexual therapy. At the same time, providing mental health services to older adults who are struggling with physical illness in themselves or their partners may be an important way to protect marital quality. The results also suggest the value of relationship education programs for older couples (Stanley, Markman, & Whitton, 2002).

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