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How Spousal, Friend, and Family Ties Predict Health: Within- and Between-Person Effects Across 16 Years

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Relationships with spouses, family, and friends influence health, yet their effects are often assessed separately. Relationship quality fluctuates over time, and while some couples effectively navigate these ups and downs, others may experience stress and strain. Guided by dyadic stress and support frameworks, we examined how positive and negative spousal, friend, and family ties contribute to subjective health within and across the first 16 years of marriage. We took a within-person approach to examine how ties beyond couples' marriages protect or wear on health, particularly in the years with more marital troubles. Both partners from 373 newlywed couples (199 Black American and 174 White American couples) participated in a longitudinal study and completed questionnaires in Years 1, 3, 7, and 16 of marriage. Dyadic multilevel models showed those with greater spousal responsiveness, lower marital distress, and lower family tension had better subjective health. Husbands' greater family support and lower family tension did not compensate for the negative health effects of low spousal responsiveness, but spousal responsiveness compensated for husbands' less supportive or more tense families. For wives, the combination of both lower spousal responsiveness and family support predicted poorer subjective health, on average, meanwhile wives reported the best health in the years with both more spousal responsiveness and family support. Thus, husbands' spousal ties were more health protective than family ties, whereas wives' health was connected to both spousal and family ties—for better or worse. These findings illustrate gendered health effects in the early to middle years of marriage.

Keywords: dyadic, marriage, longitudinal, romantic relationships, health

It is well-documented that positive social ties afford health advantages while negative social ties confer health risks (Holt-Lunstad et al., 2017; Kiecolt-Glaser & Wilson, 2017; Umberson & Karas Montez, 2010). Married adults tend to have better self-rated health, fewer physical health problems, and lower chronic disease rates than their unmarried peers (Kiecolt-Glaser, 2018; Robles et al., 2014). Likewise, those with high-quality social network ties with friends and family have better subjective well-being and lower morbidity

and mortality than those with lower quality social networks (Holt-Lunstad et al., 2010; van der Horst & Coffé, 2012). However, the quality of people's closest relationships fluctuate across adulthood (Galovan et al., 2023). While some couples effectively navigate these ups and downs, others may experience stress and strain that hinders their health. Although close relationships with spouses, family, and friends bear important health consequences, their effects are often assessed separately.

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Code and data are available upon request from Terri L. Orbuch; this study was not preregistered. Years 1 and 3 data are publicly available on the Inter-University Consortium for Political and Social Research website.

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Using a longitudinal panel study of Black and White American couples in mixed-gender marriages, this study examined how both the positive and negative ties in spouses' marriages, families, and friendships contribute to subjective health within and across the first 16 years of marriage. Doing so allowed us to identify specific aspects of multiple close relationships that influence health. Importantly, we took a within-person approach and examined how close relationship ties were associated with subjective health from year to year, as well as on average across 16 years. In addition to examining their unique effects on subjective health, we also assessed how friend and family ties moderated the effects of spousal relationships on subjective health. This approach allowed us to examine how friend and family ties protect or wear on health, particularly in years with more marital troubles. By assessing positive and negative ties with spouses, family, and friends over time in a racially diverse sample of married couples, the present study provides a nuanced and more comprehensive understanding of for whom and under what conditions close relationships influence health and well-being.

Positive and Negative Ties in Marriage

Dyadic and family stress frameworks, such as the systemic-transactional model (Bodenmann, 2005), marital strength and strain model (Slatcher, 2010), and dyadic biobehavioral stress model (Shrout, 2021), suggest that couples' positive and negative relationship dynamics influence partners' health and well-being. Across these frameworks, partners' relationship dynamics and perceptions are discussed as predictors of self-reported and biological health markers that underlie morbidity and mortality risks (Bodenmann, 2005; Shrout, 2021; Slatcher, 2010). One particularly positive aspect in relationships across these frameworks is perceived partner (or spousal) responsiveness. Spousal responsiveness, or feeling validated, understood, cared for, and loved by a partner, is a fundamental process that helps build and sustain relationships and has been associated with individual and relational benefits (Laurenceau et al., 2004; Reis et al., 2017). Responsiveness has been linked to less pronounced emotional and physiological stress reactivity during marital discussions, healthier cortisol patterns over 10 years, and reduced mortality risks (Farrell et al., 2023; Shrout, Black, et al., 2023; Slatcher et al., 2015). Spousal responsiveness is also beneficial longitudinally, particularly in times with heightened stress. During the COVID-19 pandemic or among those with chronic illness, perceived partner responsiveness was associated with better emotional and physical health 6 and 18 months later (Shrout, Buehler, et al., 2024; Wilson et al., 2017).

In contrast, across these dyadic and family stress frameworks, marital distress has been identified as a notable risk for poor emotional and physical health underlying morbidity and mortality (Robles et al., 2014). Although marriage is associated with better health, distressed spouses are often no better off or fare worse than those who are not married (Holt-Lunstad et al., 2008; Shrout et al., 2021). Marital distress is characterized by heightened negativity, such as feelings of resentment, anger, or irritation, dissatisfying physical and emotional intimacy, and frequent arguments or disagreements (Fiori et al., 2018; Manalel et al., 2019). These negative feelings and marital experiences have been linked to more negative and less positive emotions after marital discussions and delayed wound healing over 2 weeks (Shrout, Renna, et al., 2023), leaving spouses vulnerable to emotional and physical health conditions

(Kiecolt-Glaser & Wilson, 2017). Indeed, marital distress predicted increased depressive symptoms 3 months later (Kiecolt-Glaser et al., 2021) and reduced cellular immune function 2 years later (Jaremka et al., 2013). Given that marital distress increases over time, while partner responsiveness declines, particularly in the early years of marriage (Birditt et al., 2017; Stanton et al., 2019), it is important to address how spouses' health weathers fluctuations across the marital life course.

Positive and Negative Ties in Family and Friendship

Social support and strong positive network ties are also key aspects of dyadic and family stress frameworks. Positive network ties like support from and contact with friends and family are associated with better mental health, physical health, and functional and biological aging (Friedman et al., 2024; Thoits, 2011; Wilson & Marini, 2024). In contrast, a lack of positive network ties, or the existence of negative ties and strain, wears on biological, physical, and mental health over time (Wilson & Marini, 2024). Cross-sectionally, friend support but not family support was associated with lower feelings of loneliness and greater well-being (Chen & Feeley, 2014); in contrast, both friend and family strain were linked to greater loneliness. In another study, greater valuing of family and friend relationships were associated with better subjective health concurrently and greater subjective well-being over 6 and 8 years (Chopik, 2017). Friendship strain, however, predicted a greater number of chronic illnesses over time. Accordingly, positive ties with family and friends have been linked to better health, but family and friend strain consistently takes a negative toll on health and well-being. Indeed, the negative health effects of strained social network ties were stronger than those of a supportive network's health advantages (Wilson & Marini, 2024).

In addition to these direct health effects, dyadic stress theories and research suggest that positive social network ties can protect health during periods of stress (Slatcher, 2010; Thoits, 2011). In work examining older adults' combined social profiles using latent class analyses, those who had supportive ties with their spouses, friends, and adult children had better self-rated and objective health than those with strained relationship ties (Wilson & Marini, 2024). For those in unhappy marriages, having more supportive family and friend ties contributed to better objective measures of health, including faster gait speed and lower inflammation. These findings suggest that positive ties across marriages and social networks are the most salutary, though positive network ties can help offset an unhappy marriage's negative health effects. However, other work has shown that a supportive network did not buffer against low marital quality's negative effects on blood pressure or loneliness (Holt-Lunstad et al., 2008; Hsieh & Hawkey, 2018). These findings suggest that an unhappy marriage has particularly harmful health and well-being effects that other supportive social ties may not alleviate. Parsing out the type of network tie, including support from family and friends separately, and examining their direct and moderating effects could help explain these mixed findings and identify their unique and distinct subjective health benefits.

The Context of Gender

Importantly, the effects of marital, family, and friend ties on health vary by gender (Fiori et al., 2018; Shrout, Wilson, et al., 2024; Wanic & Kulik, 2011). Gender inequality hypotheses suggest that

compared to men, women have less power and are expected to resolve marital issues (Raval & Walker, 2019; Wanic & Kulik, 2011). Women are also more likely to include their relationships in their identities and to monitor and think about their relationships, often due to gendered socialization in American culture (Orbuch et al., 2013; Silverstein et al., 2006). These gendered socialization and inequity hypotheses suggest that relational distress may signal to women that their relationships are troubled, resulting in greater self-rated and objective health consequences (Shrout, Wilson, et al., 2024; Wanic & Kulik, 2011). Indeed, if couples' marital interactions were typically distressing, women had more negative and fewer positive emotions and higher cortisol and inflammation levels than men (Heffner et al., 2006; Shrout, Renna, et al., 2023). However, women also reported more positive emotion and had greater heart rate variability if couples' typical marital interactions were mutually constructive or if their husbands were more responsive (Shrout, Black, et al., 2023). These findings suggest that while women are more likely to experience negative effects, they can experience benefits if partners contribute to their relationships or are responsive.

Although men tend to reap more health and well-being benefits from marriage than women, men also rely more on their partners than their social networks for support (Ferrara & Vergara, 2024). Men's greater spousal reliance may occur because they receive less encouragement to provide care and talk about their emotions, especially outside of marriage (Raval & Walker, 2019). Men are also more likely to rely on their partners' friends than the reverse, and men are less likely to plan friend and family activities than are women (Cerrato & Cifre, 2018; Kalmijn, 2003). For women, family and friend relationships are more central to their lives. Indeed, women's greater friend and family relationship quality were associated with better mental and physical health, fewer chronic health conditions, illness symptom severity, and fewer daily physical limitations (Shane et al., 2021). These stronger ties, however, come at a cost for women because of inequitable norms in which women, but not men, are expected to care for their families and community, which can interfere with their health (Kelly et al., 2020; Nelson et al., 2016). These findings suggest that friend and family ties could have stronger effects—for better or worse—on women's relative to men's subjective health. Given these gender differences, it is important to address how social network ties add to or offset marriage's health benefits. Women's compared to men's more central social networks may both amplify marriage's health benefits and exacerbate the negative health effects of marital distress.

The Present Study

The present study examined how positive and negative ties with spouses, family, and friends predicted subjective health over the first 16 years of marriage. We parsed out the within (WI)- and between (BW)-person effects to address how changes in positive and negative close relationship ties were associated with subjective health from year to year, as well as on average across the 16 years. Capturing these year-to-year fluctuations help illuminate how changes in several types of close relationships contribute to subjective health. In addition to examining their unique effects on subjective health, we also assessed how friend and family ties moderate the effects of marital relationships on subjective health. We addressed how positive friend and family ties strengthen the beneficial effects of marital relationships on subjective health, as well as how positive social ties protect, while negative social ties worsen, subjective health in the years marriages

struggle. Including both these positive and negative ties can help identify key risk and protective pathways connecting close relationships to better health and well-being.

We hypothesized that the positive ties—spousal responsiveness, friend support, and family support—would predict better subjective health from year to year and on average across the 16 years. In contrast, we expected the negative relational ties—marital distress and family tension—would predict worse subjective health from year to year and on average across the 16 years. For moderation effects, we hypothesized that family and friend support would reduce the negative effects of marital distress and enhance the salutary effects of spousal responsiveness on subjective health. In contrast, we expected that negative social network ties of family tension would exacerbate the health risks of marital distress and low spousal responsiveness. Our dyadic and longitudinal sample also allowed us to examine gender differences in the hypothesized associations, as well as whether the effects changed over time. We expected that the effects of spousal, friend, and family ties on subjective health would fluctuate over time and that subjective health would decline. Consistent with past research and theory (Kiecolt-Glaser & Wilson, 2017; McNeil Smith & Landor, 2018), we expected that spousal, friend, and family ties would have stronger health effects for women than men; likewise, we expected that the direct and moderating effects of family and friend ties would be stronger for wives than husbands.

Method

Participants and Procedure

Both partners from 373 newlywed couples (199 Black American and 174 White American) were recruited for the Early Years of Marriage (EYM) Project to participate in a longitudinal study. Eligible couples applied for marriage licenses in Wayne County, Michigan, from April to June 1986 and were followed for the first 16 years of their marriage. Couples were required to be in their first marriage, same-race couples, and for the wife to be younger than 35 years old. All eligible Black American couples and a random sample of White American couples were selected and contacted for participation (65% of the Black American couples and 66% of the White American couples agreed to participate; both members of the couple had to agree to participate). This sample size was determined for parallel investigations of Black couples and White couples, critical to the EYM Project, and to account for expected attrition and divorce over time. At Year 1, the average age for husbands was 26 years old ($SD = 4.15$) and 24 years old ($SD = 3.88$) for wives. Couples were between the first 4 and 9 months of marriage when recruited. The average number of years of education was 13.11 years ($SD = 1.92$) for husbands and 13.13 years ($SD = 1.89$) for wives, the average household income was \$30,933 ($SD = \$16,864$), and 38% of spouses had children or were pregnant at the time (ranging from 0 to seven children). The sample has been compared to a nationally representative sample of first married newlywed individuals in the General Social Survey data from 1980 to 1994 and was found to fit the demographic profile of the county in 1986 (U.S. Census Bureau, 2009). No differences were found by race in the samples regarding income, education, likelihood of cohabitation, parental status, and employment status (Orbuch et al., 2002), suggesting that the EYM Project sample is representative of the U.S. population of first married Black and White newlyweds.

Participants completed face-to-face interviews in their homes with a race-matched interviewer in Years 1, 3, 7, and 16. Partners were interviewed together as a couple and separately. Surveys were completed in tandem with the interviews. Response rates varied across waves, with an average of 80% of the original sample participating (range = 70%–93%; calculated by dividing the total number of husbands or wives interviewed by the number who were eligible to participate). At Year 16, the average response rate was 75% ($n = 528$), which included 320 spouses (130 Black Americans and 190 White Americans). Attrition rates varied across the waves, with 12.5% of the original sample not located in Year 16 (tracking procedures included phone, field, and document archival tracking; see [Orbuch et al., 2002](#)). Attrition was due to refusal to participate, severe illness, death, or loss of contact. At Year 16, people who were deceased, widowed, or severely ill were ineligible (14 couples); four couples could not be located. This attrition rate is consistent with other longitudinal studies, such as the National Survey of Families and Households, which reports a 23% attrition rate for Black Americans and a 15% rate for White Americans from 1987 to 1994. The divorce rate increased from 9% in Year 2 to 46% by Year 16. In the third year of the study, 82% of the couples (149 Black American and 155 White American) were married, and 14% were divorced or separated. In the 7th year of the study, 65% of the couples (107 Black American and 135 White American) were married, and 29% were divorced or separated. By Year 16, 49% of the couples (75 Black American and 108 White American) were married, and 46% were divorced or separated.

Given that half of the sample divorced by Year 16 and that the analytic strategy allows for missing data, we included all data from waves in which respondents were still married to each other. For example, if respondents divorced/separated between the last two waves of the study, we included their data from the previous waves when they were married, but not the final wave since they divorced/separated. This maximized the sample size and allowed us to include data from any wave in which spouses were still married to each other. Data from waves in which respondents were remarried (to someone other than their original EYM spouse) were not included because they did not complete the same measures. Among married couples at Year 16, household income was \$66,754 ($SD = \$19,221$), 96% had children (ranging from 0 to 10 children), and average education level was 14.16 years ($SD = 2.07$) for wives and 14.01 ($SD = 2.02$) for husbands. Institutional Review Boards approved the EYM Project study procedures (University of Michigan) and these secondary analyses (Purdue University IRB-2024-764).

Measures

Marital Relationship Predictors

Spousal Responsiveness. A five-item responsiveness measure ([Orbuch et al., 2002](#)) assessed emotional and affective responsiveness from their spouses each year. Questions asked how often respondents' spouses made them feel especially cared for, good about having their own ideas, good about the kind of person they are, like their life is interesting and exciting, and like they could count on their partner ([Orbuch et al., 2002](#)). Response options ranged from 1 (*often*) to 4 (*never*). The last item was added to the measure for theoretical reasons because it reflects the premise of responsiveness and was originally included in the survey to capture affective and emotional responsiveness. Empirical reasons supported this item's inclusion based on

exploratory factor analyses with these responsiveness items that showed one factor over 1.00 (eigenvalue = 2.38), explaining 47.63% of the variance. The scree plot distribution also reflected one factor, with factor loadings for the five items between .64 and .79; results were consistent in subsequent years. These five items were therefore included and reverse-coded so that higher scores indicate greater perceived spousal responsiveness. Cronbach's α and McDonald's ω on average were .80 and .81, respectively (Year 1 = .72, .73; Years 3 and 7 = .82, .83; Year 16 = .85, .86).

Marital Distress. The six-item negative marital quality measure assessed marital distress ([Fiori et al., 2018](#)). Five items were measured on a scale from 1 (*often*) to 4 (*never*) and assessed how often respondents felt irritated or resentful about things their partner did or did not do; tense from fighting, arguing, or disagreeing with their partner; upset about how they and their spouse were getting along in the sexual part of their relationship; their spouse was upset about how the two of them were getting along in the sexual part of their relationship; and that they were not as good a partner as they would like to be. The sixth item, "When you think about what each of you puts in and gets out of your marriage, how angry do you feel?" was measured on a scale from 1 (*very angry*) to 4 (*not at all angry*). Items were coded so that higher scores indicate greater marital distress. Cronbach's α and McDonald's ω were on average .75 and .74, respectively (Year 1 = .74, .73; Year 3 = .74; Year 7 = .72, .71; Year 16 = .79, .78).

Family and Friend Predictors

Supportive Friend Ties. At each year, respondents were asked how many good friends they could call on for advice or help if they ever needed it and how many good friends they could call on, as a couple, for advice or help if they ever needed it ([Fiori et al., 2018](#)); both items were measured on a scale with the response options 1 (*many*), 2 (*some*), 3 (*one or two*), or 4 (*none*) and were reverse-coded to indicate greater supportive friendship ties. Cronbach's α on average was .71 (Year 1 = .70, Year 3 = .63, Year 7 = .78, and Year 16 = .73); McDonald's ω was not estimated because there were less than three items.

Supportive Family Ties. The item, "As a couple, how many family members and relatives could you call on for advice or help if you needed it?" was used to measure supportive family ties ([Fiori et al., 2018](#)); the scale options were 1 (*many*), 2 (*some*), 3 (*one or two*), or 4 (*none*) and was reverse-coded to indicate greater positive family ties.

Family Tension. Respondents were told that they were going to be asked about things that couples sometimes have differences about and to indicate if it is something they and their spouse have seen things differently on in the past year. Family tension was then assessed with two items that asked if respondents had (1) tension or differences about relationships with their own family and (2) tension or differences about relationships with their spouse's family (i.e., in-laws). Response options were yes (1) or no (0). Responses were then summed, ranging from 0 to 2, with higher scores indicating greater family tension. Because the two items were dichotomous, tetrachoric correlations were conducted (and interpreted like Pearson's correlation; [Lorenzo-Seva & Ferrando, 2012](#)), which showed an average .44 tetrachoric correlation across the four waves (Year 1 = .45, Year 3 = .32, Year 7 = .52, and Year 16 = .48).

Subjective Health

The seven-item subjective health measure assessed respondents' health each year of the study (Shrout et al., 2019). The items included questions about ill health affecting their work, having trouble sleeping or staying asleep, being bothered by nervousness and feeling fidgety or tense, feeling like they were going to have a nervous breakdown, being troubled by headaches, and not feeling healthy enough to do things they would like to do. These items are typically found in subjective health measures to assess how individuals perceive and evaluate their overall health and well-being (e.g., the Short Form Health Survey [SF-36 and SF-12], EQ-5D, and Physical Health Questionnaire; Schat et al., 2005; Ware et al., 1996). Response options ranged from 1 (*all the time*) to 5 (*never*), and items were averaged so that higher scores indicate better health. Cronbach's α and McDonald's ω were .71 and .74, respectively, across the four waves (Year 1 = .68, .68; Year 3 = .69, .68; Year 7 = .69; Year 16 = .79, .80). Additionally, spouses who had serious health issues within the past year had worse subjective health than those without serious health issues at each wave ($t_s = -2.91$ to -7.81 , $p_s = .004$ – $<.001$), providing support for the measure in assessing spouses' perceptions of their own health.

Sociodemographic Predictors and Covariates

Gender and race were assessed at Year 1. Household income at each wave was assessed by asking respondents their annual household income before taxes, ranging from 1 (*none or less than \$2,999*) to 22 (*\$75,000 and over*). To create a continuous variable, incomes were recoded as the category's midpoint, ranging from \$1,500 to \$80,000 (Birditt et al., 2010). Education level was assessed by asking respondents the highest grade in school or year of college they had completed at each wave, ranging from 8 (less than high school) to 17+ (graduate and professional degrees). Number of children was assessed each wave.

Analysis Plan

We examined descriptives and correlations between the main study variables. Then we conducted preliminary dyadic multilevel growth curve models to examine changes in subjective health over the 16 years and differences by gender (wives and husbands) and race (Black and White American), along with their two- and three-way interactions; the interactions with race were not significant and therefore not included in the subsequent analyses ($p_s > .18$). Nonsignificant interactions were removed when interpreting main effects. All preliminary and hypothesis testing models specified that individuals were nested within couples and year was a repeated factor across couples (Kenney et al., 2006). Models included random intercepts using an unstructured covariance structure and accounted for the similarity in the residuals of the partners' variables across the specific time points using an autoregressive structure. Year (1, 3, 7, and 16), gender (wives = 0, husbands = 1), and race (Black = 0, White = 1) were included as fixed covariates. Continuous covariates (education, income, number of children) were grand mean-centered to improve the interpretability of the intercepts. Analyses were conducted in SPSS Version 29, and multilevel models were performed using the MIXED MODELS procedure with restricted maximum likelihood estimation.

To examine hypotheses that WI- and BW-person marital, friend, and family relationships would predict subjective health, we first specified models with the main effects of these relationship variables at the WI- and BW-person levels. At the WI-person level (level 1), the predictors were person-centered so that participants' scores at each wave reflected how much higher or lower their scores deviated from their own average across study. At the BW-person level (Level 2), predictors were grand mean-centered to represent a participant's average score throughout the study. This modeling approach teased apart WI- and BW-person effects of these marital, friend, and family relationship predictors. Then, to test hypotheses that WI- and BW-person effects of these relationship variables would differ by year and gender, we tested their two- and three-way interactions.

To test hypotheses that the friend and family variables would moderate the effects of the marital relationship on subjective health, we tested two-way interactions with each family and friend variable in separate models; we also tested higher order interactions with year and gender to test differences in the moderation. Family/friend moderating effects were tested in separate models to reduce model complexity given the inclusion of WI- and BW-person variables for each family/friend variable and corresponding interaction; however, we tested family/friend moderation in one model as a sensitivity analysis, and the results were consistent. To reduce model complexity when interpreting and probing the interactions, we reported the family/friend moderation in separate models unless otherwise specified. Given the racially diverse sample of Black and White American couples, we explored the moderating effects of race, which were not significant ($p_s > .09$) and thus not included in the results below. Nonsignificant interactions were removed in constructing the final models, except when the respective WI- or BW-predictor interaction was significant to account for their variability and when probing significant lower order interactions. Significant interacting effects were probed at one standard deviation above and below the means for each continuous interacting variable. We used the Benjamini–Hochberg false discovery rate method to account for multiple comparisons (Benjamini & Hochberg, 1995); this method controls the error rate of false positives by considering the number of significant results in a family of tests. As discussed by McDonald (2014), a false discovery rate (FDR) of 0.05 is likely too low for the Benjamini–Hochberg correction, and a rate of 0.10–0.20 is suggested. All associations reported below held after FDR adjustments and fell below an FDR of .15. Tests also held after a more stringent .10 FDR correction. Code and data are available upon request from the fourth author; this study was not preregistered. Years 1 and 3 data are publicly available on the Inter-University Consortium for Political and Social Research website. We report how we determined our sample size, all data exclusions (if any), all manipulations, and all measures in the study.

Results

Descriptive and Preliminary Analyses

Table 1 shows descriptives and correlations, which were mostly in line with hypotheses. Across the four waves, wives' and husbands' greater spousal responsiveness was correlated with better subjective health, whereas greater marital distress was associated with worse subjective health. Correlations between friend support and subjective health were not significant except for Year 16, family

Table 1
Correlations Between Study Variables Within Each Wave

Study variable	1	2	3	4	5	6
1. Spousal responsiveness						
Year 1	.24***	-.42**	.16**	.15**	-.19**	.33**
Year 3	.40***	-.50**	.14*	.13*	.00	.23**
Year 7	.39***	-.46**	.15*	.06	.10	.15*
Year 16	.24**	-.58**	.15	.24**	-.11	.17*
2. Marital distress						
Year 1	-.35**	.37***	-.13*	-.07	.22**	-.30**
Year 3	-.43**	.35***	.05	-.10	.13*	-.31**
Year 7	-.39**	.42***	.02	-.01	.11	-.28**
Year 16	-.49**	.47***	-.15	-.23**	.21**	-.32**
3. Friend support						
Year 1	.03	-.12*	.30***	.31**	-.07	.09
Year 3	.13*	-.05	.37***	.24**	.06	.05
Year 7	-.01	-.08	.29***	.40**	-.09	.00
Year 16	.13	-.23**	.41***	.43**	-.16*	.22**
4. Family support						
Year 1	.06	-.15**	.30**	.23***	-.03	.13*
Year 3	.20**	-.15*	.29**	.24***	.06	.04
Year 7	.13	-.18*	.37**	.18*	-.05	.11
Year 16	.10	-.16*	.44**	.25**	-.13	.20*
5. Family tension						
Year 1	-.11*	.25**	-.06	-.02	.38***	-.20**
Year 3	-.08	.16*	.05	-.03	.30***	-.16**
Year 7	-.16*	.37**	.00	-.11	.51***	-.17*
Year 16	-.01	.20*	.00	.03	.50***	-.13
6. Subjective health						
Year 1	.15**	-.35**	.07	.02	-.23**	.02
Year 3	.25**	-.30**	.08	.01	-.13*	.15*
Year 7	.14	-.25**	-.05	.05	-.11	.04
Year 16	.20**	-.25**	.16*	.09	-.08	.02
Wives <i>M</i> (<i>SD</i>)	3.39 _a (.51)	2.22 _a (.57)	2.52 _a (.64)	3.07 _a (.87)	0.72 _a (.76)	3.73 _a (.60)
Husbands <i>M</i> (<i>SD</i>)	3.44 _b (.49)	2.14 _b (.56)	2.68 _b (.71)	3.14 _a (.84)	0.61 _b (.75)	4.01 _b (.55)

Note. Correlations on the upper diagonal are for wives, and correlations on the lower diagonal are for husbands. Correlations in bold are between wives and husbands. Within each column, means that do not share the same subscript indicate gender differences at $p < .05$.

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

support and subjective health correlations were mixed, and correlations between greater family tension and worse subjective were significant for wives but not husbands. Thus, correlations between the marital variables and health were significant, while correlations of friend and family variables on subjective health were mixed.

Spouses also reported varying family support levels, with an average of 40% of spouses (30%–47% across the waves) indicating many supportive family ties, 33% (29%–37%) indicating some supportive family ties, 25% (22%–33%) with one or two supportive family ties, and 2% (1%–4%) with no supportive family ties. Likewise, on average, 51% (47%–55% across the waves) of spouses reported no family tension, 32% (30%–33%) reported tension about one spouse's family, and 17% (11%–22%) reported tension about both spouses' families. For friend support, an average of 10% (4%–16% across the waves) of spouses indicated many supportive friend ties, 44% (37%–47%) indicated some supportive friend ties, 38% (36%–42%) had one or two supportive friend ties, and 10% (4%–13%) had no supportive friend ties. On average, wives reported higher marital distress and family tension, as well as lower spousal responsiveness, family support, friend support, and subjective health compared to men ($ps < .05$). Dyadic growth models showed subjective health changed over time by gender, $F(3, 950) = 4.76, p = .003$. In Years

1, 3, and 7, but not 16, husbands reported better subjective health than wives ($bs = 0.24$ – $0.28, SEs = 0.04$ – $0.08, ps < .001$). For husbands, their subjective health was higher in Years 1 and 3 than Years 7 and 16 ($bs = 0.12$ – $0.18, SEs = 0.04$ – $0.05, ps < .05$). Wives' subjective health did not change across the 16 years ($ps > .14$).

Effects of Marital, Friend, and Family Relationships on Subjective Health

We examined the WI- and BW-person effects of the marital, family, and friend variables on subjective health (Table 2). Spousal responsiveness (WI and BW), marital distress (WI and BW), and family tension (BW) were significant predictors. At the WI level, spouses had better subjective health in years in which spousal responsiveness was higher ($p = .036$) and marital distress was lower ($p < .001$) than usual. At the BW level, spouses' subjective health was higher if spousal responsiveness was higher ($p = .004$) and marital distress ($p < .001$) and family tension ($p < .001$) were lower across the 16 years. WI- and BW-person friend and family support did not predict subjective health ($ps > .06$). Subjective health was higher for husbands compared to wives ($p < .001$) and for those with greater household incomes ($p < .001$).

Table 2*Coefficients b (SE) or F for Main Effects Predicting Subjective Health*

Predictor type	Within-person	Between-person
Spousal responsiveness	0.10* (0.05)	0.14** (0.04)
Marital distress	-0.17*** (0.04)	-0.25*** (0.04)
Friend support	-0.03 (0.03)	0.02 (0.03)
Family support	0.05 (0.02)	0.04 (0.03)
Family tension	-0.002 (0.02)	-0.14*** (0.03)
Gender	0.21*** (0.03)	
Race	-0.07 (0.04)	
Year	$F(3, 561) = 1.18$	
Household income	0.01*** (0.00)	
Education	0.01 (0.01)	
Number of children	-0.002 (0.01)	

Note. Significant effects are in bold. Within-person effects demonstrate fluctuations from year to year; between-person effects demonstrate average effects across the years. Gender: wives = 0, husbands = 1. Race: Black = 0, White = 1. SE = standard error.

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

Next, we tested if the marital, friend, and family predictors' effects differed by gender or year (Table 3). The effects of BW-person family support and tension differed by gender ($ps < .05$; Figure 1A). Husbands had better subjective health than wives, regardless of family support ($bs = 0.14$ – 0.27 , $SEs = 0.04$, $ps < .001$) or family tension ($bs = 0.13$ – 0.28 , $SEs = 0.04$, $ps < .01$). Wives' ($b = 0.10$, $SE = 0.04$, $p = .01$), but not husbands' ($p = .76$), higher average family support predicted greater subjective health. Husbands' ($b = -0.09$, $SE = 0.04$, $p = .02$) and wives' ($b = -0.19$, $SE = 0.04$, $p < .001$) higher family tension predicted poorer subjective health, with greater differences in wives. There were no other significant interactions with gender or year ($ps > .34$).

Moderation of Friends and Family on the Links Between Marriage and Subjective Health

We next tested how relationships with friends and family moderated marital effects on subjective health; we also tested their higher order interactions with gender and year (Table 3). Friend support did

Table 3*Coefficients for Significant Moderating Effects Predicting Subjective Health*

Interaction	F, p
Within-person	
Family Support $\times$ Spousal Responsiveness $\times$ Gender _a	$F(1, 1416) = 8.01, p < .001$
Between-person	
Family Support $\times$ Gender _b	$F(1, 955) = 5.44, p = .02$
Family Tension $\times$ Gender _b	$F(1, 943) = 4.04, p = .045$
Family Support $\times$ Spousal Responsiveness $\times$ Gender _a	$F(1, 1132) = 4.52, p = .03$
Family Tension $\times$ Spousal Responsiveness $\times$ Gender	$F(1, 1082) = 8.24, p = .004$

Note. Effects with the same subscript indicate interactions were tested in the same model. Both two-way interactions were qualified by three-way interactions. Only significant interactions are shown; all interaction effects are reported in text.

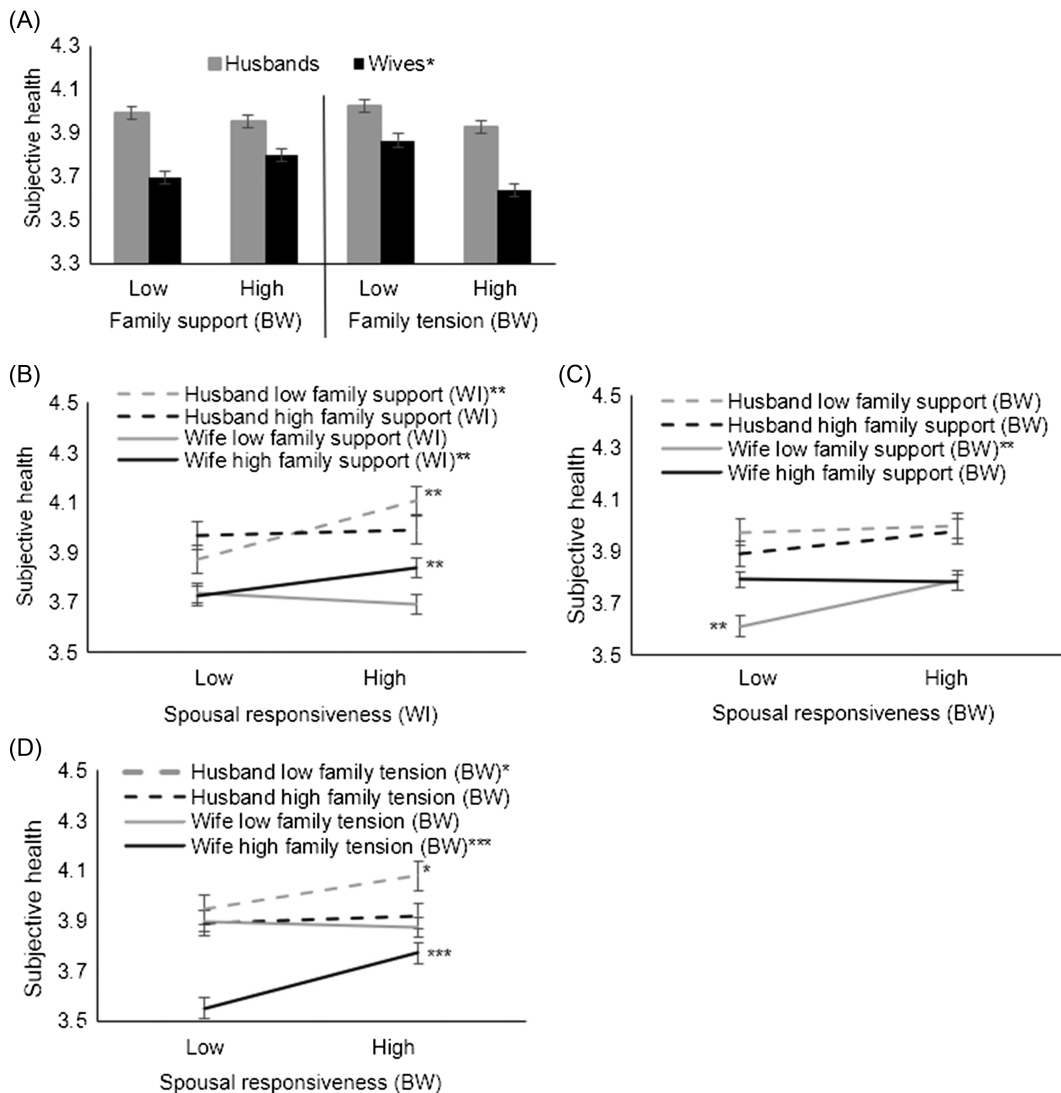
not moderate the effects of spousal responsiveness or marital distress on subjective health ($ps > .20$), nor were the effects different by gender or year ($ps > .10$).

For family ties, results revealed three-way interactions: WI- and BW-person family support, spousal responsiveness, and gender (Figures 1B and 1C) and BW-person family tension, spousal responsiveness, and gender (Figure 1D). At the WI level, husbands had better health than wives regardless of spousal responsiveness and family support ($bs = 0.14$ – 0.33 , $SEs = 0.04$ – 0.06 , $ps < .01$). In the years that husbands had lower than usual family support, subjective health was better if they perceived more spousal responsiveness ($b = 0.23$, $SE = 0.08$, $p = .01$). Husbands' subjective health did not change based on spousal responsiveness if they reported higher than usual family support ($p = .71$). For wives, subjective health was highest in the years that they reported both higher responsiveness and family support than usual ($bs = 0.13$ – 0.17 , $SEs = 0.05$ – 0.08 , $ps < .05$). Wives' subjective health did not change based on spousal responsiveness if they reported lower than usual family support ($p = .40$). Thus, spousal responsiveness helped compensate for husbands' lower than usual family support, whereas both higher than usual responsiveness and family support contributed to wives' better health.

At the BW-person level, similar to WI-person effects, husbands reported better subjective health than wives regardless of their average spousal responsiveness or family support ($bs = 0.12$ – 0.37 , $SEs = 0.04$ – 0.06 , $ps < .05$). Husbands' health, however, did not differ based on average family support or spousal responsiveness levels ($ps > .06$). Wives' subjective health was poorest if their average perceived spousal responsiveness and family support were both lower ($bs = 0.14$ – 0.22 , $SEs = 0.04$ – 0.07 , $ps < .01$). Among wives with high family support, subjective health remained high and did not change based on spousal responsiveness ($p = .58$), suggesting family support buffered low responsiveness's negative effects. For wives with lower family support, subjective health was better if they had higher spousal responsiveness ($b = 0.22$, $SE = 0.07$, $p = .002$). Wives' higher average family support or spousal responsiveness compensated for their lower family support or spousal responsiveness.

For the BW-person interaction among family tension, spousal responsiveness, and gender, among husbands ($bs = 0.14$ – 0.19 , $SEs = 0.04$ – 0.08 , $ps < .05$), and compared to wives ($bs = 0.17$ – 0.31 , $SEs = 0.06$, $ps < .01$), husbands with lower family tension and higher spousal responsiveness had the best subjective health. Husbands with high family tension had similar health regardless of their spousal responsiveness ($b = 0.05$, $SE = 0.09$, $p = .59$). Wives with both high family tension and low spousal responsiveness reported the worst health, whereas wives with low family tension had the best health regardless of their spousal responsiveness ($bs = -0.11$ to -0.27 , $SEs = 0.06$, $ps < .05$). Among wives with lower family tension, subjective health remained higher and did not change based on spousal responsiveness ($b = 0.001$, $SE = 0.11$, $p = .99$), suggesting low tension buffered the negative health effects of low responsiveness. However, among wives with higher family tension, those with more responsive partners had better health than those with less responsive partners ($b = 0.24$, $SE = 0.08$, $p = .004$). Thus, the combination of both higher responsiveness and lower family tension was important for husbands' better subjective health, whereas wives' lower family tension was key for wives' better subjective health. The WI-person interaction was not significant for wives or husbands ($ps > .44$).

Figure 1
Visual Depictions of the Interactions Predicting Subjective Health



Note. Panel A: Family support BW and family tension BW by gender. Panel B: Spousal responsiveness WI, family support WI, and gender. Panel C: Spousal responsiveness BW, family support BW, and gender. Panel D: Spousal responsiveness BW, family tension BW, and gender. Error bars are ± 1 standard error. BW = between-person; WI = within-person.

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

Discussion

In this longitudinal study, we applied dyadic and family stress and support frameworks to examine how close relationships with spouses, family, and friends predict subjective health during the first 16 years of marriage. We took a WI-person approach to examine how changes in positive and negative close relationship ties were associated with subjective health from year to year and on average across the 16 years. Importantly, we examined how positive family and friend ties protect, while negative ties exacerbate, spouses' health in the years marriages struggle. As expected, wives' and husbands' subjective health was better on average or in the years with greater spousal responsiveness, lower marital distress, and lower family tension. The combination of

spousal responsiveness and more family support or less family tension predicted better subjective health. In contrast, lacking family support or experiencing more family tension exacerbated the negative health effects of low responsiveness—especially for wives. These findings illustrate how multiple positive close relationship ties combine to carry health advantages, while the lack of positive ties or presence of negative ties takes a toll on subjective health over the early to middle years of marriage, most notably for women.

At the WI-person level, wives' and husbands' subjective health was better in the years with more spousal responsiveness and less marital distress than they typically experienced across the 16 years. At the BW-person level, spouses' subjective health was better, on average, among those with greater spousal responsiveness and lower

marital distress and family tension. Husbands also reported better subjective health than wives each year, except for Year 16. Extending previous work showing the health impact of marital and social network ties (Holt-Lunstad, 2018; Holt-Lunstad et al., 2010; Robles et al., 2014), these findings demonstrate their simultaneous health effects and provide evidence that both marital and family dynamics matter for health. Moreover, fluctuations in both positive and negative marital dynamics corresponded to changes in subjective health across the first 16 years of marriage. Accordingly, this study illustrates the accompanying health effects of marriages' ups and downs.

Of the various social network ties, family tension was a particular health detriment for wives and husbands. In contrast, family support was linked to better subjective health for wives but not husbands. These findings are consistent with work showing that negative network ties often outweigh the health benefits of positive network ties (Wilson & Marini, 2024). Family support may have protected wives but not husbands because women are more likely to have family-focused networks (Fiori et al., 2018), creating opportunities for their families to provide support. In contrast, husbands may rely more on their wives than broader networks for support (Ferrara & Vergara, 2024). In addition to wives reporting worse health than husbands, more negative and less positive family ties took a stronger toll on wives' health than husbands. These gender differences align with theoretical and empirical work suggesting that family stress has harsher effects on women than men, given gendered socialization and power inequities that expect women to manage family issues (Raval & Walker, 2019; Silverstein et al., 2006).

The findings also showed that family tension and support moderated the effects of spousal responsiveness on subjective health. At the BW-person level, for husbands with low family tension, their average subjective health across the 16 years was better if they perceived their wives as more responsive. Husbands' average health was no different based on spousal responsiveness if they reported high family tension. At the WI-person level, in the years with less family support than usual, perceiving their wife as more responsive than usual helped protect husbands' subjective health that year. Together, these findings suggest that spousal responsiveness compensated for husbands' low family support or high family tension, but husbands' supportive or less tense families did not compensate for low spousal responsiveness. This work is consistent with research demonstrating that husbands rely on their spouses and are less likely to turn to other network members for support (Raval & Walker, 2019). The findings highlight the importance of husbands feeling cared for and loved by their spouses, particularly in the years with less family support than usual.

At the BW-person level for wives, having more average supportive and less tense families were protective. Among wives with higher family support or lower family tension, average subjective health across the 16 years was similar regardless of their husbands' responsiveness. Therefore, even if wives felt less loved and cared for by their husbands, their strong family ties helped wives maintain better average health. However, results also revealed the average health detriments of having less positive and more negative spousal and family ties. Wives with low spousal responsiveness and low family support or high family tension reported the poorest average subjective health across the 16 years, although, among wives with less supportive and more tense families, subjective health was better for those with greater spousal responsiveness. These BW-person findings illustrate the average health benefits of spousal responsiveness for wives with more negative and less positive family ties.

Yet, the combination of less positive spousal and family ties took a toll on wives' average subjective health.

At the WI-person level, wives' subjective health was greatest in the years that they reported both higher spousal responsiveness and family support than usual. These findings demonstrate the year-to-year health benefits of having more positive spousal and family ties for women. In contrast, family support did not offset the health detriments of wives' lower than usual perceived spousal responsiveness, nor did responsiveness protect health in the years with less than usual family support. These findings support the interpersonal orientation hypothesis that women's close relationships have strong health implications, for better or worse (Orbuch et al., 2013; Silverstein et al., 2006). Indeed, the present study revealed a seemingly double-edge sword for women. The presence of positive ties in both their marriages and families were linked to better than usual health. However, positive ties in only their marriages or families—but not both—did not provide a health advantage from year to year. Women may therefore reap the most health benefits in the years that their marital and family relationships are strong.

The correlations showed small associations between greater friend support and better subjective health in Year 16, although friend support did not predict subjective health in the full models, nor did it moderate links between the marital relationship and subjective health. These findings may align with previous research showing that friendship quality had stronger health effects with age (Chopik, 2017). In the current project, couples began the study in their mid-20s and continued through the first 16 years of their marriage. It is possible that family and marital relationships have stronger effects on subjective health than friendship ties during these early to middle years of marriage, but friendship's health implications become stronger as people grow older. Further, although not assessed in the present study, negative friendship ties have been found particularly consequential for health (Chopik, 2017). Assessing friendship quality and strain may be important considering the more voluntary nature of friendships. More affective friendship measures that capture feelings of closeness and/or responsiveness might also be more significant to subjective health during these years.

Family and friend ties did not mitigate or exacerbate the negative health effects of marital distress. Compared to positive marital ties, negative ties tend to have stronger health effects (Robles et al., 2014). Romantic relationships have distinct and unique health effects, and romantic partners are typically a person's closest and most central relationship (Pietromonaco & Collins, 2017). Experiencing greater distress in spouses' most important and central relationship may carry harsh health effects not offset by family and friend ties. Further, although there were gender differences in how marital and family ties interacted to influence subjective health, there were no gender differences in how marital ties uniquely related to health. Of note, health effects of marital distress did not differ between wives and husbands, despite hypotheses expecting harsher effects on wives' health. Our marital distress measure captured particularly heightened negativity, including resentment, anger, irritation, arguments, and dissatisfying physical and emotional intimacy. Experiencing more distress than usual across several emotional and physical marital domains may be equally punitive for men and women.

Preliminary analyses also showed wives' subjective health did not change across the 16 years and that they reported worse health than husbands in each year except Year 16. These findings are consistent with research showing that women report poorer emotional and

physical health than men (Kiecolt-Glaser & Wilson, 2017). It is possible that wives reported worse subjective health because women, particularly women of color, have less power and are expected to take on more roles caring for others (Raval & Walker, 2019; Wanic & Kulik, 2011). Even when women work outside the home, they are more likely than men to do the housework, care for children and aging parents, and engage in relationship maintenance behaviors (Hess, 2020). In our sample, wives also reported lower spousal responsiveness, family support, and friend support, as well as greater marital distress and family strain than husbands. These extra demands and inequitable burdens can take a toll not only on women's close relationship perceptions but also their health (Kelly et al., 2020; Nelson et al., 2016). Correlations between spouses were also relatively modest and showed fluctuations in how strongly perceptions of their marital and social ties aligned across the 16 years. It was surprising that spouses' subjective health was largely uncorrelated, but it is possible that wives' consistently poorer and unchanged subjective health contributed to the weak or nonsignificant spousal correlations.

Implications

This study has implications for dyadic and family stress frameworks and research on how people's close relationships contribute to health. Dyadic and family stress posit that partners' relationship dynamics and perceptions influence self-reported and biological health markers that underlie morbidity and mortality risks (Bodenmann, 2005; Shrout, 2021; Slatcher, 2010). Likewise, partners' broader social networks can contribute to health uniquely or protect against the negative health effects of marital distress (Thoits, 2011). The present study revealed that changes in both positive and negative ties in marital and family relationships predict subjective health during the first 16 years of marriage. These findings are important as people tend to experience more health problems and disease risks in adulthood (Hoppmann & Gerstorf, 2014). With expected health declines, this study illustrated how positive and negative spousal ties—responsiveness and distress—and family ties, support and tension, were key risk and protective pathways connecting relationships to health. Importantly, these spousal and family ties also worked together to exacerbate negative health effects, offset such harmful effects, and amplify health benefits, highlighting the importance of considering their synergistic relationships.

These findings also have important practical implications. There may be years in which marital ties are strong, but family ties are weak and vice versa. Less positive spousal and family ties were particularly harmful for wives' health, and network support did not offset the negative health effects of marital distress for wives or husbands. It is important for policy and programming to invest in dyadic- and family-level prevention and intervention efforts to help couples navigate these ups and downs. Educational prevention programs aimed at teaching and strengthening both spousal and family dynamics may help promote health and offset the negative social tie-related health detriments. Further, in addition to couple and family therapy, health care providers should go beyond marital status and screen for relational and family distress. When appropriate, providers can link couples and families to resources and counseling. Asking questions about partners, families, and social networks is key to understanding support needs and strain. Embedding close relationships within the health care system provides space for people to

express their concerns, ask professionals for help, and receive necessary referrals. It is also essential that insurance companies cover or reimburse couple and family educational workshops/therapy to make them more accessible and affordable, as well as less stigmatized (Shrout, Wilson, et al., 2024; Williamson et al., 2019). Our findings suggest that both spousal and family relationships matter for health in the early to middle years of marriage. Reducing barriers to couple and family programming can provide couples with resources to strengthen these relationships, particularly in the challenging years.

Strengths, Limitations, and Future Directions

One strength of this study is the dyadic, representative, and racially diverse sample of couples in mixed-gender marriages (Orbuch et al., 2002). This allowed us to examine gender effects that showed both spousal and family relationships had strong effects on wives' health. Likewise, we assessed how subjective health was related to several important and close relationships, which revealed that both positive and negative spousal and family ties are important for health. The longitudinal design with four waves across the first 16 years of marriage allowed us to parse out WI- and BW-person effects; we identified spousal responsiveness and marital distress as important subjective health predictors on average and within a given year, along with the moderating effects of both family support and tension. These methods offered a vital window into spouses' close relationships to demonstrate the health benefits of positive ties and costs of negative ties in the early to middle years of marriage.

A limitation of this study is that all couples were mixed-gender and spouses identified as women or men. Longitudinal work including same-gender couples and gender-diverse partners is important for inclusivity and to tease apart gender effects related to a person's own and their partner's gender. The panel study focused on Black and White American couples. Research is needed with samples across racial groups, multiracial couples, and cultures. Given that these couples were all married in 1986 and in their early years of marriage, these findings may not generalize to all couples. Although societal changes have occurred, gendered socialization and inequities are still prevalent and influence marriage's health impact (Shrout, Wilson, et al., 2024). Effects were fairly small. It would be useful for research to examine and replicate effects, particularly using newer, clinically relevant spousal responsiveness measures (Crasta et al., 2021). The magnitude of correlations varied over time. The results may reflect developmental changes in the marital life course and attrition effects since only married couples were included in our analyses. Research is needed to compare social network health effects among divorced, separated, and single adults. Longitudinal research should go beyond the number of supportive family and friend ties to capture relationship quality in addition to spousal ties. It is possible that a measure reflecting the quality of friend ties could have more impact on health than our measure which captured the number of good or supportive friend ties. Our family tension measure assessed tension about relationships with each spouse's family. It is important to extend these findings by examining other aspects of negative family ties, such as family conflict and strained family relationships. We used a self-report health measure, which may be biased and subject to social desirability, though these measures are robust predictors of objective health indicators (Idler & Benyamini, 1997; Jylhä, 2009). Assessing how marital, family, and friend ties are associated with self-reported and biological health longitudinally is an

important, though challenging, next step to address pathways connecting close relationships to health.

Conclusion

This longitudinal panel study demonstrated how positive and negative close relationship ties—most notably with spouses and family—predict subjective health in Black and White American couples in the first 16 years of marriage. Spouses with greater responsiveness, lower marital distress, and lower family tension had better subjective health. For husbands, spousal ties were more protective of health than family ties, whereas wives' health was connected to both spousal and family ties—for better or worse. Indeed, the lack of positive spousal and family ties was related to health detriments on average for women, while the presence of both positive spousal and family ties was salutary from year to year. Accordingly, this research revealed how multiple aspects of spousal and family relationships contribute to health in gendered ways.

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