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The Effect of Partner Education on Mortality Among a Racially Diverse Sample of Women

by

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Abstract

Research suggests that partnering for women leads to economic benefits and improved access to health promoting tools. One way these benefits could be gained is through the pairing of the highly educated. Recently, women have outpaced men in educational attainment leading to an increase in partnerships where women have greater attainment than their male partners. While education lowers mortality risk, the question of if this phenomenon extends to pairings where women are “marrying down” remains. This may have implications on racial differences in mortality risk among partnered women as the relatively lower attainment in education among ethnic minorities compared to Whites constrains the likelihood that women of color will “marry-up” on education. Using National Health Interview Survey Linked Mortality Files (NHIS-LMF) for years 1999 to 2009 with merged prospective mortality follow-up data through December 2011 (n=114,531), I explore the effect of partner’s relative educational attainment on women’s mortality. Results reveal higher odds of mortality for women with higher education relative to their partner compared to women who have the same education as their partner. These effects are consistent across racial and ethnic groups. Understanding the dynamics of educational attainment between partners assists in better framing how concepts such as the martial health advantage apply to women’s health.
Introduction

Socioeconomic status (SES) is central to understanding mortality risks (Kitagawa and Hauser 1973; Link and Phelan 1996; Phelan et al. 2004; Marmot 2004). Link and Phelan (1996) argue that individual SES functions as a fundamental protective mechanism for health because despite any advances in health care, it is the access to financial, educational, and social resources SES provides that ultimately influence health outcomes such as mortality. SES is usually composed of three indicators: income, education, and occupation (Sweeney 2002), yet, it is education that operates as the best predictor of mortality (Marmot 2004). Specifically, higher educational attainment leads to more control over one’s environment and better health outcomes, whereas lower educational attainment leaves less room for control and high mortality risk (Marmot 2004). The direct effects between investment in individual education and health outcomes, however, may only be part of a larger story; research suggests that partner education may be extended to predict partner health as well.

Concepts such as Goodman’s good health model suggest that the role of educational attainment reflects an investment from multiple household members (such as husbands and wives or domestic partners) to influence one another’s health through the accumulation of resources from an additional person in the household (Jacobson 2000; Waite and Gallagher 2000). One place we see the accumulation and sharing of resources within households is through partnering. Partnering ultimately provides larger protective effects from mortality risk compared to those who are unpartnered (Lillard and Waite 1995; Lund et al. 2002; Rendall et al. 2011). This connection between health benefits and economic advantage, however, is primarily linked to the assumption that women are economically dependent on their male partner (Brines 1994).
Women, on average, have surpassed their male counterparts in completion of secondary and post-secondary education (Stoops 2004), making educational attainment a resource that most women would not need to gain through their partners. Several decades ago race and religion were primary influences of partner decision-making (South 1991; Smits, Ultee, and Lammers 1998; Smits 2003). *Assortative mating theory* tells us that people are more likely to sort themselves into homogamous relationships—relationships where people are of similar socio-economic backgrounds (Becker 1974; Mortensen 1988; Kalmijn 1991; Mare 1991). Presently, educational attainment operates as the primary grouping mechanism by which most individuals partner (Smits 2003; Schwartz and Mare 2005; Liu and Lu 2006; Cherlin 2010). Assortative mating by education, or *educational homogamy*, has been heavily studied over the past three decades (Kalmijn 1991; Mare 1991; Goldstein and Kennedy 2001; Schwartz and Mare 2005; Cherlin 2010; Brown et al. 2014). Evidence to support health advantages gained through educational homogamy (especially at high educational attainment levels) comes from Brown, Hummer, and Hayward (2014). The authors find that when both partners are college-educated this creates an even greater protective effect than if one partner is more educated than the other. Little insight, however, is provided into how unequal distributions of education would complicate health advantages that may be dependent on partner educational status.

The seemingly straightforward concept of marital advantages leading to declines in mortality could be potentially complicated by multifaceted associations between educational attainment and partnership across racial groups. Academic achievement gaps perpetuated through residential and educational isolation of minorities into resource-poor communities have lead to residual societal issues such as limited opportunities for social mobility and disparities in educational attainment (Welner and Carter 2013). Racial disparities in educational attainment
often leave Black women with the option to partner with someone that has comparatively less education or to “marry-down”. To date, no other study has attempted to explain the association between relative partner educational attainment and mortality advantages within the context of the United States using multiple key demographics.

In sum, individual level educational attainment serves as a primary mechanism by which anyone can access resources that are beneficial to their health but we have yet to fully account for the many ways a partner’s education can matter. Importantly, research that examines the implication of partner’s education on the health of women are mixed with some showing a significant relationship and other studies yielding no relationship (Kravdal 2008; Brown et al. 2014). The present study takes a more nuanced approach to understanding under what circumstances a woman with more education or less education relative to their partner matters for diverse women’s health.

The current work has three distinct research goals. First, the analyses that follow investigate whether or not higher education of women relative to their male partner contributes to an increase in mortality. Second, results will reveal whether the opposite effect occurs among women who have less education relative to their partner. Third, this study will investigate if relative partner education affects mortality risk for partnered women differently by racial and ethnic identity.

Background

*The Marital Health Advantage and its Association with Education and Race*

A number of studies have examined the effect of partner educational attainment on mortality. Such studies either find that women’s education has the strongest effect on partnered
men’s health outcomes (Lillard and Waite 1995; Brown, Hummer, & Hayward 2014) or that one’s own education and not partner’s education has a stronger impact on health outcomes (Kravdal 2008). These studies, however, focus on gender differences and omit pertinent predictors of mortality that may be more applicable to partnered women. For instance, some research has found that health benefits for partnered women exist through economic gains from their husbands (Ross, Mirowsky, and Goldsteen 1990; Lillard and Waite 1995). Further, previous findings examining the effect of partner’s education on mortality may have been due to differences in how partner education is observed. For instance, studies show differences in coding such as examining education as categorical, continuous, or both; differences in age cohorts; or demographic and contextual differences found between cross-national studies. Differences in methodologies serve as one possible reason for inconsistencies in results regarding the effect of partner’s education on mortality outcomes among women.

College-educated women partnered with men who have less educational attainment than themselves negatively impacts their perceived health (Brown et al. 2014). Brown, Hummer, and Hayward (2014) create a solid foundation to build upon by controlling for individual education in order to truly see the effect that partner education has on self-reported health. As self-reported health often serves as a strong predictor of mortality risk (Idler and Benyamini 1997; Benjamins et al. 2004) it would be feasible to assume similar patterns might exist for mortality. Jylha (2009) explains that self-reported health is an evaluative process that provides key insights into a person’s biological state. This evaluation is based on a myriad of subjective and objective biological information that is ultimately closely applicable to mortality. Further, educational status as an influencer of social processes sheds light on how relative education might operate
within relationships. Another important factor that must be taken into consideration is the demographic changes that have occurred in partnership over the last thirty years.

Over the last few decades several factors related to partnering among women within the United States have changed. First, marriage rates have been declining over time and more people are choosing to cohabitate (Teachman, Tedrow, and Crowder 2000; Stevenson and Wolfers 2007; Finchman and Beach 2010). Second, educational attainment and income for women has risen (Becker 1981; Charles, Kofi, and Luoh 2003). And third, women are marrying at older ages, in part, to complete their education. Studies that examine the association between mortality and education find that education boosts longevity when individuals are partnered (Mirwosky and Ross 2003, 2015). Yet, research that specifically examines the impact of partner education on health alludes to higher educational attainment among women relative to their partner leading to negative outcomes, particularly for women (Brown et al. 2014). Gender roles that operate in partnerships could potentially account for the negative effects that are associated with women having more relative education than their partner.

The transition from single earner to dual-earner marriages raises new questions for the ways gender roles operate in contemporary households. In previous decades men were far more likely to be the sole breadwinners within their households (Teachman et al. 2000). Due to the increased presence of women within the labor market, however, women are now considered economic contributors within their marriages as well. Tichneor (2005) argues that women have sought education and employment as a means of empowerment. Yet married women in particular who are more socio-economically mobile than their male partner are not leveraging this positionality to gain empowerment within their partnership. Some suggest that this type of relative SES discrepancy (e.g. wives having higher education or earnings) can lead to
relationship instability (Heckert, Nowak, and Snyder 1998; Teachman 2002; Kalmijn 2003; Phillips and Sweeney 2006; Goldstein and Harknett 2006; Schwartz and Han 2014) and ultimately poor health outcomes for partnered women (Robles and Kiecolt-Glaser 2003). Having the additional responsibility of caregiver could cause stress for high achieving women since these women are subject to double the duty of a woman who earns less than her partner. Yet, because of wage inequities and lower educational achievement among some racial and ethnic minorities (Becker 1981; Carlson 2016) the exact impact this type of relationship dynamic has on health outcomes is unclear. Nevertheless, this does not diminish the expectation for a husband’s income to serve as their primary contribution to the marriage (Teachman et al. 2000; Sweeney 2002). The complex mating processes through which women partner assumes not only a substitute of SES but also alternatively a level of equity that could assist in framing how SES composition between partners impacts health.

Potential partners are organized into pools called the *marriage market* (Becker 1974). Charles and Luoh (2010:403) have suggested marriage markets are determined by large group size (i.e. racial group), geography (e.g. regionally concentrated groups), or “socially segregated” places (i.e. schools, neighborhoods, and places of employment). There is an important racial dimension to marriage market and assortative mating by education. Limitations within educationally-based marriage markets make it difficult for non-Hispanic Black (NHB) women, for example, to pair with a mate of the same or higher SES (Litchner et al. 1992; Marsh and von Lockette 2011). Non-Hispanic Black women across all education levels are at least 70 times more likely to partner with other NHBs compared to NHW, Hispanic, and Asian women (Rosenfeld 2008). This type of partnering pattern potentially lowers NHBs opportunity to partner with someone of the same or greater educational attainment given the low rates of intraracial
marriage among highly educated NHB males (Marsh and von Lockette 2011). Meanwhile, Hispanic women who more often have low educational attainment have partnership patterns more consistent with NHWs (Oropesa and Landale 2004). Despite their low levels of education, which should make them less likely to marry in general, they have high marriage rates and more often engage in homogamous partnering (Rayley 2004; Landale, Oropesa, & Bradatan 2006; Rosenfeld 2008). There is little research as to whether or not Asians, who usually have educational attainment and health patterns that mimic NHWs, maintain similar health outcomes as NHWs when taking relative partner educational attainment into account (Sakamoto, Goyette, and Kim 2009). Despite differences in educational attainment between partners, female primary breadwinners still have to meet both social support and financial obligations within their household (Tichenor 2005), which could ultimately be taxing on their health.

Partnering provides a buffer to economic and social strains that negatively impact health through the transfer of economic (e.g. insurance benefits) and social resources (South 1991; Lund 2002; Jovanovic, Lin and Change 2004; Thornton 2007; Kuo and Raley 2016). Since women occupying dominant roles within relationships often acts as a pathway to martial discord (Banks 2011) women having a subordinate socio-economic position within the household could operate as a protective mechanism from increases in mortality. In particular, qualitative research conducted by Banks (2011) suggests that NHB women especially face difficulties maintaining healthy relationships due to SES discrepancies. When these women occupy a higher SES position than their partner, conflict regarding division of labor arises. The health of a relationship is a key predictor of women’s health outcomes (Robles and Kiecolt-Glaser 2003), so where conflict in relationships arise due to a woman’s superior socioeconomic status we might expect to see poorer health outcomes for those female partners. Moreover, partners who operate within
gender role script expectations where women have less education or a subordinate SES position to their partner would presumably not face the same type of conflict as women with more education than their partner. Yet for NHB women, performing both economic and gender roles within a household coincides with the “strong Black woman” (SBW) script rather than traditional gender roles (Black and Peacock 2011). This SBW role serves as a constraint on performing individual health promoting behaviors because of the particular attention NHB women give to the maintenance of other household members’ health over their own (Black and Woods-Giscombe 2012). Qualitative research reveals that NHB women often wish to be relieved of this gender script because they recognize the toll it takes on their health (e.g. lack of sleep, increased stress, and poor eating habits) (Black and Woods-Giscombe 2012). Their recognition of caregiving and breadwinner status, especially among the highly educated, as a necessary component of Black female identity makes NHB women distinct from other racial and ethnic female identities. This gender script may be key in describing why the social expectations of more educated NHB women would be more stressful compared to women of other races. Moreover, some research indicates that given racial disparities in economic resources this type of contribution to the NHB households may not be as meaningful compared to NHW households (Edin and Kefalas 2005).

Racial differences in marriage markets coincide with racial differences in health among married and cohabitating women. Married NHBs have improved SRH compared to unmarried NHBs, yet regardless of marital status their SRH remains lower than NHWs (Liu and Umberson 2008). Liu and Umberson (2008) do not take into consideration discrepancies in partner educational attainment that potentially masks the implications of Black women’s tendency to partner with men who either have the same or lower educational attainment than themselves.
(Kalmijn 1998; Schwartz and Mare 2005). Evidence suggests that highly educated Black women may face constraints rather than receive benefits from a surplus of educational attainment within their household (Raley, Sweeney, and Wondra 2015). Constraints on Hispanic and Asian women’s health, however, may be confounded by migratory patterns that impact SES and partnerships.

Although current family and health literature can help situate the effects of education on mortality among partnered persons in a meaningful way, gaps in this literature still exist. Examining relative partner effects could shed light on how the pooling of household resources could be more consequential and complex for mortality risk among women who have more education than their partner and among racially diverse women (Lillard and Waite 1995; Lui and Umberson 2008; Brown et al. 2014). This study presents a unique opportunity to examine whether or not higher relative education of women contributes to an increase in mortality and whether the opposite is true for women who have less relative education. Moreover, this study looks to expand current research on social relationships and health advantages by predicting the effects of relative partner education on partnered women’s mortality. Based on results from existing literature I hypothesize the following:

*Hypothesis 1:* Women with more education than their partners will have higher odds of mortality compared to women with the same education level as their partners.

*Hypothesis 2:* Women with lower education than their partners will have lower or similar odds of mortality compared to women with the same education level as their partners.
Hypothesis 3: NHB women with higher educational attainment relative to their partners will have significantly higher odds of mortality compared to NHW, Hispanic, and Asian women with higher educational attainment relative to their partner.

Methods

Data

These data are derived from the National Health Interview Survey Linked Mortality Files (NHIS-LMF) for years 1999 to 2009 with merged prospective mortality follow-up data through December 2011. A probabilistic record matching process linked National Center for Health Statistics (NCHS) participants to National Death Index (NDI) death records (Lochner 2008; NCHS 2013). In order to create this match an NCHS participant record needed to include identifying information such as social security number, full name, and date of birth, which were weighted and scored for accuracy (NCHS 2013).

The NHIS is an annual cross-sectional household survey of non-institutionalized participants representative of the US population. Data are collected through in-person or scheduled phone household interviews. The response rate is nearly 80% (Lochner 2008). Since NHIS is a household level survey information on socio-economic status indicators (i.e. educational attainment, race, and employment status) are collected from all members of the household (Lochner 2008). Thus, partner education, race, and employment status, in addition to individual level characteristics, can be included using the unique identifiers for each person and for each household.

Study Sample
The sample is limited to women who are married to or cohabiting with men and between the ages of 25-65. These age ranges started at age 25 because most individuals have completed or are near completion of their education by this age and ended at 65 because of mortality selection at the oldest ages (Ross and Wu 1996). Beginning with the total sample of men and women (n=991,242), I excluded any persons who indicated they were not partnered (i.e. married or cohabitating) at the time of data collection, who fell outside of the age range criteria from the analysis, and who reported a relationship with a same sex partner. I then created two datasets: one that removed all partnered male cases and the other that included only partnered male’s key variables used to construct the partner variables reported below. A remaining small proportion of cases with missing data on key variables were excluded (6.7%); the majority of which were missing on the income to poverty ratio variable (22%). The final sample included 114,531 partnered women ages 25-65.

Measures

The dependent variable is all-cause mortality among partnered women. The mortality variable is dichotomized as (0) living (1) deceased upon follow-up. This mortality variable is created from death record information linked to NHIS records through state vital statistics offices (Lochner 2008). Each death record includes information such as underlying and contributing cause of death, however, for the purposes of this study the mortality variable will only pertain to all-cause mortality.

The main predictor variable is the female respondent’s educational attainment relative to her male partner’s educational attainment. Subtracting the female respondent’s educational attainment from her male partner’s educational attainment creates this variable. Educational attainment is a categorical variable with 22 categories that includes (1) never having attended
primary school, completing (2) Grade 1, (3) Grade 2, (4) Grade 3, (5) Grade 4, (6) Grade 5, (7) Grade 6, (8) Grade 7, (9) Grade 8, (10) Grade 9, (11) Grade 10, (12) Grade 11, (13) Grade 12, no high school diploma, (14) High school graduate, (15) GED (or equivalent), (16) some college (no degree) (17) associates degree (technical training), (18) associates (academic degree), (19) bachelor’s degree, (20) master’s degree, (21) professional degree, and (22) doctoral degree. The relative partner educational attainment variable is categorized as a female partner with more education than her partner (a difference in educational attainment ranging from 1 to 22) and female partner having less education than her partner (a difference in educational attainment ranging from -1 to -19). Partners with the same educational attainment at the time of demographic data collection serves as the referent group (a difference in educational attainment equal to zero).

**Individual- and household-level Controls**

Race is included as non-Hispanic Black, Hispanic, and Asian where NHW is the referent category. Demographic controls include: marital status, dichotomized as (0) cohabitating (1) married, age (continuous), female respondent’s educational attainment (continuous), partners are the same race dichotomized as (0) same race (1) different race, his employment status dichotomized as (0) employed (1) unemployed or not in workforce, her employment status categorized as employed (referent), unemployed, and not in workforce, her immigration status dichotomized as (0) US citizen (1) not a US citizen, and her insurance status dichotomized as (0) uninsured (1) insured. Socioeconomic controls included: household poverty dichotomized as (0) at or above poverty (1) below poverty, and the total number of children in each household is calculated through summing the number of people under the age of 18 that are identified as a

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1 For the ease of viewing the 22-category educational attainment variable was categorized as (1) less than high school (2) high school (3) some college and (4) bachelor’s and above in Table 1.
child within the household. The interview survey year and age-squared are also included but not shown in model results.

**Analytic Strategy**

Stata version SE 13.0 was used to perform the statistical analyses. Descriptive information and tests of proportional differences and means are provided for the full sample by race and ethnicity. The test of proportional means compares the mean age for each race category (e.g. NHBs, Hispanics, and Asians) to non-Hispanic whites. Tests of proportional differences compares each race category to non-Hispanic whites for all non-continuous independent variables. For the multivariate analyses logistic regression is used to estimate the odds of experiencing mortality during the follow-up from any cause.

**Results**

Table 1 provides unweighted descriptive statistics for the full sample by race and ethnicity. For the full sample each variable aligns with expectations, for example, a majority of the sample is married (92.2%), over half (59.1%) of partnered women have received an education above a high school diploma, and 36.4% of the sample are in an educationally homogamous partnership. Proportional tests of differences reveal that statistically significant differences exist for nearly all of the independent predictors and controls when comparing racial and ethnic minorities to NHWs. For example, a larger proportion of black women and a smaller proportion of Asian women died over the follow-up period, compared to the proportion of white women who died. For the main predictor variable the proportion of NHBs with more education relative to their partner is significantly different from the proportion of NHWs; similar findings are shown for Hispanics and Asians. The proportion of each racial and ethnic minority who has less education relative to their partner is significantly different compared to partnered NHW
women. For instance, the 25.8% of NHB women who have less education than their partner is significantly less than their NHW counterparts (35.9%). Similar statistically significant differences between partnered Hispanic women with less education than their partner (31.7%) and Asian women with less education than their partner (34.1%) compared to NHWs are found. The proportion of Asians who have no insurance and are not in the workforce is not significantly different than proportions for NHWs.

**Insert Table 1 about here**

The logistic regression models in Table 2 display odds ratios and confidence intervals predicting mortality for the full sample of partnered women. Model 1 shows that, after adjusting for age, women with more education relative to their partner have 23% higher odds of mortality, compared to women with the same relative education as their partner. In Model 2, women with higher education relative to their partner have 21% higher odds of mortality compared to women with the same relative education as their partner, controlling for his individual characteristics (e.g. employment status and race) and her individual characteristics (e.g. age, race, marital status, employment status, immigrant status, insurance status, poverty status, and number of children in the household) (net her individual educational attainment). Every 1 child in the household is associated with 8% lower odds of mortality compared to women with no children in the household. A partnered woman living below the poverty line has 61% higher odds of mortality compared to women living at or above poverty. Having a male partner who is unemployed or not in the labor force leads to 35% higher odds of mortality compared to a woman who has an employed male partner. Women who are married have 23% lower odds of mortality compared to
women who are cohabitating. Race of partners, immigrant status, and insurance status have no statistically significant associations with mortality.

Model 3 incorporates her education while controlling for all demographic and socioeconomic variables in order to evaluate whether or not her education is a major contributor to the relationship between relative partner education and odds of mortality. After accounting for her own educational attainment, women with more education than their male partner have 32% higher odds of mortality compared to women with the same education as their male partner. NHB women have 39% higher odds of mortality compared to their NHW counterparts. Moreover, women who are married have 22% lower odds of mortality compared to women who cohabitate. There are no changes in the effect of having a child in the household on mortality from Model 2. A partnered woman living below poverty has 40% higher odds of mortality compared to a woman at/above poverty. Women who have a partner who is unemployed or not in the workforce have 29% higher odds of mortality compared to women with an employed partner.

Model 4 includes interaction terms that test whether the woman’s racial and ethnic identity impacts the effect of relative partner education on mortality. Odds ratios for the two-way interaction terms suggest that the effects of relative partner education on mortality do not vary by race and ethnicity of the woman. Further, main effects within the model yield statistically significant results. The main effect of relative partner education describes the effect of NHW women’s relative partner education on mortality. The main effect for a NHW partnered woman having more education relative to her partner on mortality is statistically significant. NHW women that have more education relative to their partner have 40% higher odds of mortality compared to a partnered woman with the same education as her partner. The main effect for the
primary independent predictor describes the effect of race on mortality for women who have the same education as their partner. For instance, the effect of NHB women who have the same education as their partner on mortality is statistically significant. NHB women with the same education as their partner have 58% higher odds of mortality compared to all other partnered women with the same education as their partner.

Insert Table 2 about here

Discussion

The impact of heterogamous pairing places more educated women at higher odds of dying compared to those who were engaged in educationally homogamous partnerships at the time of demographic data collection; the same, however, is not true for less educated women. Women with less education relative to their partner did not significantly affect the odds of mortality among partnered women. The interaction between race and relative partner education suggests that an association between a woman having more education than her partner and her odds of mortality does not differ by race and ethnicity. The affect of relative partner education on the mortality of women who have higher education relative to their partner may be equally important across racial and ethnic groups. These data present new findings about how partner’s education affects women’s mortality.

With the exception of Black women, educational attainment above all else is considered the most common way to homogamously pair (Schwartz and Mare 2005; Schwartz 2013; Rosenfeld 2008). While the benefits of partnering have been examined, this study provides clarification as to under what circumstances heterogamous partnering is detrimental. These data reveal that higher relative educational attainment among women is costly to their mortality compared to women who are homogamously partnered. One explanation offered to describe the
dynamic of a woman having poorer health outcomes when they are more educated than their male counterpart comes from feminist theorists. Tichenor (2005) suggests that threats to gender identity and masculinity can spawn from higher wages or, in the case of this study, higher educational attainment. Having more education than a male partner could lead to worse health outcomes because of increased burden and possible effects of gender role discrepancies. Further data would need to be collected to examine a direct connection between these concepts. Moreover, although the literature suggests performance of gender roles may operate under different contexts across racial and ethnic groups (Black and Woods-Giscombe 2012) this study did not yield evidence to support those findings.

The “strong Black women” script suggests that NHB women are highly likely to take on the role of caregiver and primary breadwinner within the household as part of their identity (Black and Woods-Giscombe 2012). The expectation of performing dual roles has shown to lead to increases of stress among NHB women (Black and Woods-Giscombe 2012). The results from these data, however, do not place NHB women with more education than their partner in a position for poorer health outcomes than any other group. In fact the interaction between race and partner education does not show distinctions between NHBs and any other racial and ethnic group. Factors that contribute to marriage market limitations across racial groups could be the key to understanding how women in general sort themselves into these relationships and why their mortality is so uniquely impacted by “marrying down.”

In a reconceptualization of Grossman’s good health model, Jacobson (2000) argues that households act as a producer of health, where health is a commodity that the household invests in with educational attainment. Therefore the socioeconomic investment is a single unit that each household member benefits from. Studying effects of relative partner education, in particular
among partnered women, rather than individual education effects on mortality among married men assists in bolstering the narrative on how differences in others’ SES can influence health. The pitfall with this model however, is that it does not lend explanations for differences between household members (i.e. less educated partners) that might not be optimal for the household. In these analyses that point is addressed, revealing the less optimal health option in a household appears to be women who are more educated than their partner. Given the results of these data here, however, the problem may lie in homogamous pairing between individuals of low educational attainment. In theory, partnering benefits for women comes from gains made through their partner. If, however, their partner comes into a partnership resource poor this may not lead to the presumed positive effects of partnering with someone similar. Perhaps, that is why lower relative educational attainment among women has no effect—their receipt of benefits from their partner may not be as impactful as the literature has previously presumed.

This study is not without its limitations. Due to low sample sizes these data do not address the ethnic subgroups that create the Hispanic and Asian pan-ethnic groups. Previous studies show that educational differences exist between ethnic subgroups, which could obscure more precise findings. For instance, the regression models suggest there is no difference between partnered Asian and NHW women; this could in part be due to this group incorporating multiple Asian groups who are distinct. Future studies should look to collect more data in order to better reflect the diversity of races. One strength of this study is that it provides evidence for the use of individual education as a control in models that use household data to predict health outcomes. The bivariate relationship between relative partner education and mortality is suppressed until the female partner’s individual education is controlled for. When the woman’s individual education is accounted for within the models there is an increase in odds of mortality among
women with more education relative to their male partner. If utilized in other studies, individual educational attainment as a control will assist in providing more consistent findings throughout the literature on partner health. Another strength of this study includes the utilization of the NHIS. These data provided individual-level demographics for the entire household, which allows for the creation of the relative education, partner’s employment status, and partner’s race variables. Moreover, future studies could utilize restricted NHIS data to account for the effect of marital transitions over time that could potentially impact mortality outcomes among women.

Although this study’s primary focus was on mechanisms that effect odds of mortality, a broader implication of this study is first, the importance of education to the individual and second, the importance of education of others within the household as well. Studying mortality in this way can help us reflect on how to prevent future deaths or reduce mortality disparities for women. One pathway to improving mortality outcomes includes the creation of policies that promote social mobility through educational opportunities. Another pathway may include changing socialization processes that place females in a subordinate gender role inside and outside of partnerships. Shifts in these processes could assist in the normalization and acceptance of women’s improved positionality potentially leading to indirect effects on mortality outcomes for highly educated women. This study provides an opportunity to broaden the scope of how we study women’s health and create a conversation about power, mortality, and the importance of education.
References


Table 1. Descriptive Statistics of NHIS Sample of Partnered Women by Race with Significant Proportions

<table>
<thead>
<tr>
<th>Education Attainment</th>
<th>White</th>
<th>Black</th>
<th>Hispanic</th>
<th>Asian</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Sample</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>100.0</td>
</tr>
<tr>
<td>Relative Partner Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Same education</td>
<td>36.4</td>
<td>35.9</td>
<td>36.5</td>
<td>33.4</td>
<td>42.7</td>
</tr>
<tr>
<td>She has more education</td>
<td>32.9</td>
<td>32.1</td>
<td>37.7</td>
<td>34.9</td>
<td>23.2</td>
</tr>
<tr>
<td>She has less education</td>
<td>31.5</td>
<td>32.0</td>
<td>25.8</td>
<td>31.7</td>
<td>34.1</td>
</tr>
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<table>
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<th>Age (mean (sd))</th>
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<td>98.0</td>
</tr>
<tr>
<td>Dead</td>
<td>2.0</td>
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<table>
<thead>
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<th>Marital Status</th>
<th></th>
<th></th>
<th></th>
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<p>| TOTAL                 | 114,531      |             |              |            |</p>
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<th>Race of Partner</th>
<th>Same Race</th>
<th>Different Race</th>
<th>Immigrant Status</th>
<th>US Citizen</th>
<th>Not US Citizen</th>
<th>Insurance Status</th>
<th>Insured</th>
<th>Uninsured</th>
<th>Employment Status</th>
<th>Employed</th>
<th>Unemployed</th>
<th>Not employed</th>
<th>Poverty Status</th>
<th>Above Poverty</th>
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Notes: All percentages are rounded to two decimal places.