

Interracial Marriage and Self-Reported Health of Whites and Blacks in the United States

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Received: 21 September 2016 / Accepted: 9 May 2017
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Abstract This study examines the self-reported health of 180,291 married non-Hispanic blacks and whites in interracial versus endogamous marriages. Data are from the National Health Interview Survey pooled over the period 1997–2013. The results from ordinal logistic regressions show that non-Hispanic whites intermarried with non-Hispanic blacks, non-Hispanic whites intermarried with non-Hispanic other races, and non-Hispanic white women with Hispanic husbands report significantly poorer health than their endogamous counterparts. Furthermore, non-Hispanic whites with non-Hispanic black spouses also fare worse than their interracially married peers with Hispanic spouses. In contrast, the self-reported health of married non-Hispanic blacks shows no significant difference between the interracially and the endogamously married. Our findings highlight the theoretical significance of spousal characteristics and couple-level contexts in the household production of health.

Keywords Interracial marriage · Self-reported health · Spousal race · Racial pairing

Introduction

Research on marriage and health consistently documents better mental and physical health, and lower mortality rates, among married people compared to the unmarried (Rendall et al. 2011; Waite and Gallagher 2000). Much less attention has been given

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to the health implications of different social characteristics that married couples bring into marriage, such as race/ethnicity or socioeconomic status. Yet, past research has demonstrated that the union of different social traits in a marriage can be consequential for marital well-being (Amato et al. 2003; Bratter and King 2008; Clarkwest 2007). To address this research gap, the current study examines the significance of racial pairings to health outcomes in the context of marriage.

A small but growing body of literature shows that partnering across racial lines carries significant health implications. For example, Bratter and Eschbach (2006), using pooled National Health Interview Survey (NHIS) data, found that intermarried white women with non-white spouses were more likely to be severely distressed than their endogamous counterparts. Additionally, intermarriage is associated with higher rates of distress for non-black individuals married to blacks compared to their endogamous peers, and for non-Hispanic women with Hispanic husbands compared to non-Hispanic men with Hispanic wives. A recent study by Barr and Simons (2014) also discovered that blacks with non-black partners reported worse physical health and more elevated psychological distress than those in same-race relationships in a regional black sample from Iowa and Georgia.

Building on the existing literature, we address three research questions in this study. First, how does the self-reported health of the interracial married compare to that of their endogamous peers? Second, do health behaviors and psychological distress explain the association between interracial marriage and self-reported health? Third, does the association between interracial marriage and self-reported health vary by gender? Our analyses focus on non-Hispanic whites (hereafter, whites) and non-Hispanic blacks (hereafter, blacks) in different marital racial pairings, because past research shows that intermarried whites have very different experience than intermarried blacks (Yancey 2003).

Background

Interracial Marriage in the US

Interracial marriages, particularly those between blacks and whites, have been stigmatized and criminalized throughout U.S. history. It was not until the Loving versus Virginia case in 1967 that bans on interracial marriage were abolished by the Supreme Court as unconstitutional (Romano 2003). Yet, even after the legalization of interracial marriage, the public's attitude toward marriage across racial lines remained negative for decades (Dalmage 2000; Yancey and Emerson 2001). Interracial marriage is still viewed with reservation in some contexts even today, as evident in a recent case of the denial of a marriage license to an interracial couple in the state of Louisiana (Ellzey 2009). These circumstances have created a stressful environment for interracial couples, with potential negative health consequences. Against this backdrop, we develop our arguments regarding the health contrast between the interracial and the endogamously married with theories and empirical findings on interracial unions, marriage, and health.

Health-Enhancing Resources: Interracial Versus Endogamous Marriages

Marriage confers health benefits through health-enhancing resources such as better financial security, spousal control of health behavior, and social and emotional support (Liu and Umberson 2008; Waite and Gallagher 2000). Yet, existing literature indicates that interracial couples may be disadvantaged in some of these important resources compared to same-race couples.

Although few studies have examined how health behaviors or spousal regulation of health differ between interracial and endogamous couples, emerging evidence shows that the interracially married are more likely to exhibit unhealthy behaviors than their endogamous counterparts, due in large part to their perceived marginalization (Leadley et al. 2000; Lehmillier 2012). For example, a recent study found a higher prevalence of binge drinking and alcohol problems among interracially married men aged 18 years and older compared to their endogamously married male counterparts (Chartier and Caetano 2012). This suggests that weaker social controls of health behaviors may exist among interracial couples compared to same-race couples. Moreover, interracial couples often face disapproval of and lack of support for their relationships (Childs 2005; Djamba and Kimuna 2014; Romano 2003), and are thus more likely to feel socially isolated in family, work, or leisure contexts, a known risk factor for health (Childs 2005; Hibbler and Shinew 2002).

In light of these differences in health-promoting resources such as social support and spousal control of health behavior, we expect that the interracially married have poorer self-reported health than the endogamously married, controlling for sociodemographic factors.

Marital Distress: Interracial Versus Same-Race Marriages

In addition to resource differences, research suggests that interracial couples may experience greater marital distress than their peers in same-race unions, which could also compromise their health.

Studies suggest that individuals in interracial marriages experience greater psychological distress due to stressors emanating from their minority status, which could take a toll on the quality of their relationships (LeBlanc et al. 2015). Romantic relationships across racial boundaries have also been shown to be more prone to marital strains and dissolution (Fu and Wolfinger 2011; Wang et al. 2006; Zhang and Van Hook 2009). For example, Bratter and King (2008) discovered that interracial couples have higher overall divorce rates, particularly in the late-1980s marriage cohort. Additionally, some studies have found that the interracially married are more likely to report lower marital quality or less commitment to their relationships (Amato et al. 2003; Hohmann-Marriott and Amato 2008; Lehmillier and Agnew 2006, 2007). More intimate partner violence is also observed among interracial couples compared to their endogamous white and ethnic minority peers (Chartier and Caetano 2012; Fusco 2010). These studies all indicate greater marital distress, of various sorts, among the interracially married compared to their same-race counterparts. As marital distress has been shown to have important mental and physical health implications (Robles and Kiecolt-Glaser 2003; Waite and Gallagher

2000), the interracially married may have worse self-reported health than their endogamous peers.

The Selection Perspective

In addition to differences in health-enhancing resources and marital distress, health differentials between the interracially and the endogamously married may also arise from selection processes. Although scant research exists on individuals with differential health profiles selecting into interracial versus endogamous marriages (for an example, see Kroeger and Dush 2008), studies do suggest that selection factors linked to both interracial marriage and health might be at work.

The status exchange theory suggests that partners in interracial marriages, primarily between blacks and whites, are sometimes selected by socioeconomic status, whereas more-educated black men sometimes marry less-educated white women in an exchange for white women's higher racial status (Fu 2001; Gullickson 2006; Hou and Myles 2013). In light of the close association between education and health, it is possible that at least for white women in black–white marriages, adverse health selection into intermarriage could be a possibility. Additionally, recent studies show that the interracially married are more likely to have a complex marital history, a characteristic associated with worse health (Fu 2010). In view of these theoretical and empirical patterns, we expect that selection factors may also play a role in the link between interracial marriage and health.

Based on the literature discussed above, we present our first hypothesis:

H1a Among blacks and whites, the interracially married have poorer self-reported health than the endogamously married.

Intermarried whites with black spouses may have worse health profiles not only compared to endogamous whites but also compared to their peers in other interracial pairings. A growing body of literature argues that race relations in the U.S. can be characterized by a black/non-black divide in which blacks are alienated from whites as well as from other minority groups such as Asians and Latinos, a phenomenon referred to as “Black Exceptionalism” (Kroeger and Williams 2011; Lee and Bean 2007b; Yancey 2003). The notion of Black Exceptionalism can also be applied to interracial marriage in the U.S., as intermarriage with blacks, and particularly intermarriage between blacks and whites, remains rarer and receives less support than do other interracial pairings (Qian 2005; Yancey 2003). For example, recent research has shown that whites with black partners could face greater discrimination and disapproval than intermarried whites with non-black partners (Yancey 2007). Kroeger and Williams (2011) constitute the first empirical evidence associated with “Black Exceptionalism,” illustrating that interracial relationships involving a black partner are significantly associated with more depressive symptoms than same-race relationships or interracial relationships with non-black partners. Thus, we present a corollary hypothesis:

H1b Whites in white–black marriages report significantly poorer health than their peers in other interracial pairings.

Given the literature on Black Exceptionalism in interracial contexts, we do not expect to observe a similar pattern among interracially married blacks.

Furthermore, while researchers have begun to note the health implications of interracial marriages, few have addressed potential explanations for the observed associations. Guided by the resource and stress perspectives, our study takes a further step to assess health behaviors and psychological distress as possible explanations for the link between interracial marriage and self-reported health among whites and blacks. We expect that.

H2 Health behaviors and psychological distress partially explain the health gaps between the interracially married and their endogamously married counterparts.

The Role of Gender

Lastly, we explore gender difference in the relationship between interracial marriage and health. Historically, racial boundary patrolling was more stringent in the U.S. for white women than white men, for fear of white “racial purity” being compromised by offspring born to unions of white women and non-white men, particularly black men. In contrast, interracial intimacy for white men was received with more tolerance, reflecting the gender hierarchy in the patriarchal system of the U.S. (Childs 2005; Romano 2003). White women could thus face greater family disapproval and social stigma for being in an interracial relationship, particularly with a black man. Moreover, white women, particularly those of lower socioeconomic status, also face social stigma couched in the suspicion of status exchange—the notion that in interracial relationships with black men, those women exchange their higher racial status for higher socioeconomic status (Dalmage 2000; Gullickson 2006; Kalmijn 2010). As a result, intermarriage could be particularly stressful for white women.

Yet, the gender asymmetry between white men and women in interracial unions does not have an obvious counterpart among interracially married blacks. Historically, unlike white men involved in interracial sexual unions who were protected by the patriarchal and white-dominant system, black men and women were both victimized as a consequence of interracial sexual contact with whites; black men were often physically abused and even lynched, and black women were physically and sexually abused. Additionally, both black men and women in interracial relationships, particularly with whites, have been subject to the stereotype of “betraying” the black community (Childs 2005). Therefore, from a theoretical standpoint, gender differences in the link between interracial marriage and self-reported health are expected to be observed among non-Hispanic whites, but not blacks.

Despite the theoretical prediction, empirical findings regarding the role of gender have been limited and mixed. Bratter and Eschbach (2006) found distinct gender differences in the link between interracial marriage and psychological distress, with significantly elevated distress observed primarily among intermarried non-Hispanic white women, not men. In contrast, Miller and Kail (2016) only found limited evidence on the moderating role of gender in the association between interracial

marriage and self-reported health. With the caution of limited evidence on gender differences in mind, we rely on theoretical expectations to formulate the following hypothesis regarding gender differences:

H3 Controlling for other factors, health gaps between the interracially married and those in same-race marriages are larger for white women than white men; in contrast, health differentials between interracially and endogamously married blacks are similar between men and women.

Data and Methods

Data

The data come from the harmonized version of the National Health Interview Survey from 1997 to 2013, retrieved from the Integrated Health Interview Series (IHIS) administered by the Minnesota Population Center (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 National Center for Health Statistics (NCHS) to collect data on a wide range of health-related topics; the surveys contain rich sociodemographic as well as economic information. The samples are representative of the non-institutionalized civilian population in the U.S. (National Center for Health Statistics 2010).

To identify marital racial pairings, we used information on race/ethnicity from respondents and their spouses. We identified marital unions using reports of respondents' relationship to the householder/reference person and matched married couples with household IDs. The NHIS is a household survey in which all household members are interviewed. Basic information such as household composition, sociodemographic characteristics, basic indicators of health status, and the use of healthcare services was collected from all household members. Moreover, the NHIS randomly selected one sample adult within each family in the household to participate in additional question modules (Botman et al. 2000). Since information on some measures used in our study, such as drinking, smoking, body weight, and psychological distress, comes only from these sample adults, we kept only the sample adults in our analysis of matched married couples. The final response rate of adult samples over our observation periods ranges from 60.8 to 80.4%; overall, 180,408 black and white adults in heterosexual marriages were selected for our analyses. The proportion of the final sample with missing values ranges from .06 to 17.18%, though only one variable, poverty status (at 17.18% missing), is missing in more than 3% of the cases. We employed multiple imputation techniques to impute the variables with missing values. We deleted 117 cases (.06%) with missing values on self-reported health after multiple imputations, as research suggests that this approach renders better estimates (Von Hippel 2007). The final sample consists of 180,291 cases. Five imputed datasets were produced using the SAS procedure "PROC MI".

Measures

Self-reported health is measured by the question that asks respondents to rate their own overall health on a five-point Likert scale ranging from 1 (“excellent”) to 5 (“poor”). We reversed the original coding so that higher values indicate better health. Past research has shown self-reported health to be a good summary measure of an individual’s actual health condition and a strong predictor of future mortality (Idler and Benyamini 1997).

Marital racial pairings are identified through the combination of respondents’ own and their spouses’ race/ethnicity. *Spousal race/ethnicity* contains the following four categories: white, black, other races (including Aleut/Alaskan Native/American Indian, Asian/Pacific Islander, and other races), and Hispanics. Together with respondents’ own race (black or white), this categorization produces seven marital racial pairings in the final sample: “same-race white,” “same-race black,” “white–black,” “white–other race,” “white–Hispanic,” “black–other race,” and “black–Hispanic.”

Health behaviors are indexed by three measures: drinking, smoking, and body weight. *Drinking* has three categories: “lifetime abstainer” (reference group), “former drinker,” and “current drinker.” *Smoking* has the following three categories: “current smoker” (reference group), “former smoker,” and “non-smoker.” *Body weight* has substantial health implications and is often used as a proxy for health behaviors and lifestyles (Sobal et al. 2003). The IHIS provides body mass index (BMI) measures calculated from respondents’ self-reported height and weight. We followed the instructions of the Centers for Disease Control and Prevention and created the following categorical measure, using the continuous BMI index: “underweight” ($BMI < 18.5$), “normal” ($18.5 \leq BMI \leq 24.9$), “overweight” ($25 \leq BMI \leq 29.9$), and “obese” ($BMI \geq 30$). “Normal” is the reference category.

Psychological distress is measured on the Kessler 6 (K6) scale, which has been widely employed to screen for non-specific mental illness (Kessler et al. 2002). The K6 scale uses six questions to detect the presence of mental health symptoms. Respondents are asked about how often they felt: (1) that everything was an effort, (2) hopeless, (3) nervous, (4) restless or fidgety, (5) so sad that nothing could cheer them up, and (6) worthless over the past 30 days. The values range from 0 (none of the time) to 4 (all of the time) for each question. We sum respondents’ individual scores for the six questions (ranging from 0 to 24) and divide them into three groups, following previous research (Liang and Chikritzhs 2013). Respondents with a total score from 0 to 6 are considered “not or minimally psychologically distressed” (the reference group), those with a score from 7 to 12 are classified as “moderately distressed,” and those with a score from 13 to 24 constitute the “severely distressed”.

A series of sociodemographic covariates are controlled for in the models. *Gender* is a binary indicator with “female” as the reference category. *Age* (centered at 18 years old) and *survey year* (centered at 1997) control for potential temporal variations. We also controlled for respondents’ *immigration status* to avoid potential bias associated with immigrants’ better health (Antecol and Bedard 2006). As the

distribution of interracial marriage and attitudes toward such unions show considerable regional differences (Qian 1999), we control for *region* in our models with “south” as the reference category. Finally, respondents’ *educational attainments* are included in an attempt to reduce bias introduced via selection processes, as past research has shown that education is an important determinant of entry into interracial marriage (Qian and Lichter 2007), and a strong predictor of health and mortality (Miech et al. 2011; Ross and Wu 1995). Respondents’ education is recoded into four groups: “less than high school” (reference category), “high school graduates,” “some college,” and “college graduates or above”.

Analytic Approach

We employ ordinal logistic regression models separately for blacks and whites to estimate health differentials by marital racial pairings. Our decision to perform race-specific analyses is based on analytical and theoretical reasons. Previous research suggests that interracial marriage may have different dynamics among blacks and whites (Romano 2003; Yancey 2003). Bratter and Eschbach (2006), also using the NHIS data, found significantly elevated distress in black–white marriages among whites but not among blacks, compared to their endogamously married peers. Our preliminary analysis with the combined sample (not shown here) showed significant racial variation in the associations between spousal race and self-reported health, lending support to our decision to use race-specific models.

In our race-specific models, we compare respondents in interracial marriages to those in same-race marriages. Therefore, “white spouse” is the reference category for *spousal race* in the models for whites, whereas “black spouse” is the reference category in the models for blacks. Our baseline model estimates the association between spousal race and self-reported health, controlling for the sociodemographic covariates. Models 2 and 3, respectively, assess the role of health behaviors and psychological distress as explanations. Model 4 presents results from the full model. Lastly, model 5 tests for gender differences, controlling for all the covariates. All the ordinal logistic models were weighted to adjust for clustering effects from the complex survey design of the NHIS, using the “PROC SURVEYLOGISTIC” procedure in SAS. Modeling results from the imputed datasets are further consolidated with “PROC MIANALYZE”.

Results

We briefly describe the sample characteristics in Table 1. Most respondents in our sample report having excellent, very good or good health, and most are married to a white spouse. Additionally, there are approximately equal percentages of males and females, with a mean age of around 50. Most respondents reside in either the South or the North Central/Midwest regions, and close to 95% are US born. About 60% of respondents report having at least some college education. In terms of health behaviors, most respondents are non-smokers, and most are current drinkers.

Table 1 Weighted descriptive statistics of sample characteristics ($N = 180,291$)

	%
Self-reported health	
Poor	2.71
Fair	8.14
Good	24.56
Very good	33.75
Excellent	30.85
Spousal race	
Non-Hispanic white	88.33
Non-Hispanic black	8.48
Non-Hispanic other races	1.15
Hispanic	2.04
Age (mean and standard deviation)	49.49 (.062)
Female (male = 0)	49.96
Non-Hispanic black (non-Hispanic white = 0)	8.77
Region	
Northeast	18.71
North Central/Midwest	27.53
South	37.20
West	16.56
U.S. born (immigrant = 0)	94.23
Education	
Less than high school	9.91
High school graduate	29.17
Some college	29.09
College graduate or above	31.83
Smoking	
Current smokers	17.93
Past smokers	27.89
Non-smokers	54.18
Drinking	
Abstainers	17.19
Past drinkers	16.33
Current drinkers	66.48
Body weight	
Underweight	1.30
Normal	33.65
Overweight	36.28
Obese	28.77
Psychological distress	
Minimally/not distressed	91.36
Moderately distressed	6.46
Severely distressed	2.18

Around 65% are either overweight or obese. The majority of respondents report either no or minimal psychological distress.

Interracial Marriage and Health among Whites

Table 2 presents the ordinal logistic model results for whites. Model 1 shows that, controlling for the sociodemographic covariates, spousal race is significantly associated with self-reported health. Whites intermarried with blacks, other races, and Hispanics show significantly poorer health than their counterparts in endogamous marriages. Specifically, whites with black, other-race, and Hispanic spouses, respectively, have 32.8% ($[1 - e^{-.398}] \times 100$), 23.4% ($[1 - e^{-.267}] \times 100$), and 8.4% ($[1 - e^{-.088}] \times 100$) lower odds of reporting better health than those with white spouses. Hypothesis 1a is thus supported among whites. Our additional analysis using “black spouse” as the reference category (results available upon request) shows that whites in white–black marriages not only fare worse in self-reported health than endogamously married whites, but also worse than their white peers intermarried with Hispanic spouses (odds ratio = 1.36, $p = .0003$), a finding in line with the logic of black exceptionalism and providing partial support for Hypothesis 1b.

Models 2 and 3, respectively, assess health behaviors and psychological distress as explanations for the significant associations observed in model 1 between interracial marriage and health. Model 2 shows that adjusting for health behaviors narrows the gap between whites intermarried with blacks and their endogamously married white peers. The estimated coefficient is reduced by more than 27% ($\left[\frac{-0.398 - (-0.289)}{-0.398} \right] \times 100$). In contrast, health behaviors did not account much for the health gaps between the other two groups of intermarried whites and their peers in same-race marriages. Model 3 indicates that adjusting for psychological distress only minimally explains the poorer health associated with the marriage of whites to blacks and other races. However, controlling for psychological distress significantly reduces the estimated coefficient for whites with Hispanic spouses by 25% ($\left[\frac{-0.088 - (-0.066)}{-0.088} \right] \times 100$). We conducted additional mediation analysis for psychological distress, following the approach suggested by Iacobucci (2012), and the results (not shown here) indicated that psychological distress is a significant mediator for the health gap between whites with Hispanic spouses and their endogamous peers. However, given the small effect size and the large sample used in this study, the results here should be interpreted with caution.

Model 4, the full model, controls for both health behaviors and psychological distress. Compared to models 2 and 3, simultaneously adjusting for the two factors does not further explain the estimated health gaps between whites intermarried with blacks and Hispanics and their endogamously married peers; the two factors together moderately explain the poorer health of whites intermarried with other races compared to those in same-race marriages. In sum, our analyses of health behaviors and psychological distress as possible explanations provide empirical

Table 2 Ordinal logistic regressions of interracial marriage and self-reported health, non-Hispanic white (N = 160,446)

	Model 1	Model 2	Model 3	Model 4	Model 5
Spousal race (non-Hispanic white = 0)					
Non-Hispanic black	-.398 [.089]***	-.289 [.093]**	-.389 [.098]***	-.288 [.103]**	-.276 [.164]
Non-Hispanic other races	-.267 [.009]***	-.245 [.008]***	-.248 [.024]***	-.230 [.022]***	-.206 [.037]***
Hispanic	-.088 [.003]***	-.086 [.008]***	-.066 [.005]***	-.066 [.010]***	.026 [.011]*
Gender × spousal race					
Female × non-Hispanic black					-.018 [.085]
Female × non-Hispanic other races					-.063 [.075]
Female × Hispanic					-.194 [.036]***
Smoking (current smoker = 0)					
Past smoker		.485 [.007]***		.398 [.007]***	.398 [.008]***
Non-smoker		.729 [.009]***		.626 [.007]***	.626 [.007]***
Drinking (non-drinker = 0)					
Past drinker		-.205 [.011]***		-.161 [.013]***	-.161 [.013]***
Current drinker		.382 [.005]***		.383 [.005]***	.383 [.005]***
Body weight (normal = 0)					
Underweight		-.421 [.023]***		-.387 [.013]***	-.388 [.013]***
Overweight		-.291 [.002]***		-.288 [.003]***	-.288 [.003]***
Obese		-.940 [.011]***		-.909 [.011]***	-.909 [.011]***
Psychological distress (not/minimally distressed = 0)					
Moderately distressed			-1.376 [.019]***	-1.281 [.021]***	-1.281 [.021]***
Severely distressed			-2.477 [.034]***	-2.279 [.032]***	-2.279 [.031]***
Survey year (centered at 1997)	-.014 [.001]***	-.011 [.001]***	-.012 [.001]***	-.009 [.001]***	-.009 [.001]***
Age (centered at 18 years old)	-.034 [.001]***	-.034 [.001]***	-.036 [.0004]***	-.036 [.0004]***	-.036 [.0004]***
Female (male = 0)	-.036 [.006]***	-.123 [.010]***	.003 [.007]	-.080 [.010]***	-.076 [.009]***
Region of residence (South = 0)					
Northeast	.214 [.007]***	.147 [.007]***	.198 [.013]***	.134 [.011]***	.134 [.011]***

Table 2 continued

	Model 1	Model 2	Model 3	Model 4	Model 5
North Central/Midwest	.103 [.014]***	.078 [.010]***	.093 [.011]***	.067 [.006]***	.069 [.006]***
West	.199 [.010]***	.120 [.011]***	.199 [.007]***	.124 [.007]***	.124 [.007]***
U.S. born (immigrant = 0)	.064 [.010]***	.130 [.007]***	.059 [.008]***	.120 [.004]***	.120 [.004]***
Education (less than high school = 0)					
High school graduate	.726 [.033]***	.632 [.035]***	.630 [.024]***	.554 [.026]***	.553 [.026]***
Some college	1.040 [.030]***	.869 [.032]***	.922 [.024]***	.778 [.026]***	.778 [.026]***
College graduate or above	1.682 [.025]***	1.318 [.031]***	1.522 [.018]***	1.203 [.024]***	1.202 [.024]***
Cut 2	3.920 [.037]***	3.869 [.031]***	4.421 [.044]***	4.374 [.038]***	4.372 [.039]***
Cut 3	2.381 [.020]***	2.296 [.008]***	2.772 [.024]***	2.693 [.016]***	2.691 [.016]***
Cut 4	.688 [.016]***	.536 [.005]***	.982 [.022]***	.841 [.013]***	.839 [.013]***
Cut 5	-.925 [.010]***	-1.161 [.008]***	-.677 [.020]***	-.893 [.013]***	-.895 [.013]***

* $p < .05$, ** $p < .01$, *** $p < .001$; the results are weighted to adjust for complex survey designs of the National Health Interview Survey

support for our second hypothesis among whites. However, the health differentials by marital racial pairings remain statistically significant in the full model.

Model 5 tests for the hypothesis regarding gender differences among married whites, controlling for all the covariates. Overall, the results are mixed. On the one hand, no significant gender variation was observed for intermarriages with blacks and other races. On the other hand, the health gap associated with white–Hispanic marriages significantly differs by gender. Results in Model 5 show that white men intermarried with Hispanic wives (i.e., the main effect) are significantly more likely to report better health than their counterparts in same-race marriages, albeit by a small margin ($[e^{.026} - 1] \times 100 = 2.6\%$), whereas the interaction term shows a negative sign, likely suggesting health disadvantages for white women in white–Hispanic marriages. To further probe the significant gender difference, we ran additional analyses of gender interactions, using women as the reference group (i.e., male = 1) (Hayes 2013). The results (available upon request) suggest that white women with Hispanic husbands report significantly worse health than their endogamously married peers ($b = -.168, p < .0001$). Taken together, analyses of gender variation suggest that the health disadvantage associated with white–Hispanic marriage primarily exists among white women.

Interracial Marriage and Health among Blacks

Table 3 presents the ordinal logistic regression results for blacks. Unlike whites, Model 1 in Table 3 shows that the self-reported health of married blacks does not significantly differ by racial pairings. Blacks intermarried with non-black spouses fare similarly to their endogamously married counterparts. Hypothesis 1 is thus not supported among married blacks. Models 2 and 3, respectively, control for health behaviors and psychological distress. The results show that adjusting for each factor does not change the results observed in Model 1, and spousal race is not significantly associated with self-reported health in either model. Model 4 controls for both factors, and the self-reported health of married blacks still does not significantly differ by spousal race.

Model 5 tests for gender differences among married blacks, adjusting for all covariates. The results show that while the main effects of spousal race remain statistically insignificant, one gender interaction term in Model 5 is statistically significant: the health gap between blacks intermarried with Hispanics and their endogamously married counterparts. We also performed additional analyses, using women as the reference group (i.e., male = 1). Results from these analyses (available upon request) also show statistically insignificant main effects for spousal race among black women despite the significant gender interaction observed in black–Hispanic marriages. Taken together, these findings regarding gender variation suggest that neither intermarried black men nor women fare significantly poorer in self-reported health than their peers in same-race marriages.

Discussion

This study addresses the health implications of racial pairings in marriage, an important and yet understudied research inquiry in the literature on marriage and health. Our findings contribute to the current scholarship in several ways.

Marriage and Health in Interracial Contexts

First, our analyses reveal distinct racial patterns in the association between marital racial pairings and self-reported health. In support of our first hypothesis, whites intermarried with black, other-race, and Hispanic spouses fare significantly worse than their endogamously married peers. In contrast to whites, married blacks with non-black spouses do not fare significantly worse than their counterparts in same-race marriages. Although this finding is at odds with our theoretical expectation, it aligns with empirical findings from previous research. Bratter and Eschbach (2006), who also used data from the NHIS in their study, demonstrated that while whites, and particularly white women, in interracial marriages experienced significantly greater psychological distress compared to their endogamously married white peers, intermarried blacks fared similarly to their counterparts in same-race marriages. Our finding on the contrasts across whites and blacks, in keeping with prior research, may point to racial differences in attitudes toward intermarriage between blacks and

Table 3 Ordinal logistic regressions of interracial marriage and self-reported health, non-Hispanic black ($N = 19,845$)

	Model 1	Model 2	Model 3	Model 4	Model 5
Spousal race (non-Hispanic black = 0)					
Non-Hispanic white	.050 [.052]	.072 [.068]	.065 [.058]	.076 [.072]	.064 [.087]
Non-Hispanic other races	-.102 [.272]	-.042 [.277]	-.112 [.267]	-.058 [.271]	.085 [.119]
Hispanic	.072 [.119]	.040 [.110]	.047 [.141]	.013 [.130]	.102 [.093]
Gender \times spousal race					
Female \times non-Hispanic white					.039 [.146]
Female \times non-Hispanic other races					-.625 [.852]
Female \times Hispanic					-.276 [.119]*
Smoking (current smoker = 0)					
Past smoker		.274 [.044]***		.213 [.041]***	.213 [.040]***
Non-smoker		.476 [.019]***		.400 [.027]***	.400 [.027]***
Drinking (non-drinker = 0)					
Past drinker		-.234 [.035]***		-.212 [.031]***	-.209 [.028]***
Current drinker		.064 [.036]		.088 [.035]**	.079 [.035]*
Body weight (normal = 0)					
Underweight		-.517 [.207]*		-.476 [.140]***	-.449 [.121]***
Overweight		-.075 [.025]**		-.081 [.033]*	-.084 [.029]**
Obese		-.645 [.052]***		-.624 [.060]***	-.629 [.063]**
Psychological distress (not/minimally distressed = 0)					
Moderately distressed			-1.138 [.071]***	-1.089 [.081]***	-1.072 [.073]***
Severely distressed			-2.111 [.044]***	-2.019 [.061]***	-2.019 [.073]***
Survey year (centered at 1997)	-.012 [.002]***	-.009 [.003]***	-.010 [.001]***	-.007 [.002]***	-.007 [.001]***
Age (centered at 18 years old)	-.044 [.001]***	-.043 [.001]***	-.047 [.001]***	-.046 [.001]***	-.046 [.001]***
Female (male = 0)	-.217 [.037]***	-.221 [.036]***	-.175 [.033]***	-.172 [.034]***	-.171 [.036]***
Region of residence (South = 0)					
Northeast	.038 [.071]	.037 [.065]	.017 [.068]	.014 [.063]	-.002 [.074]
North Central/Midwest	.013 [.064]	.026 [.062]	.038 [.047]	.046 [.047]	.053 [.050]
West	.207 [.011]***	.193 [.004]***	.228 [.012]***	.213 [.003]***	.224 [.011]***

Table 3 continued

	Model 1	Model 2	Model 3	Model 4	Model 5
U.S. born (immigrant = 0)	-.433 [.104]***	-.248 [.094]**	-.403 [.095]***	-.237 [.086]**	-.236 [.106]*
Education (less than high school = 0)					
High school graduate	.600 [.062]***	.568 [.054]***	.535 [.064]***	.508 [.056]***	.510 [.061]***
Some college	.833 [.061]***	.768 [.063]***	.743 [.064]***	.686 [.065]***	.690 [.066]***
College graduate or above	1.343 [.097]***	1.213 [.100]***	1.210 [.096]***	1.098 [.100]***	1.105 [.103]***
Cut 2	4.581 [.125]***	4.432 [.104]***	4.922 [.132]***	4.803 [.121]***	4.825 [.135]***
Cut 3	2.898 [.122]***	2.730 [.094]***	3.156 [.125]***	3.019 [.104]***	3.036 [.115]***
Cut 4	1.218 [.132]***	1.013 [.101]***	1.413 [.131]***	1.244 [.104]***	1.258 [.120]***
Cut 5	-.204 [.157]	-.446 [.121]***	-.036 [154]	-.239 [.118]*	-.230 [139]

* $p < .05$. ** $p < .01$ *** $p < .001$; the results are weighted to adjust for complex survey designs of the National Health Interview Survey

whites. Research has shown that interracial unions are more acceptable among the black community compared to whites and thus face less family disapproval (Bratter and Eschbach 2006; Djamba and Kimuna 2014).

In light of the growing black–non-black divide in the United States with blacks facing more discrimination and barriers than Asians and Latinos (Lee and Bean 2007a), we have conducted additional analyses on the health gaps between whites intermarried with black spouses and those intermarried with Hispanic and other-race spouses to assess the theory of black exceptionalism among whites intermarried with non-whites. Past research found that non-black individuals with black partners had worse mental health than those with non-black partners (Kroeger and Williams 2011). Our finding provides limited evidence for black exceptionalism as intermarried whites with black spouses report significantly worse health than their peers in white–Hispanic marriages but similar health as those intermarried with other-race spouses.

Our categories of spousal race/ethnicity are appropriate for the current study but do have their limitations. For example, we did not take into account the heterogeneity of the other-race group. Future research should use more detailed interracial pairings to test black exceptionalism theory in interracial marriage.

Explanations for the Link Between Interracial Marriage and Health

Our study also advances the research on interracial marriage and health by taking additional steps to assess two possible explanations prominent in the marriage and

health literature: health behaviors and psychological distress. The results demonstrate that adjusting for health behaviors significantly reduces the health gap between whites intermarried with blacks and their endogamous peers, consistent with past research that found excessive unhealthy behaviors among individuals in interracial unions (Bratter and Eschbach 2006; Chartier and Caetano 2012). Our findings suggest that whites intermarried with blacks may use unhealthy behaviors as a coping strategy to deal with stress. Alternatively, it is possible that selection processes associated with unhealthy behaviors contribute to the health gap observed between white–black and same-race marriages. We are limited by the cross-sectional nature of the data in our ability to sort out the complex processes linking interracial marriage, health behavior, and self-reported health.

Although we also found statistical evidence for psychological distress as a significant mediator for health disadvantages associated with white–Hispanic intermarriage, we acknowledge that the mediating effect is very small and may not be substantively meaningful. More importantly, neither of the two hypothesized factors explained a notable portion of the health disadvantage associated with intermarriage between whites and other racial groups. The health differentials by marital racial pairings remain statistically significant in the full model. Future research should investigate other factors associated with interracial marriage and health.

Literature suggests that interracial married households likely demonstrate different household dynamics from endogamously married ones, a tendency that bears important implications for marital well-being and health (Elwert and Christakis 2006; Hohmann-Marriott and Amato 2008). We suggest that a dyadic approach to examining couple-level factors such as marital quality or couple-level stressors like stigma and discrimination would be a promising route to deepening our understanding of the sources of the health disadvantage associated with interracial marriage among whites (LeBlanc et al. 2015). Qualitative studies that examine how health regulations affect the daily life of interracial versus same-race married households should also advance our knowledge of health differentials by marital racial pairings.

Gender, Interracial Marriage, and Health

Our results regarding gender differences in interracial marriage and health offer limited support for our theoretical expectations. Only white women intermarried with Hispanic husbands report significantly poorer health than their male peers with Hispanic wives. Although black–Hispanic intermarriage shows a significant gender difference, neither black men nor women with Hispanic spouses fare significantly worse than their endogamously married counterparts. Existing studies on the gender hierarchy associated with interracial marriage, including the notion of status exchange, heavily features black–white marriage (Qian 2005); much less discussion specifically addresses either white–Hispanic or black–Hispanic intermarriages. However, past research presented evidence of an elevated divorce risk for white–Hispanic marriages compared to same-race white couples (Fu and Wolfinger 2011), likely suggesting greater marital instability associated with white–Hispanic

intermarriage. Given that women tend to be more susceptible to marital distress than men (Umberson and Williams 2005), investigations of marital dynamics as a possible mechanism may shed light on the gender difference we observed in white–Hispanic marriages. Our data, however, prevent the pursuit of this inquiry.

Literature on gender differences in the relationship between interracial marriage and health has been scarce and inconclusive. Bratter and Eschbach (2006) found that the greater psychological distress linked to intermarriage with non-white spouses primarily exists among intermarried white women but not men, while Miller and Kail (2016) only observed limited gender variation in the association between interracial marriage and self-reported health. Our finding provides additional empirical evidence in support of the latter. Given the mixed findings in the literature, future research should examine various health outcomes with different data sources before a consensus can be reached.

Limitations

Several limitations of this study might be addressed in future research. First, a lack of data on marital quality or other couple-level stressors prevents us from exploring important pathways through which interracial marriage may influence health. Also, previous studies suggest that interracial couples are more likely to be subject to marital instability (Bratter and King 2008; Zhang and Van Hook 2009), but the cross-sectional nature of our data deters us from prospective examinations of the interracially married individuals' marital experiences and health over time. On a related note, some studies show that interracial marriages are more likely to be remarriages, which have been shown to negatively impact health compared to first marriages (Carr and Springer 2010; Fu 2010). Lack of information on previous marital history prevents us from taking remarriage into account. Second, we cannot explore social support, which research has shown to be another mechanism for the effects of interracial marriage on health, because our data do not consistently contain this critical information.

Lastly, although we control for a series of covariates in the models, including sociodemographic, psychological, and behavioral characteristics, we cannot rule out possible selection effects resulting from previous health conditions or unobserved heterogeneity due to the limits of cross-sectional data. Thus, we are not able to adjudicate between causation and selection. While our finding on health behaviors as a significant explanation for worse health associated with intermarriage among whites aligns with the expectation of the marital resource model, it is also consistent with the selection processes that intermarried whites are selective on certain unhealthy habits. Additionally, consistent with the status exchange argument, our finding on the negative association between interracial marriage and health for whites, but mostly positive (albeit non-significant) for blacks also suggests that selection processes are likely at play here. We do not attempt to argue for the validity of one over the other between causation and selection. Instead, we argue that both processes could contribute to what we have observed in the data (Carr and Springer 2010). Future research should employ longitudinal studies to shed light on causal versus selection processes in the link between interracial marriage and health.

Conclusion

Despite the limitations enumerated above, the present study demonstrates the significance of interracial contexts for the household production of health. Our understanding of the origin of health differentials between marital racial pairings is far from complete; hence, future research should continue pursuing this line of inquiry. Additionally, in light of the rising prevalence of cohabiting households and same-sex partnerships in recent decades, and the differential relationship dynamics associated with those patterns, researchers should expand their inquiries to consider the role of different union statuses (i.e., married vs. cohabiting) and also incorporate same-sex unions.

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