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The Importance of Spousal Education for the Self-Rated Health of Married Adults in the United States

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Abstract Education's benefits for individuals' health are well documented, but it is unclear whether health benefits also accrue from the education of others in important social relationships. We assess the extent to which individuals' own education combines with their spouse's education to influence self-rated health among married persons aged 25 and older in the United States ($N = 337{,}846$) with pooled data from the 1997–2010 National Health Interview Survey. Results from age- and gender-specific models revealed that own education and spouse's education each share an inverse association with fair/poor self-rated health among married men and women. Controlling for spousal education substantially attenuated the association between individuals' own education and fair/poor self-rated health and the reduction in this association was greater for married women than married men. The results also suggest that husbands' education is more important for wives' self-rated health than vice versa. Spousal education particularly was important for married women aged 45–64. Overall, the results imply that individuals' own education and spousal education combine to influence self-rated health within marriage. The results highlight the importance of shared resources in marriage for producing health.

Keywords Education · Spousal education · Spouse · Marriage · Gender · Self-rated health

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Countless studies document an inverse association between one's own educational attainment and adverse health outcomes (Mirowsky and Ross 2003). Prior research also consistently finds that social relationships, especially close personal relationships, like marriage, have important health consequences (Smith and Christakis 2008; Umberson and Montez 2010; Wood et al. 2007). However, few studies move beyond the individual level to examine whether a spouse's education influences an individual's health (Kravdal 2008; Monden et al. 2003). For various reasons, marriage motivates couples to share material and non-material resources to improve their own and their partner's well-being (Becker 1991; Jacobson 2000; Monden et al. 2003; Skalická and Kunst 2008). Marriage is the most important social relationship most adults choose to maintain and the household is the most immediate context in which social factors influence health (Bartley et al. 2004; Hughes and Waite 2002; Ross et al. 1990).

The idea that education is an inter-individual resource—as well as an intra-individual resource—within the context of marriage has profound implications for health disparities research because it suggests that education's influence on health extends beyond the individual level (Monden et al. 2003). Social relationships provide a means by which resources such as education can combine with that of others to benefit or disadvantage individuals' health. Consequently, social relationships may extend education's role as a "fundamental cause" of health (Link and Phelan 1995; Phelan et al. 2004).

This article examines the link between spousal education and self-rated health among married adults in the United States. The overall purpose is to clarify how one's own education combines with their spouse's education to influence health. The analyses are organized around the idea that marriage provides a critical context in which husbands and wives' resources spillover to influence each other's health (Jacobson 2000). We address four interrelated questions. First, is a spouse's education associated with self-rated health, net of one's own education? Evidence for this association would suggest that the education-related resources of others in the household have spillover effects. Second, to what degree does the association between one's own education and self-rated health change when a spouse's education is controlled? Third, if an association exists between spousal education and self-rated health, are there gender differences in the association between spousal education and self-rated health? This question specifically evaluates whether gender-based asymmetry exists in the magnitude by which spousal education influences an individual's health. Finally, do any of the associations outlined above vary by age?

Background

Conceptual Framework

Education is a robust determinant of health because it uniquely shapes an individual's life chances and fundamentally alters the way people view themselves and relate to the world around them (Baker et al. 2011). Given that most people complete their schooling relatively early in life, educational attainment significantly

shapes other dimensions of socioeconomic status such as labor market outcomes and earnings (Hout 2012; Mirowsky and Ross 2003). In addition to its role as an occupational credential, educational attainment improves general cognitive abilities associated with memory acquisition, information processing, decision-making, and critical thinking (Baker et al. 2011) and as individuals proceed through the educational system, they gain generalizable knowledge, develop broadly useful skills, and build confidence in their ability to control their lives (Mirowsky and Ross 2003).

Moreover, the personal relationships that people develop while in school presumably alter both the composition and dynamics of their broader social network. Social networks may indirectly influence one's health via social and economic exposures that are proximate determinants of health including marriage market constraints, access to information, socioeconomic achievement processes, social control, and the receipt of social support (Christakis and Fowler 2009; DiMaggio and Garip 2012; Granovetter 1973; Kalmijn 1998; Lin 1999). Social networks also directly influence health because they may expose individuals to various environmental health risks such as second-hand smoke (Christakis and Fowler 2008) and because they are a vector for communicable disease transmission (Adimora and Schoenbach 2005; Smith and Christakis 2008). In sum, education clearly represents a fundamental cause of health because it provides individuals with a highly flexible set of material and non-material resources that allow them to avoid health risks and accumulate health advantages over their life course (Brown et al. 2012; Link and Phelan 1995; Phelan et al. 2004, 2010).

Health researchers usually think of education as an individual-level resource. However, education likely is both an intra-individual and inter-individual health resource within social relationships. Social relationships, especially close personal relationships, are a conduit for the exchange of material and non-material resources that directly and indirectly influence health (Smith and Christakis 2008; Umberson and Montez 2010). Education likely plays an important, but often underappreciated, role in this process because it fundamentally shapes the socioeconomic, psychosocial, and socio-behavioral resources that individuals have available to exchange. Although people exchange resources in varying degrees in most social relationships, there are several good reasons to suspect that exchanges are particularly apt to occur within marriage. First, marriage is the most important social relationship that the majority of adults enter and the household is the most proximate and important social context in which individuals are embedded (Bartley et al. 2004; Hughes and Waite 2002). These attributes are important because they ensure that married couples routinely interact with one another and people must interact with one another in order to exchange resources. Second, the well-defined social, cultural, and institutional norms associated with marriage set it apart from other adult social relationships and ultimately constrain individual behavior and inform the social roles that each spouse takes-on within the relationship (Nock 1995; Umberson 1987, 1992; Waite and Gallagher 2001).

Finally, these factors act in concert with the socio-emotional dynamics of the marital relationship to facilitate educational spillovers between spouses. Married couples share very strong social, economic, legal, and emotional ties and these

intimate attachments inherently motivate spouses to pool their respective material and non-material resources in an attempt to improve each other's well-being (Becker 1991; Jacobson 2000; Monden et al. 2003; Skalická and Kunst 2008). Since the resources individuals obtain via their own education have enormous direct and indirect health consequences, married couples likely pool and/or exchange the resources gained via each spouse's education in an attempt to maximize household well-being. For better or worse, this implies that pooling and/or exchanging resources within marriage transforms each spouse's education from a solely *individual*-level resource into a *household* or *family*-level resource. Taken together, the social, economic, and interpersonal dynamics outlined above suggest that the ability of married persons to maximize their own health is contingent on resources acquired via their *own* and their *spouse's* education.

Gender Differences

Gender, however, may modify the extent to which the processes outlined above influence health. Given important gender differences in the influence of marriage (Waite and Gallagher 2001; Wood et al. 2007) and education (Ross et al. 2012; Ross and Mirowsky 2010) on health, it is likely that married men and women differ with respect to the resources that they obtain via their spouse's educational attainment. Research consistently demonstrates that married persons are healthier than their never married, widowed, or divorced counterparts (Waite and Gallagher 2001; Wood et al. 2007). Although selection into marriage by persons who are healthier and have more socioeconomic resources partially explains the positive association between marriage and health, the evidence generally suggests that a non-trivial portion of the marriage-health association actually is due to the health benefits directly associated with marriage (Wood et al. 2007).

Marriage confers social, economic, psychological, and behavioral resources that allow individuals to either delay or altogether avoid deleterious health outcomes, but the relative importance of these resources for health differs by gender (Carr and Springer 2010; Kiecolt-Glaser and Newton 2001; Waite and Gallagher 2001; Wood et al. 2007). Specifically, women appear to gain fewer health benefits from marriage than do men (Wood et al. 2007). This probably occurs because marriage provides men and women with different resources. For example, married persons typically have more economic resources than their unmarried counterparts for multiple reasons including tax policies that favor married households, income pooling among spouses, and economies of scale within the household (Waite and Gallagher 2001). The economic resources associated with marriage are important especially for married women's health because women typically earn less than men (Waite and Gallagher 2001).

Additionally, the social and emotional support that spouses provide each other reduces psychological distress and this has positive effects on mental and physical health (Ross et al. 1990; Waite and Gallagher 2001). Men as a whole report that they receive less social support than do women (Turner and Marino 1994). Thus, the socio-emotional resources that marriage provides presumably are more important

for married men's than married women's health because men are less likely to receive this particular resource via other social relationships.

Finally, marriage influences health because it protects individuals against behavioral health risks (Ross et al. 1990; Waite and Gallagher 2001). The behavioral resources that marriage confers appear to be more important for men's than women's health (Lillard and Waite 1995) because the tendency to engage in risky health behaviors is higher overall among men than women (Byrnes et al. 1999; Read and Gorman 2010). Consequently, marriage may be especially important for married men's health because spouses, but particularly wives, monitor and/or regulate each other's behavior in an attempt to discourage risky and/or unhealthy behaviors (Umberson 1992; Umberson et al. 2010).

Therefore, marriage appears to provide women with more socioeconomic resources than they would have otherwise. In contrast, men primarily appear to benefit from marriage because it confers behavioral and psychological resources. Similar patterns may also exist for education. Although the evidence concerning gender differences in the link between education and health is mixed (Read and Gorman 2010), some research suggests that education influences women's health more than men's health (Ross et al. 2012; Ross and Mirowsky 2010). Education may benefit men's health primarily because it confers socio-behavioral resources, whereas education may benefit women's health primarily because it confers socioeconomic resources (Ross et al. 2012). This presumably creates a situation in which married men benefit primarily from the non-material resources provided via a spouse's education, whereas married women benefit primarily from the material resources provided by a spouse's education. This argument is similar to those advanced by resource substitution theory, which states that when individuals lack a given type of resource, the other resources that they have fill the void to become more important determinants of health (Ross and Mirowsky 2006, 2010). This theory applies to the resources possessed by individuals, but here the same general process presumably occurs between spouses.

Age Differences

Age variations in the association between spousal education and health may also exist. It is unclear whether the relationship between spousal education and health varies by age, but it is clear that the influence of individuals' own education on health does vary by age. Some studies find that the positive association between individuals' education and self-rated health increases with age (Lynch 2003; Mirowsky and Ross 2005; Ross and Wu 1996). This pattern is consistent with the cumulative (dis)advantage hypothesis, which predicts that the health (dis)advantages associated with individuals' own educational attainment accumulate over the life course (Ross and Wu 1996).

Alternatively, other studies find that educational disparities in self-rated health and other self-reported health outcomes are smallest in early adulthood, widen considerably throughout midlife, and begin to converge once again at older ages (House et al. 1990, 1994, 2005). This pattern is consistent with the age-as-leveler hypothesis, which predicts diminishing health disparities at older ages. This occurs

either because the biological aging process reduces the influence of socio-environmental factors, like education, on health or because individuals who belong to socioeconomically disadvantaged groups have a much higher risk of dying in early and middle adulthood than their more advantaged counterparts (i.e., mortality selection).

Most studies present the cumulative advantage and age-as-leveler hypotheses as competing explanations, but these two processes may occur simultaneously within populations. According to this view, the cumulative advantage hypothesis describes how socioeconomic factors influence health trajectories among *individuals*, whereas the age-as-leveler hypothesis describes how these individual health trajectories accumulate to shape health disparities within *populations* (Dupre 2007). Dupre's (2007) findings imply that the health (dis)advantages of education within marriage may accumulate with age; that is, spousal education may exhibit a stronger association with the disease onset (incidence) and survival among older individuals. At the same time, the association between spousal education and health may appear to weaken at the oldest ages because mortality selection strongly influences prevalence-based health estimates.

Previous Research

Emerging research, primarily from European populations, generally supports the ideas outlined above concerning the link between spousal education and health. Indeed, several recent studies consistently document an inverse association between a spouse's education and adverse health outcomes net of one's own education (Egeland et al. 2002; Jaffe et al. 2006; Kravdal 2008; Martikainen 1995; Monden et al. 2003). A few studies report gender differences in the relationship between spousal education and health. For example, two studies based on Israeli data found that spousal education did little to protect women from all-cause (Jaffe, Eisenbach, Neumark, and Manor, Jaffe et al. 2005) and CVD mortality (Jaffe et al. 2005, 2006). Indeed, a wife's education was a more robust predictor of her husband's cardiovascular mortality than his own education (Jaffe et al. 2006). A recent study from Norway also documented an inverse association between a wife's education and the risk of all-cause and cardiovascular disease mortality among husbands, but men's education was not significantly associated with their wives' mortality (Skalická and Kunst 2008). Importantly, many of these studies suggest that failing to incorporate spousal education in models predicting health outcomes among the married may overestimate the importance of an individual's own education for his or her health (Huijts et al. 2010; Kravdal 2008; Monden et al. 2003; Skalická and Kunst 2008; Torssander and Erikson 2009).

In contrast, studies in the United States tend to find no significant spousal educational influences on an individual's own health or mortality (Haveman et al. 1994; McDonough et al. 1999; Smith and Kington 1997; Smith and Zick 1994). One exception is a study by Lillard and Waite (1995) based on the Panel Study of Income Dynamics. They reported that wives' education was negatively associated with husbands' risk of death, although they found no evidence that husbands' education mattered for wives' mortality risk. In addition, their analysis showed that

wives' education was more important for husbands' mortality than men's own education. Although research in other nations consistently documents a strong association between spousal education and various health outcomes, a few recent studies in the United States suggest that spousal education is not associated with health. Yet, the reasons behind this discrepancy are not entirely clear.

Therefore, our primary goal is to assess whether an association exists between spousal education and the self-rated health of married adults in the United States. Education's role as a fundamental cause of disease likely is embedded with social relationships—especially close interpersonal relationships like marriage. However, given that gender differences exist in the resources provided via marriage and, potentially, educational attainment, it is plausible that gender differences also will exist in the association between spousal education and health. We also examine whether the association between spousal education and self-rated health varies by age. The age-specific analyses also provide a means of controlling for possible age-related variations in the conditions that underlie self-rated health (Idler 1993) and/or potential cohort differences in the influence of education or marriage on self-rated health.

Methods

Data

The analyses are based on pooled cross-sectional data from the 1997–2010 National Health Interview Survey (NHIS, $N = 1{,}283{,}480$) downloaded from the Integrated Health Interview Series (IHIS) website (Minnesota Population Center and State Health Access Data Assistance Center, 2012). The NHIS is a cross-sectional household survey conducted annually since 1957 by the U.S. National Center for Health Statistics. The NHIS is representative of the civilian non-institutionalized population in each survey year. Interviews are conducted in-person and an attempt is made to interview all eligible persons within a sampled household. If a household member was unable to complete the interview, information is obtained from a knowledgeable proxy respondent. Annual response rates for eligible households in the 1997–2010 period ranged from 79.5 to 91.8 % (National Center for Health Statistics 2011).

Most married couples in the United States are educationally homogamous (Schwartz and Mare 2005). Thus, we pool data from the 1997–2010 NHIS cross sections to increase the size of our sample and ensure adequate statistical power to substantiate our conclusions for individuals in educationally heterogamous marriages. Spousal education was obtained by combining self-reported marital status with information on the NHIS household roster, which lists each household member's relationship to an interviewer-designated household reference person. Records for married respondents listed on the roster as the household reference person or the spouse of the household reference person were linked via unique household identifiers within each respective survey year.

The analyses exclude cohabiters because research consistently shows that cohabiting and married couples in the United States differ substantially in terms of their demographic composition and relationship dynamics (Raley 2000; Smock 2000; Waite and Gallagher 2001). The sample is further restricted to married persons aged 25 and older (i.e., roughly 60 % of the entire NHIS sample aged 25 and older; N = 514,810). Spouses in our sample may be older or younger than respondents with a lower age bound of 25 years. We also excluded married couples if either spouse had missing sample weights and/or had inconsistent marital status reports. The analyses also exclude a few respondents in same-sex marriages. Excluding couples who did not meet our age, sample weight, and/or marital status criteria reduced the sample size to 472,916 married persons aged 25 and older, which is about 92 % of married respondents aged 25 and older in the 1997–2010 NHIS. Finally, we also exclude married couples if either spouse had missing values on one or more of the variables used in the analyses. After imposing these restrictions and listwise deleting observations with missing values, the final sample contains 337,846 married men and women (i.e., 168,923 couples).

Measures

The dependent variable is self-rated health. Respondents rated their overall health as "excellent," "very good," "good," "fair," or "poor" (about 0.32 % missing). Self-rated health is dichotomized as fair/poor (1) versus good/very good/excellent (0) health. Consistent with prior research (Manor et al. 2000), ancillary analyses (not shown) with alternative specifications of self-rated health produced similar results. Thus, self-rated health is dichotomized to increase comparability with previous research on education and self-rated health (Goesling 2007; Huijts et al. 2010; Liu and Hummer 2008; Monden et al. 2003). Our main independent variable is self-reported education. Education references the highest level of completed formal education (2.67 % missing), and is categorized as less than a high school degree, high school degree (including G.E.D.), some college education (no Bachelor's degree), and a college education or higher; college is the reference group. The control variables were self-reported and include an individual's own race–ethnicity (0.05 % missing), nativity status (0.49 % missing), age in years (none missing), and the ratio of family income to the poverty threshold (27.95 % missing). We categorized race–ethnicity into four groups: non-Hispanic white (reference), non-Hispanic black, non-Hispanic other race–ethnicity, or Hispanic (any race). Nativity status indicates whether a respondent was born in the U.S. (reference is born in the U.S.). Age is a continuous variable that ranges from 25 to 85 years and older. Poverty status represents the ratio of a respondent's total family income to the U.S. poverty threshold. This measure adjusts for inflation and accounts for the size and age composition of a family; persons whose family income to poverty ratio is under 1.00 are considered "in poverty" (DeNavas-Walt et al. 2011). Our poverty status measure has four categories: 0.00–0.99, 1.00–1.99, 2.00–3.99, and 4.00 or higher (reference). Preliminary analyses (not shown) with multiply imputed income to poverty data yielded similar results to those obtained from our analytic sample.

Analyses

Three binary logistic regression models were estimated separately for married men and women aged 25 and older, 25–44, 45–64, and 65 and older. The first model regressed self-rated health on individuals' own education while controlling for own race–ethnicity, nativity status, age in years, and the ratio of family income to the poverty threshold. The second model regressed fair/poor self-rated health on spousal education and the control variables, but does not include own education. The third model regressed fair/poor self-rated health on own education, spousal education, and the controls. Partial *F*-tests were conducted (Chow 1960) to formally evaluate whether the influence of education on the odds of fair/poor health differed significantly by gender and/or age group. The analyses were weighted for non-response and the inverse probability of selection into the sample. Following recommendations on the IHIS website, the sample weights were divided by the number of survey years pooled (i.e., 14) to ensure that the sample is representative of the non-institutionalized U.S. population between 1997 and 2010. The models were estimated with Stata 12.0 and account for clustering and post-stratification in the NHIS sample design.

Results

Descriptive Statistics

Tables 1 and 2 present descriptive statistics for the married men and women in our sample by age group. As shown in Tables 1 and 2, the prevalence of fair/poor self-rated health was similar between married men and women within each respective age group. Overall, around 10 % of the sample rated their health as fair or poor. The distribution of fair/poor self-rated health was very similar for married men and women aged 25–44 (5.2 vs. 4.5 %) and 45–64 (12.7 vs. 12.3 %), but after age 64 fair/poor self-rated health was slightly more prevalent among men (24.5 %) than women (22.8 %). The prevalence of fair/poor self-rated health was more than twice as high for men and women aged 45–64 than it was for men and women aged 25–44 and reports of fair/poor among men and women aged 65 and older roughly were double that of men and women aged 45–64.

Tables 1 and 2 also reveal that more men than women had a college education (32.0 vs. 29.8 %); this also was the case for less than high school education (14.3 vs. 11.9 %). In general, men's and women's own education had a similar distribution within each respective age group, but slightly more women (34.2 %) than men (32.7 %) in the 25–44 age group had a college education. The sample is well off economically, with nearly one-half of all respondents reporting family income four or more times the federal poverty threshold and, as expected, household income peaked in midlife. The sample is predominantly non-Hispanic white and US-born. The average age for men and women is similar within each respective age group.

Tables 3 and 4 present gender–age-specific distributions for own education and spouse's education. Tables 3 and 4 demonstrate that educational homogamy is the

Table 1 Descriptive statistics for married men in the sample by age group: National Health Interview Survey, 1997–2010

	Ages 25 and over		Ages 25–44		Ages 45–64		Ages 65 and over	
	n	%	*n*	%	*n*	%	*n*	%
Fair or poor health	19,322	10.9	3,482	4.5	8,936	12.3	6,904	24.5
Own education								
<High school	29,659	14.3	11,908	12.5	10,309	12.2	7,442	24.9
High school	46,235	27.5	19,972	27.2	18,711	27.4	7,552	29.0
Some college	43,174	26.1	19,653	27.6	18,237	26.8	5,284	20.4
College	49,855	32.0	21,579	32.7	21,794	33.6	6,482	25.8
Spouse's Education								
<High school	25,887	12.1	10,348	10.5	9,259	10.6	6,280	20.5
High school	48,971	29.0	17,824	23.9	21,053	30.5	10,094	38.8
Some college	47,869	29.2	22,169	31.2	19,804	29.6	5,896	22.8
College	46,196	29.7	22,771	34.5	18,935	29.4	4,490	18.0
Income to poverty								
<1.00	11,987	5.6	6,426	6.9	3,865	4.6	1,696	5.1
1.00–1.99	26,507	13.9	12,765	15.2	7,707	9.7	6,035	21.0
2.00–3.99	53,109	31.3	24,336	33.6	18,575	26.1	10,198	38.7
≥4.00	77,320	49.1	29,585	44.3	38,904	59.7	8,831	35.2
Race–ethnicity								
Non-Hispanic white	116,470	77.3	45,801	71.8	49,590	79.8	21,079	85.6
Non-Hispanic black	14,599	7.4	6,250	8.0	6,238	7.3	2,111	5.8
Non-Hispanic other	8,330	4.5	3,970	5.3	3,390	4.3	970	3.0
Hispanic, any race	29,524	10.8	17,091	14.9	9,833	8.5	2,600	5.7
Foreign-born	33,808	15.1	18,288	18.9	12,213	13.3	3,307	9.5
Age in years (mean)	168,923	49.1	73,112	36.1	69,051	53.3	26,760	73.1

NHIS National Health Interview Survey. The sample is restricted to married respondents aged 25 and older with complete information on all of the variables of interest. The percentages and means are weighted. The frequencies are not weighted

norm across all age groups, but educational heterogamy is slightly more common among married persons aged 65 and older. These patterns are not only consistent with well-documented cohort differences in educational assortative mating, but may also reflect gender and/or educational differences in old-age mortality selection.

Logistic Regression Models

Tables 5 and 6 present results from logistic regression models predicting fair/poor self-rated health. Table 5 displays odds ratios for men and women aged 25 and older. Table 6 displays odds ratios for men and women aged 25–44, 45–64, and 65 and older. The first set of models in Tables 5 and 6 (Models 1a, 1b) show the overall association between own education and poor/fair self-rated health net of poverty status, race/ethnicity, nativity, and age in years. Not surprisingly, large educational

Table 2 Descriptive statistics for married women in the sample by age group: National Health Interview Survey, 1997–2010

	Ages 25 and over		Ages 25–44		Ages 45–64		Ages 65 and over	
	n	%	*n*	%	*n*	%	*n*	%
Fair or poor health	18,438	10.4	4,698	5.2	8,848	12.7	4,892	22.8
Own education								
<High school	25,887	11.9	11,921	10.2	9,012	10.9	4,954	21.6
High school	48,971	29.1	20,762	24.3	20,439	31.7	7,770	39.7
Some college	47,869	29.2	25,409	31.3	18,208	28.9	4,252	22.0
College	46,196	29.8	25,726	34.2	17,344	28.6	3,126	16.7
Spouse's Education								
<High school	29,659	14.1	13,593	12.0	10,357	13.1	5,709	25.3
High school	46,235	27.5	22,759	27.1	17,735	27.5	5,741	29.3
Some college	43,174	26.1	22,525	27.7	16,698	26.2	3,951	20.3
College	49,855	32.2	24,941	33.2	20,213	33.3	4,701	25.1
Income to poverty								
<1.00	11,987	5.5	7,375	6.7	3,388	4.2	1,224	4.9
1.00–1.99	26,507	13.7	14,358	14.7	7,272	9.7	4,877	22.5
2.00–3.99	53,109	31.3	27,650	33.3	17,463	26.0	7,996	40.5
≥4.00	77,320	49.5	34,435	45.3	36,880	60.1	6,005	32.1
Race–ethnicity								
Non-Hispanic white	115,972	78.2	52,609	73.4	47,253	81.3	16,110	86.8
Non-Hispanic black	13,557	6.5	6,692	6.9	5,490	6.6	1,375	4.8
Non-Hispanic other	9,339	5.1	5,266	6.1	3,354	4.5	719	2.9
Hispanic, any race	30,055	10.2	19,251	13.6	8,906	7.7	1,898	5.4
Foreign-born	34,494	15.1	21,013	18.5	10,900	12.5	2,581	10.2
Age in years (mean)	168,923	47.0	83,818	35.4	65,003	53.1	20,102	72.3

NHIS National Health Interview Survey. The sample is restricted to married respondents aged 25 and older with complete information on all of the variables of interest. The percentages and means are weighted. The frequencies are not weighted

gradients are evident for both married men and women. For example, the results suggest that the odds of reporting fair/poor health among men aged 25 and older were over three times higher for those who did not complete high school compared to those with a college education [odds ratio (OR) = 3.45; 95 % confidence interval (CI) 3.23–3.68].

Models 1a and 1b also provide limited evidence that the association between own education and self-rated health varies by gender and/or age. Among respondents aged 25 and older, the odds of fair/poor self-rated health were significantly greater for men (OR = 1.85 95 % CI 1.75–1.97) than women (OR = 1.67, 95 % CI 1.57–1.78) with some college education when compared to their college-educated counterparts, but the age-specific models suggest that these differences were only statistically significant among married persons aged 65 and older. The association between own education and fair/poor self-rated health was significantly weaker for

Table 3 Distribution of Own Education By Spouse's Education for Married Men in the Sample By Age Group: NHIS, 1997–2010

	Ages 25 and over		Ages 25–44		Ages 45–64		Ages 65 and over	
	n	%	*n*	%	*n*	%	*n*	%
Own education × spouse's education								
<High school × <high School	17,460	7.6	7,185	6.7	5,905	6.2	4,370	13.6
<High school × high school	7,549	4.2	2,614	3.1	2,779	3.8	2,156	8.0
<High school × some college	3,739	2.1	1,707	2.1	1,297	1.8	735	2.7
<High school × college	911	0.5	402	0.5	328	0.4	181	0.6
High school × <high school	5,084	2.7	1,955	2.3	1,945	2.5	1,184	4.3
High school × high school	24,502	14.6	9,692	13.1	10,295	15.0	4,515	17.4
High school × some college	11,606	7.1	5,782	8.1	4,480	6.8	1,344	5.3
High school × college	5,043	3.1	2,543	3.7	1,991	3.0	509	2.0
Some college × <high school	2,520	1.3	942	1.1	1,050	1.3	528	1.9
Some college × high school	11,060	6.7	3,863	5.3	5,164	7.6	2,033	7.9
Some college × some college	20,712	12.6	10,209	14.4	8,449	12.5	2,054	7.9
Some college × college	8,882	5.6	4,639	6.8	3,574	5.5	669	2.7
College × <high school	823	0.5	266	0.3	359	0.5	198	0.7
College × high school	5,860	3.6	1,655	2.3	2,815	4.2	1,390	5.5
College × some college	11,812	7.4	4,471	6.6	5,578	8.5	1,763	7.0
College × college	31,360	20.5	15,187	23.5	13,042	20.4	3,131	12.7
Total	168,923	100	73,112	100	68,051	100	26,760	100

NHIS National Health Interview Survey. The sample is restricted to married respondents aged 25 and older with complete information on all of the variables of interest. The cell percentages are weighted. The frequencies are not weighted

men and women aged 65 and older when compared to persons aged 25–44 or 45–64, but there was no evidence that the association between own education and self-rated health differed significantly between the 25–44 and 45–64 age groups.

The second series of models in Tables 5 and 6 establish the total association between spousal education and fair/poor self-rated health, net of the controls. Models 2a and 2b show a graded association between spousal education and the odds of fair/poor self-rated health similar to the association documented for own education. However, the results suggest that one's own education is more important than a spouse's education for self-rated health. Without controlling for own education, spousal education had a greater influence on married women's than men's self-rated health in the 45–64 age group, but these differences were only statistically significant for persons whose spouse had a high school education or some college education. When own education is not controlled, there were no statistically significant age differences in the association between spousal education and fair/poor self-rated health.

The third set of models (3a, 3b) in Tables 5 and 6 evaluate whether spousal education is associated with fair/poor self-rated health, net of own education and the controls. The estimates shown in Tables 5 and 6 suggest that spousal education is

Table 4 Distribution of own education by spouse's education for married women in the sample by age group: NHIS, 1997–2010

	Ages 25 and over		Ages 25–44		Ages 45–64		Ages 65 and over	
	n	%	*n*	%	*n*	%	*n*	%
Own education × spouse's education								
<High school × <high school	17,460	7.5	8,207	6.4	5,806	6.5	3,447	14.4
<High school × high school	5,084	2.7	2,259	2.3	1,893	2.6	932	4.5
<High school × some college	2,520	1.3	1,117	1.1	980	1.3	423	2.0
<High school × college	823	0.5	338	0.4	333	0.5	152	0.7
High school × <high school	7,549	4.1	3,005	3.1	2,952	4.3	1,592	7.8
High school × high school	24,502	14.6	11,080	13.1	9,917	15.4	3,505	18.0
High school × some college	11,060	6.7	4,618	5.5	4,858	7.7	1,584	8.2
High school × college	5,860	3.7	2,059	2.5	2,712	4.3	1,089	5.7
Some college × <high school	3,739	2.0	1,927	2.1	1,272	1.9	540	2.6
Some college × high school	11,606	7.1	6,530	8.1	4,123	6.6	953	5.0
Some college × some college	20,712	12.5	11,544	14.2	7,673	12.0	1,495	7.7
Some college × college	11,812	7.5	5,408	7.0	5,140	8.4	1,264	6.7
College × <high school	911	0.5	454	0.5	327	0.5	130	0.6
College × high school	5,043	3.1	2,890	3.7	1,802	2.9	351	1.9
College × some college	8,882	5.6	5,246	6.8	3,187	5.2	449	2.4
College × college	31,360	20.6	17,136	23.3	12,028	20.1	2,196	11.9
Total	168,923	100	83,818	100	65,003	100	20,102	100

NHIS National Health Interview Survey. The sample is restricted to married respondents aged 25 and older with complete information on all of the variables of interest. The cell percentages are weighted. The frequencies are not weighted

associated with married men's and women's own self-rated health, although the associations are weaker than those for own education and self-rated health. For example, the results for married men aged 45–64 (Table 6, Model 3a) suggest that in comparison to men whose wife had a college education, the odds of reporting fair/poor health were 55 % higher (OR = 1.55; 95 % CI 1.39–1.74) for those whose wife did not complete high school, 21 % higher (OR = 1.21; 95 % CI 1.10–1.33) for those whose wife graduated high school, and 16 % higher (OR = 1.16; 95 % CI 1.06–1.27) for those whose wife had completed some college.

Moreover, the associations established in Models 1a and 1b between own education and self-rated health reduced substantially for married women when spousal education was controlled in Models 3a and 3b. *F*-tests comparing coefficients from Models 1 and 3 confirmed that the reductions observed in the association between own education and fair/poor self-rated health were statistically significant. For example, the odds ratio of reporting fair/poor health for women aged 45–64 (Table 6, Model 3b) without a high school education relative to college-educated women was 33.6 % lower in the model including spousal education (OR = 2.55; 95 % CI 2.26–2.88) than it was in the model without spousal

Table 5 Logistic regression analyses of the association between own education, spouse's education, and fair or poor self-rated health for married men and women aged 25 and over: NHIS, 1997–2010

	Men			Women		
	Model 1a OR (95 % CI)	Model 2a OR (95 % CI)	Model 3a OR (95 % CI)	Model 1b OR (95 % CI)	Model 2b OR (95 % CI)	Model 3b OR (95 % CI)
Own education						
<High school	3.45* (3.23–3.68)		2.75* (2.56–2.96)	3.57* (3.33–3.83)		2.52* (2.32–2.73)
High school	2.05* (1.93–2.17)		1.79* (1.68–1.91)[a]	2.01* (1.89–2.15)		1.61* (1.50–1.73)
Some college	1.85* (1.75–1.97)[a]		1.69* (1.59–1.81)[a]	1.67* (1.57–1.78)		1.45* (1.35–1.55)
College	1.00 (Ref.)		1.00 (Ref.)	1.00 (Ref.)		1.00 (Ref.)
Spouse's education						
<High school		2.75* (2.57–2.95)	1.65* (1.53–1.79)[a]		2.98* (2.79–3.17)	1.97* (1.83–2.12)
High school		1.79* (1.69–1.91)	1.31* (1.22–1.40)[a]		1.94* (1.83–2.07)	1.53* (1.43–1.64)
Some college		1.51* (1.42–1.61)	1.22* (1.14–1.30)[a]		1.64* (1.55–1.74)	1.39* (1.31–1.49)
College		1.00 (Ref.)	1.00 (Ref.)		1.00 (Ref.)	1.00 (Ref.)
Poverty ratio						
<1.00	5.80* (5.38–6.25)	6.37* (5.90–6.87)	5.33* (4.94–5.75)	4.98* (4.61–5.39)	5.08* (4.71–5.48)	4.38* (4.05–4.73)
1.00 – 1.99	3.57* (3.37–3.78)	3.95* (3.73–4.18)	3.34* (3.16–3.54)	3.40* (3.21–3.59)	3.38* (3.21–3.57)	3.01* (2.85–3.18)
2.00 – 3.99	1.90* (1.81–1.99)	2.03* (1.94–2.13)	1.83* (1.74–1.91)	1.92* (1.82–2.02)	1.90* (1.81–2.00)	1.78* (1.69–1.87)
≥4.00	1.00 (Ref.)	1.00 (Ref.)	1.00 (Ref.)	1.00 (Ref.)	1.00 (Ref.)	1.00 (Ref.)
Race–ethnicity						
Non-Hispanic white	1.00 (Ref.)	1.00 (Ref.)	1.00 (Ref.)	1.00 (Ref.)	1.00 (Ref.)	1.00 (Ref.)
Non-Hispanic black	1.40* (1.31–1.50)	1.48* (1.38–1.59)	1.41* (1.31–1.51)	1.66* (1.55–1.77)	1.58* (1.48–1.69)	1.60* (1.50–1.71)
Non-Hispanic other	1.33* (1.20–1.48)	1.27* (1.14–1.41)	1.34* (1.21–1.49)	1.23* (1.11–1.38)	1.25* (1.12–1.39)	1.27* (1.14–1.42)
Hispanic, any race	1.06 (0.98–1.14)	1.10* (1.04–1.20)	1.01 (0.94–1.09)	1.14* (1.07–1.22)	1.16* (1.09–1.24)	1.07* (1.00–1.15)
Nativity status						

Table 5 continued

	Men			Women		
	Model 1a OR (95 % CI)	Model 2a OR (95 % CI)	Model 3a OR (95 % CI)	Model 1b OR (95 % CI)	Model 2b OR (95 % CI)	Model 3b OR (95 % CI)
U.S. born	1.00 (Ref.)	1.00 (Ref.)	1.00 (Ref.)	1.00 (Ref.)	1.00 (Ref.)	1.00 (Ref.)
Foreign-born	0.66* (0.61–0.70)	0.63* (0.59–0.68)	0.64* (0.60–0.69)	0.71* (0.66–0.76)	0.76* (0.71–0.82)	0.72* (0.67–0.77)
Age in years	1.05* (1.05–1.05)	1.05* (1.05–1.05)	1.05* (1.05–1.05)	1.04* (1.04–1.04)	1.04* (1.04–1.05)	1.04* (1.04–1.04)

OR odds ratio, *CI* confidence interval. The sample is restricted to married respondents with complete information on all of the variables of interest

*$P \leq 0.05$, two-tailed

[a] The individual coefficients for men and women are significantly different; Partial F-test ($P \leq 0.05$)

Table 6 Logistic regression analyses of the association between own education, spouse's education, and self-rated health among married respondents by gender and age group: NHIS, 1997–2010

	Men			Women		
	Model 1a OR (95 % CI)	Model 2a OR (95 % CI)	Model 3a OR (95 % CI)	Model 1b OR (95 % CI)	Model 2b OR (95 % CI)	Model 3b OR (95 % CI)
Ages 25–44						
Own education						
<High school	3.83* (3.27–4.50)		2.96* (2.47–3.56)	3.93* (3.44–4.49)		2.71* (2.33–3.15)
High school	2.40* (2.08–2.78)		2.01* (1.71–2.37)	2.23* (1.98–2.51)		1.74* (1.52–1.98)
Some college	2.19* (1.89–2.53)		1.96* (1.67–2.29)	1.84* (1.63–2.07)		1.55* (1.37–1.76)
College	1.00 (Ref.)		1.00 (Ref.)	1.00 (Ref.)		1.00 (Ref.)
Spouse's education						
<High school		2.83* (2.42–3.30)	1.68* (1.41–2.00)		3.34* (2.92–3.82)	2.10* (1.80–2.45)
High school		2.03* (1.77–2.33)	1.43* (1.22–1.67)		2.15* (1.91–2.43)	1.62* (1.42–1.85)
Some college		1.64* (1.43–1.89)	1.25*[a] (1.07–1.45)		1.75* (1.55–1.98)	1.44* (1.26–1.64)
College		1.00 (Ref.)	1.00 (Ref.)		1.00 (Ref.)	1.00 (Ref.)
Ages 45– 64						
Own education						
<High school	4.33* (3.93–4.77)		3.57*[a] (3.19–3.99)	3.84* (3.46–4.25)		2.55* (2.26–2.88)
High school	2.19* (2.01–2.39)		1.98*[a] (1.79–2.18)	2.06* (1.88–2.27)		1.59* (1.43–1.77)
Some college	1.99* (1.82–2.17)		1.85*[a] (1.69–2.04)	1.76* (1.60–1.93)		1.49* (1.35–1.65)
College	1.00 (Ref.)		1.00 (Ref.)	1.00 (Ref.)		1.00 (Ref.)
Spouse's education						
<High school		2.94* (2.67–3.24)	1.55*[a] (1.39–1.74)		3.31* (3.02–3.62)	2.20* (1.98–2.46)
High school		1.77*[a] (1.63–1.93)	1.21*[a] (1.10–1.33)		2.03* (1.86–2.22)	1.61* (1.46–1.78)
Some college		1.50*[a] (1.38–1.64)	1.16*[a] (1.06–1.27)		1.70* (1.56–1.86)	1.44* (1.31–1.58)

Table 6 continued

	Men			Women		
	Model 1a OR (95 % CI)	Model 2a OR (95 % CI)	Model 3a OR (95 % CI)	Model 1b OR (95 % CI)	Model 2b OR (95 % CI)	Model 3b OR (95 % CI)
College		1.00 (Ref.)	1.00 (Ref.)		1.00 (Ref.)	1.00 (Ref.)
Ages 65 and Over						
Own education						
<High school	2.57* (2.32–2.86)		2.10* (1.87–2.35)	2.67* (2.30–3.09)		2.10* (1.77–2.50)
High school	1.64* (1.48–1.82)		1.49* (1.33–1.66)	1.49* (1.30–1.72)		1.29* (1.11–1.51)
Some college	1.47*[a] (1.33–1.64)		1.38*[a] (1.23–1.54)	1.19* (1.02–1.38)		1.08 (0.92–1.26)
College	1.00 (Ref.)		1.00 (Ref.)	1.00 (Ref.)		1.00 (Ref.)
Spouse's education						
<High school		2.38* (2.09–2.70)	1.63* (1.41–1.88)		2.24* (1.99–2.53)	1.58* (1.37–1.82)
High school		1.51* (1.34–1.71)	1.21* (1.06–1.38)		1.52* (1.34–1.73)	1.30* (1.13–1.50)
Some college		1.33* (1.17–1.52)	1.16* (1.01–1.32)		1.36* (1.20–1.56)	1.25* (1.08–1.44)
College		1.00 (Ref.)	1.00 (Ref.)		1.00 (Ref.)	1.00 (Ref.)

NHIS National Health Interview Survey, *OR* odds ratio, *CI* confidence interval. Person's with a college education are the reference group for own and spouse's education. The models control for an individual's own race–ethnicity (ref. = Non-Hispanic white), nativity status (ref. = U.S. born), a linear term for age in years, and the ratio of family income to the poverty threshold (ref. = 4.00 and above)

education (OR = 3.84; 95 % CI 3.46–4.25). Omitting spousal education appears less consequential for models predicting the self-rated health of married men. The odds ratio of fair/poor health for men aged 45–64 without a high school education relative to college-educated men was about 17.6 % lower in the model with spousal education included (OR = 3.57; 95 % CI 3.19–3.99) than it was in the model without spousal education (OR = 4.33; 95 % CI 3.93–4.77); *F*-tests confirmed that this difference was statistically significant.

Although the influence of own education generally did not differ statistically for men and women in Model 1a, the results show that women's own education has a significantly weaker association with fair/poor self-rated health compared to men when spousal education is controlled. Among married men and women aged 25 and older, these differences were limited to respondents with a high school or some college education. However, for married persons aged 45–64, the association between own education and fair/poor self-rated health was significantly weaker for women than men at all educational levels once spousal education was controlled. Further, the results for persons aged 25 and older (Table 5, Model 3a) show that husbands' education has a greater effect on wives' self-rated health than wives' education has on husbands' self-rated health. Yet, once again, the most pronounced and consistent gender differences in the association between spousal education and self-rated health were evident among married persons aged 45–64.

The third set of models provided limited evidence for age differences in the association between own and spousal education on self-rated health. The association between own education and fair/poor self-rated health in Table 6 (Model 3a) was significantly weaker for persons aged 65 and older in comparison to those who were younger. Husbands' education had a significantly weaker influence on wives' self-rated health for women aged 65 and older than it did for younger women, but these differences were only present among women whose husbands' had a high school education or less. The strength of the association between own and spousal education and self-rated health did not differ significantly between men and women in the 25–44 and 45–64 age groups.

Tables 7 and 8 show predicted probabilities (displayed as percentages) of reporting fair/poor self-rated health for married men and women aged 45–64 who have hypothetical combinations of own and spousal education. The results for men (Table 6, Model 3a) and women (Table 6, Model 3b) aged 45–64 were used to calculate the predicted probabilities. Covariates for poverty status, race/ethnicity, nativity, and age in years were fixed at their respective modal or mean values. The diagonals in Tables 7 and 8 represent a hypothetical married person with a given level of education whose spouse has the same level of education. The off-diagonals represent a hypothetical married person who is married to a spouse with more or less education.

The estimates shown in Table 7 suggest that college-educated men who are married to college-educated women have the lowest predicted probability of poor/fair self-rated health (Pr = 3.1 %; 95 % CI 2.9–3.4), and their probability of poor/fair self-rated health is greater when married to a woman with less education. Similarly, the predicted probabilities in Table 7 imply that self-rated health for men with less than a high school education is higher when married to women with a high

Table 7 Predicted probability of fair/poor self-rated health for married men aged 45–64 by own education and wives' education: NHIS, 1997–2010

	<High school	High school	Some college	College
Own education				
<High school	15.2	12.2	11.8	10.3
	(13.9–16.4)	(11.2–13.2)	(10.7–12.8)	(9.2–11.4)
High school	9.0	7.2	6.9	6.0
	(8.2–9.8)	(6.7–7.7)	(6.3–7.5)	(5.4–6.6)
Some college	8.5	6.7	6.5	5.6
	(7.7–9.3)	(6.2–7.2)	(6.0–6.9)	(5.1–6.1)
College	4.8	3.8	3.6	3.1
	(4.2–5.3)	(3.4–4.1)	(3.3–3.9)	(2.9–3.4)

95 % confidence intervals in parentheses

[a] *Source* Model 3a in Table 6. The covariates were fixed at their modal (mean) values in Table 1. The predicted probabilities are for a hypothetical married man who is non-Hispanic white, U.S. born, has a family income ≥4.00 times the federal poverty threshold, and is 53 years old

Table 8 Predicted probability of fair/poor self-rated health for married women aged 45–64 by own education and husbands' education: NHIS, 1997–2010

	Husbands' education			
	<High school	High school	Some college	College
Own education				
<High school	16.1	12.3	11.2	8.0
	(14.9–17.4)	(11.3–13.4)	(10.2–12.2)	(7.1–9.0)
High school	10.7	8.0	7.3	5.2
	(9.8–11.6)	(7.5–8.6)	(6.7–7.8)	(4.6–5.7)
Some college	10.1	7.6	6.9	4.9
	(9.3–11.0)	(7.0–8.2)	(6.4–7.3)	(4.4–5.3)
College	7.0	5.2	4.7	3.3
	(6.2–7.8)	(4.7–5.7)	(4.3–5.1)	(3.0–3.6)

95 % confidence intervals in parentheses

[a] *Source* Model 3a in Table 6. The covariates were fixed at their modal (mean) values in Table 2. The predicted probabilities are for a hypothetical married woman who is non-Hispanic white, U.S. born, has a family income ≥4.00 times the federal poverty threshold, and is 53 years old

school education or more. Note, however, that some combinations of husbands' and wives' education have a relatively low prevalence in the population. For example, as Table 3 shows, the percentage of husbands with a college education married to spouses with less than a high school education in the sample is 0.5 % of all husbands aged 45–64. Table 8 displays the predicted probabilities of fair/poor self-rated health for a hypothetical married woman based on her own and her husband's education. Overall, the patterns of association for women in Table 8 are very similar

to those shown for men in Table 7. The predicted probabilities possibly suggest that educational heterogamy is more consequential for women's than men's health, but these differences probably are not significant because most of the confidence intervals in Tables 7 and 8 overlap.

Discussion

Although education (Mirowsky and Ross 2003) and marriage (Liu and Umberson 2008; Rogers 1995; Waite and Gallagher 2001) are both positively associated with numerous health outcomes, only a handful of studies have examined whether a spouse's education confers additional health advantages or disadvantages above and beyond one's own education. This article examined the association between spousal education and self-rated health among married men and women in the United States. Our results suggest that being married to a highly educated person decreases one's odds of reporting fair or poor health, while being married to a person with low levels of education increases one's odds of reporting fair/poor self-rated health, net of one's own education and other socio-demographic factors. We documented this general pattern among married men and women across the adult age range, but it was evident particularly among married men and women aged 45–64. Educational disparities in self-rated health were smallest among the 25–44 age group, peaked among the 45–64 age group, but showed signs of convergence once again in the 65 and older age group. These age patterns are consistent with the age-as-leveler hypothesis. Following Dupre (2007), we do not interpret these results as evidence that education has a weaker effect on health with increasing age. Instead, we suspect that mortality selection and/or widowhood differentials between educational groups are the primary reasons that one's own education and a spouse's education has a weaker influence on self-rated health among married persons aged 65 and older in comparison to married persons aged 45–64.

Overall, our results imply that married persons are sharing and/or exchanging the material and non-material resources that each spouse possesses via his or her own education in an effort to maximize each other's well-being. Notably, the results also imply that educationally hypergamous marriages enhance individuals' self-rated health, while educationally hypogamous marriages diminish individuals' self-rated health. The greatest ability to garner health advantages appears to occur in marriages between college-educated husbands and wives. However, college-educated persons married to a less educated spouse appear to face increased risks of fair/poor self-rated health. Conversely, the results suggest that the probability of fair/poor self-rated health is lower than expected solely based on one's own education among less educated persons whose spouses have more education.

Our results also revealed that the association between own education and the odds of reporting fair/poor health was attenuated when spousal education was controlled. These results correspond with those recently documented in other nations. Several of these studies suggest that failing to incorporate spousal education in models predicting health outcomes among the married may overestimate the importance of an individual's own education (Huijts et al. 2010; Kravdal 2008;

Monden et al. 2003; Skalická and Kunst 2008). Our results generally are not only consistent with these studies, but also suggest that this particularly occurs in models examining the influence of education on self-rated health for married women in middle adulthood. Husbands' education appears to be more important for wives' self-rated health than vice versa and the results suggest that it is particularly the case among married persons aged 45–64. This is evident both in terms of gender differences in the association between own education and fair/poor self-rated health when spousal education is controlled and in gender differences in the magnitude of the overall association between spousal education and fair/poor self-rated health.

Somewhat surprisingly, the gender pattern documented here is not consistent with some recent studies from other countries which found that men benefited more from their wives' education than women did from their husband's education (Jaffe et al. 2005, 2006; Skalická and Kunst 2008). One possible explanation for this is differences in the health outcomes examined across studies. Prior studies reporting a greater role of women's education for husbands' health primarily focused on all-cause mortality and mortality related to cardiovascular disease. Another potential explanation is that marriage, socioeconomic, and/or behavioral factors may shape health differently across societies (Lillard and Waite 1995). This finding is consistent with prior research showing that marriage particularly is important for women's health because it provides them with more economic resources than they would have otherwise due to gender differences in labor market outcomes, earnings, and wealth accumulation (Lillard and Waite 1995; Waite and Gallagher 2001). Prior research also suggests that married men's employment is important for their wives health because it often provides them with private health insurance (Wood et al. 2007). Finally, access to private health insurance may be more important for persons aged 45–64 than it is at other ages because persons in this age group are beginning to experience health problems associated with aging, but they are too young to have universal access to healthcare via Medicare.

To the extent that behavioral factors influence married persons' health more than economic resources, one might anticipate a greater influence of wives' education on men's health due to better health behaviors with higher levels of wives' education. On the other hand, to the extent that economic resources are the primary influence of health in marriages, the historical asymmetry in men's and women's economic returns to education points to the importance of husbands' education for women's health. The results point to both types of gendered influences, but the greater influence of husbands' education on women's health suggests that economic resources are more influential than behavioral resources. However, the results from our age-specific analyses possibly imply that the relative importance of these processes differ across the age groups and, potentially, birth cohorts represented in the sample.

The analyses have several limitations. First, although self-rated health is strongly associated with morbidity and mortality (Idler and Benyamini 1997), its subjective nature may lead to different interpretations across sub-populations (Case and Paxson 2005; Huisman et al. 2007; Idler 1993), but marriage may constrain potential gender differences in interpretation. The age-specific analyses also likely constrain potential age and cohort differences in interpretation. Second, the results

may be influenced by assortative mating on health, education, and/or unmeasured attributes. Although recent U.S. cohorts have shown an increased tendency to marry within educational groups, sorting on the basis of education is less common in older birth cohorts in comparison to more recent birth cohorts (Mare 1991; Schwartz and Mare 2005). Note, however, that the results for married persons aged 25–44, 45–64, and 65 and older generally were comparable.

Third, by definition, the sample only contains currently married individuals and NHIS does not contain information on marital length and/or quality. Variations in marital timing, marital quality, the number of marriages, and more could influence the results. Fourth, the analyses also excluded cohabiters. By focusing exclusively on married persons, we were able to draw upon a wealth of prior theoretical and empirical research that examines the influence of education and marriage on health. While extending the analyses to examine cohabiters was beyond the scope of the present study, future research should examine whether the associations documented in our analyses for married persons also exist among unmarried cohabiters.

Fifth, gender differences in mortality selection likely resulted in a more robust and economically successful group of married men compared to married women, particularly at older ages. The age-specific analyses provided a partial way of ascertaining whether mortality selection played a critical role in influencing the gender pattern of results. The general pattern of results within each age group was remarkably similar, suggesting that mortality selection is not strongly influencing our results. Finally, our results for self-rated health may or may not extend to other health outcomes. Differences in the etiology of conditions may influence how the education of individuals and their spouses combine to influence a given health outcome. Future research should examine whether spousal education also influences other adult health outcomes.

Despite these limitations, the analyses provide compelling statistical evidence that education is a shared, or household, health resource among married adults in the United States. Given the voluminous literature examining the relationship between individuals' own education and health, it is remarkable that few studies have explicitly examined the role played by a spouse's education. Health researchers typically think of education as an individual-level resource, but our analyses suggest that the context of marriage can extend the influence of education to include both one's own education and that of their spouse. More generally, the results demonstrate the importance of considering how social relationships broaden the resources that potentially are brought to bear in garnering health advantages among highly educated individuals and households in the United States.

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