RACIAL-ETHNIC DIFFERENCES IN SUBJECTIVE SURVIVAL EXPECTATIONS FOR THE RETIREMENT YEARS*

Jennifer Roebuck Bulanda
Department of Sociology & Gerontology
375 Upham Hall
Miami University
Oxford, Ohio 45056
(513) 529-5642
bulandjr@muohio.edu

Zhenmei Zhang
Department of Sociology
Michigan State University
East Lansing, Michigan 48824
(517) 355-7545
Zhangz12@msu.edu

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ABSTRACT

Prior research finds a race anomaly in subjective life expectancy, such that blacks expect to live longer than whites even though their actual life expectancy is lower, but does not include other racial-ethnic groups. Using data from the 1998 Health and Retirement Study (n=8,077), we find that the race anomaly in subjective survival expectations can be extended to Mexican Americans: Mexican Americans, regardless of their nativity, expect a lower chance of living to ages 75 and 85 than do whites net of age and gender even though their actual life expectancy is higher. In addition, foreign-born Mexican Americans expect a lower chance of survival to older ages than native-born Mexican Americans, which is also opposite of actual mortality patterns. We also find that education and wealth interact with race-ethnicity to influence subjective survival expectations.

Racial-Ethnic Differences in Subjective Survival Expectations for the Retirement Years

While a considerable amount of research has focused on racial-ethnic differences in the length of time people actually live, little research has examined racial-ethnic variations in how long people *expect* to live. Prior research shows that blacks expect to live as long as or longer than their white counterparts, which is opposite of actual mortality patterns (Hurd and McGarry 1995; Mirowsky 1999). However, previous research does not include other racial-ethnic groups, such as Mexican Americans. Further, while previous work has established black-white differences in subjective life expectancy, it is not clear why blacks have overly optimistic subjective life expectations despite their more disadvantaged economic situation. This paper, using data from the 1998 Health and Retirement Study (HRS), has two main goals: (1) to examine how the subjective survival expectations of native-born and foreign-born Mexicans compare to those of blacks and whites and (2) to examine whether the relationship between race-ethnicity and subjective survival expectations varies by socioeconomic status.

THE RACE ANOMALY IN SUBJECTIVE LIFE EXPECTANCY

Subjective survival expectations involve people's perceptions of how long they believe their own lives will extend. This estimation is salient for a number of reasons, as the length of life a person expects is related to a variety of outcomes and decisions including retirement age, consumption and savings decisions, and actual mortality (Gan et al. 2004; Hurd, Smith, and Zissimopoulos 2004; Hurd and McGarry 1995; Siegel, Bradley, and Kasl 2003). It appears that people form subjective assessments of probabilities (such as the probability of survival) based on rational expectations (Dominitz and Manski 1997; Manski 2004). These rational expectations are conditioned on accumulated knowledge and past experience (Manski 2004). As such, one

could expect that individuals would consider factors such as their race-ethnicity, gender, health, economic situation, and social support network, all of which are related to mortality. These variables are indeed related to subjective life expectancy and also covary with subjective life expectancy in the same way as actual life expectancy, with one notable exception: race-ethnicity (Hurd and McGarry 1995; Mirowsky, 1999; Mirowsky and Ross 2000; Ross and Mirowsky 2002).

Life expectancy at birth is much lower for Blacks than for Whites (Hoyert et al. 2006). However, in a sample of older adults between the ages of 51 and 61 in 1992, blacks *expected* a greater probability of surviving to both the ages of 75 and 85 than did whites (Hurd and McGarry 1995). This difference persisted despite controls for age, marital status, socioeconomic status, health, and health behaviors.   Studies of the general adult population are similar; in a sample of adults 18 and over, blacks expected to live between two and three years longer than whites (Mirowsky and Ross 2000). Prior research has not established why the race anomaly exists.

Further, to our knowledge, studies on race differences in subjective life expectancy have focused on black-white comparisons, and none have examined the subjective life expectancy of Hispanic Americans. This is surprising, given that Hispanics now constitute the largest minority group in America and continue to grow (United States Census Bureau 2001), and mortality differences between Hispanics and other racial-ethnic groups are well documented in the literature (e.g., Angel, Buckley, and Sakamoto 2001; Hayward et al. 2000; Palloni and Arias 2004). When comparing Hispanics to non-Hispanic whites, both older Hispanic men and women have longer life expectancies than their white counterparts (Elo et al. 2004). Compared with other Hispanic groups, Mexican Americans appear to have the most pronounced mortality advantages in later life, but there is also a nativity difference: foreign-born Mexican Americans

have significantly lower mortality rates than do native-born Mexican Americans (Hummer et al. 1999; Palloni and Arias 2004). While research has established that the subjective life expectancy of blacks does not match actual life expectancy, it is not clear what pattern will be evidenced by Hispanics and whether expectations may vary based on nativity status.

RACE-ETHNICITY, SOCIOECONOMIC STATUS, AND SUBJECTIVE SURVIVAL EXPECATIONS

Socioeconomic status is positively associated with subjective life expectancy, although education appears to be a more important correlate of subjective life expectancy than income (Mirowsky and Ross 2000). Blacks and Mexican Americans have lower levels of education, income, and wealth than do whites, and are more likely to be without health insurance (Hayward et al. 2000; Huie et al. 2003; Teachman, Tedrow, and Crowder 2000; Vega and Amaro 1994). Several studies find that blacks expect longer lives than whites even after controlling for socioeconomic status (Hurd and McGarry 1995; Mirowsky 1999). This is a surprising finding which may suggest that socioeconomic status is less closely related to subjective survival estimates for blacks than for whites, a possibility that has not been explored in previous research. As the early life course is especially precarious for blacks in disadvantaged socioeconomic backgrounds, who have much higher mortality rates at young ages (Hummer et al. 1999), it is possible that blacks who survive past the early life course are more hopeful about surviving to older ages because they feel they are a select group. That is, an older black individual may see herself as the "exception to the rule" and expect a high chance of surviving to the later years, an estimation he or she sees as being separate from, or in spite of, his or her socioeconomic status. In addition, Blacks with higher levels of education may be more aware of the mortality rates for their specific racial-ethnic group, and may adjust their subjective life expectancy estimates

accordingly. Socioeconomic status, and education in particular, may moderate the association between race-ethnicity and subjective survival expectations.

OTHER CORRELATES OF SUBJECTIVE LIFE EXPECTANCY

Prior research on subjective life expectancy suggests that it is important to account for subjective and objective measures of health, health behaviors, and survival of parents to old age (Hurd and McGarry 1995). Measures of social support are also important, as those with sources of social support expect longer lives than those without social support (Ross and Mirowsky 2002). Blacks are less likely than whites and Mexican Americans to be married (Cherlin 1992; Bean and Tienda 1987; Oropesa, Lichter, and Anderson 1994), but blacks and Mexican Americans are more likely than whites to be involved in intergenerational kin support networks (Rothman, Gant, and Hnat 1985; Ruggles 1994), and traditionally place marked emphasis on religion and religious involvement (Maldonado 2000; Sherkat and Ellison 1999).

HYPOTHESES

H_1: Blacks expect a greater chance of survival to older ages than whites.

H_2: Foreign- and native-born Mexican Americans expect lower chances of living to older ages than whites and blacks. Mexican Americans' reports of subjective health are unduly pessimistic (Markides et al. 1997), so their subjective expectations of longevity may be similarly underestimated.

H_3: Foreign-born Mexican Americans expect longer lives than native-born Mexican Americans. As foreign-born Mexican-Americans have longer actual life expectancies than their native-born counterparts and as they are a self-selecting group, they are more optimistic about their health and longevity.

H₄: The association between race and subjective survival expectations is moderated by socioeconomic status. That is, the black-white gap in subjective survival expectations narrows with greater socioeconomic status.

CONTRIBUTIONS OF THE CURRENT STUDY

While several studies have established a race anomaly in subjective expectations of survival, we are able to extend prior work in several ways. First, existing research has concentrated solely on black-white differences; we are able to include Mexican Americans and compare their subjective survival expectations with that of blacks and whites. Second, we are able to investigate the subjective survival expectations of Mexican Americans by also considering nativity status. Third, our explicit focus on racial-ethnic differences in subjective survival expectations allows us to assess whether the relationship between race-ethnicity and subjective survival expectations is moderated by socioeconomic status, which previous research has not explored.

METHOD

Data

We use data from the 1998 wave of the Health and Retirement Study (HRS). This study is a nationally representative survey of adults over the age of fifty and includes information from 21,384 respondents and oversamples of blacks and Hispanics. Mirowsky's (1999) previous research on the race anomaly in subjective life expectancy used a smaller sample of adults aged 18 to 95 years. Benefits of the HRS data include a large sample size, the capacity to include minority groups other than blacks, and the ability to focus only on older adults, for whom life expectancy may be more salient than for younger adults (Siegel et al. 2003).

Only those respondents aged 65 years and younger were asked questions about their expected length of life; therefore, the sample was limited to those who were 51 to 65 years old and who had valid responses to the two items asking about subjective survival probabilities. Excluding those outside of this age range resulted in a loss of 11,394 respondents (53.3%). Limiting the analysis to only blacks, whites, and Mexican Americans resulted in the loss of 545 respondents (2.5%) who were of other race-ethnic groups and other Hispanic groups, and four respondents with unidentified race/ethnicity were also removed from the sample. An additional 1,364 respondents (6.4%) are excluded from the sample due to missing data on the dependent variable. The final sample size is 8,077 respondents. Of these respondents, 6,479 are white, 1,207 are black, and 391 are Mexican American. Of the Mexican Americans, 142 are foreign born, and 249 are native (U.S.) born.

Measures

Dependent Variables. Two separate dependent variables are used in analyses. *Subjective survival expectation of living to 75* and *subjective survival expectation of living to age 85* are measured by the responses to questions asking, respectively, "What is the percent chance you will live to be 75 or more?" and, "What is the percent chance you will live to be 85 or more?" The responses to both questions range from (0) absolutely no chance to (100) absolutely certain. Previous research has established that the subjective probability of survival measure in the HRS is internally consistent, behaves like a probability, and covaries with other variables in the expected directions (Hurd and McGarry 1995). Expectations of living to age 75 focuses on short-term survival probability, while expectations of living to age 85 concentrates on long-term survival probability. We use both of these measures to gain a better understanding of racial-ethnic differences in subjective survival expectations. The dependent variables tend to cluster

around multiples of ten while remaining low at other numbers. In order to address this heaping problem, we recoded the variable into 10 categories, each representing a collapsed group of survival expectations that is centered around a percentage that is a multiple of ten (e.g., the first category represents a zero to five percent chance of survival, the second a six to fifteen percent chance of survival, the third a sixteen to twenty-five percent chance of survival, and so on). This retains the ratio-level measurement of this variable. We assessed different ways to collapsing the data and the results are similar. We then use OLS regression for the multivariate analyses.

Independent Variables. The primary independent variables in this analysis are a set of four mutually-exclusive dichotomous variables representing the respondent's race-ethnicity: non-Hispanic *white* (used as the reference category in analyses), non-Hispanic *black, foreign-born Mexican American* and *native-born Mexican American. Female* is a dichotomous variable coded (1) if the respondent is female, and *age* is a continuous variable indicating the respondent's age in years.

We include several measures of health and health behaviors in the analysis. *Poor health*, a subjective measure, is the response to a single question asking the respondent, "Would you say your health is excellent, very good, good, fair, or poor?" Responses range from (1) excellent to (5) poor. Activities of daily living limitations (*ADL limitations)* are measured by a scale, composed of the responses to six items asking the respondent if, because of health problems, he or she has any difficulty with walking, dressing, bathing, toileting, getting in or out of bed, or eating. *Chronic conditions* is a scale measuring how many of six serious, chronic conditions (heart disease, high blood pressure, cancer, diabetes, lung disease, and stroke) the respondent has been diagnosed as having. *Same-sex parent alive* and *opposite-sex parent alive* are coded (1) if the respondent's same-sex parent and opposite-sex parent, respectively, are living. *Smoking* is a

dichotomous variable coded (1) if the respondent currently smokes. *Exercise* is coded (1) if the respondent reports that over the last twelve months, on average, he or she participated in vigorous physical activity or exercise three times a week or more. Finally, *alcohol consumption* is coded on a scale from one to four, ranging from (1) no alcohol consumption to (4) consumes alcohol daily.

Four socioeconomic status variables are included in the analysis. *Education* is coded as the number of years of education one has completed and ranges from zero (no education) to seventeen (post-college). *Income* is the total household income in dollars. *Net worth* is the respondent's total assets excluding their total amount of debts. Both the income and wealth measure are constructed variables in the HRS. The income measures in the HRS use bracketing techniques to minimize non-response, and hot-deck imputation utilizing this bracketed information is used to create the constructed income and wealth measures available in the HRS (for a more detailed description of imputation techniques used in the HRS see Cao 2001). In the multivariate analysis, we use a logged version of both income and net worth to correct for skewness. *No health insurance* is a dichotomous variable coded (1) if the respondent reports having no health insurance.

Finally, four measures of social support are included in the analysis. *Married* is a dichotomous variable coded (1) if the respondent is currently married. *Religion* is a measure of how important the respondent considers religion in his or her life, and ranges from (1) not too important to (3) very important. *Friends or relatives nearby* is a dichotomous variable coded (1) if the respondent reports having friends or relatives in his or her neighborhood. *No one to help if sick* is also a dichotomous variable, and is coded (1) if the respondent reports having no one to help if he or she were to become seriously ill or debilitated.

Overall there is very little or no missing data for the independent variables. Less than 1% of the sample is missing data on subjective health, chronic conditions, exercise, alcohol use, health insurance, marital status, and religiosity. Between 1% and 2.8% of the sample is missing data on parental vital status, friends and relatives nearby, and no one to provide help if sick. For income and wealth, less than 1% is missing data for which the HRS did not impute income or wealth. Although only a small percentage of respondents are missing data for any variable, we believe it is not advisable to use mean substitution or listwise deletion to address these missing responses (Allison 2001). Following Warren and his coauthors' strategy (2008), we use the "impute" command in Stata, which uses hot-deck imputation to assign a value for missing data based on the data patterns on all other independent variables used in the analysis.

Plan of Analysis

The data are analyzed in several steps to determine whether subjective survival expectations differ across racial-ethnic groups. Bivariate analysis first tests for racial-ethnic differences in the means of all variables. Then Ordinary Least Squares (OLS) regression models are used to examine whether racial-ethnic differences in subjective survival expectations persist after accounting for various confounding factors. Last, interaction terms for race and SES will be added. A respondent-level weight is available in the Health and Retirement Study, and this weight is used in univariate analyses to correct for oversamples of African American and Hispanics. However, the use of the individual-level weight is not advisable in multiple regressions as it can sometimes introduce bias and because the sampling weights are not a function of the dependent variable in this analysis (DeMaris 2004; Winship and Radbill 1994). We ran the regression results both with and without the individual weight; as the results for both

are similar, we report the unweighted multivariate results. Further, all analyses use the Stata "svy" procedure to correct for the complex sampling design used in the HRS.

As stated above, 1,364 respondents (6.4%) are excluded from the sample due to missing data on the dependent variables. In order to assess whether nonrandom selection into the current sample affects our results, in additional analysis we also estimate sample selection models using maximum likelihood estimation with the "svy heckman" command in Stata (results available from the authors upon request). In estimating this model, a unique independent variable must be added to the model that is expected to affect sample selection (i.e., the likelihood of answering the subjective survival expectations) but not the dependent variables (the subjective survival expectations). We use a dichotomous variable representing whether the interview was a phone interview, as we would expect the mode of the interview to be related to sample selection (e.g., those being interviewed by phone may be more likely to end the interview if they do not want to answer the subjective survival question than those being interviewed face-to-face) but not to expectations of length of life. Results show that the estimate of rho for the sample selection model is not significant, suggesting that the correlation between the selection propensity and the dependent variable is accounted for by the independent variables in the equations; thus, selection should not be a problem in this analysis (DeMaris 2004).

RESULTS

Bivariate Results

The weighted means of all variables by race-ethnicity are shown in Table 1. Significant racial-ethnic differences in subjective survival expectations are evident. On average, blacks expect a greater chance of living to age 85, on average, than do whites, and blacks expect a greater chance of living to ages 75 and 85 than do both foreign-born and native-born Mexican

Americans. Foreign-born Mexican Americans expect a lower chance of living to ages 75 and 85 than do whites, while native-born Mexican Americans expect a lower chance of living to age 75 than do whites. Foreign-born Mexican Americans expect a lower chance of living to both ages 75 and 85 than do native-born Mexican Americans.

There are also significant racial-ethnic differences with respect to the sociodemographic, health, economic, and social support factors. In comparison to whites, blacks are especially disadvantaged in terms of health and health behaviors. While both blacks and Mexican Americans have lower economic resources than whites, Table 1 shows that this is especially true for foreign-born Mexican Americans. Blacks and Mexican Americans have lower education, income, and wealth than whites, and are more likely to have no health insurance. Further, foreign-born Mexican Americans have lower education and are more likely to lack health insurance than are native-born Mexican Americans or blacks. With respect to social support, the picture is mixed. Blacks and native-born Mexican Americans are less likely to be married than whites and foreign-born Mexican Americans. However, whites have lower religiosity than either Mexican Americans or blacks, and native-born Mexican Americans and blacks are more likely to report having someone to help them if they were sick than are whites or foreign-born Mexican Americans.

Multivariate Results

Table 2 shows the results of the regression of subjective survival expectations of living to age 75 on sociodemographic, health, economic, and social support factors. Model 1 shows that, net of gender and age, both foreign-born and native-born Mexican Americans expect a lower chance of living to age 75 than do whites, and that foreign-born Mexican Americans expect a

lower chance of living to age 75 than do native-born Mexican Americans and blacks. There is

no statistically significant difference between whites' and blacks' expectations.

Model 2 includes all of the independent variables. The coefficient for foreign-born

Mexican American remains statistically significant after controlling for sociodemographic,

health, economic, and social support factors; foreign-born Mexican Americans expect a

significantly lower chance of living to age 75, on average, than do whites, native-born Mexican

Americans, and blacks even after accounting for the independent variables in the full model.

However, after controlling for all independent variables, there is not a statistically significant

difference between native-born Mexican Americans' and whites' expected chances of living to

age 75. Supplemental analyses (results not shown) reveal that controlling specifically for self-

reported health and education reduces the difference to statistical non-significance. That is, it

appears that accounting for native-born Mexican Americans' lower levels of education and self-

rated health reduces to nonsignificance the difference in expected chance of living to age 75 for

these two groups. Table 2 also shows that the coefficient for black changes from being non-

significant in the first model to being significant and positive in the second model. Controlling

for all independent variables in Model 2, blacks expect a significantly greater chance of living to

age 75 than do whites. Supplemental analyses (results not shown) find that education appears to

be suppressing the relationship between race and expected chance of living to age 75 for blacks;

if not for the fact that blacks have lower levels of education, on average, than whites, blacks

would expect greater chances of living to age 75 than whites.

Table 3 shows the results of the regression of expected chance of living to age 85 on

sociodemographic, health, economic, and social support factors. Model 1 shows that, net of

gender and age, both native-born and foreign-born Mexican Americans expect a lower chance of

living to age 85 than do whites or blacks, and foreign-born Mexican Americans expect a lower chance than native-born Mexican Americans; this is consistent with the earlier patterns of expected chance of living to age 75. However, unlike patterns in expected chance of living to age 75, there is also a black-white difference in the expected chance of living to age 85, such that blacks expect a *greater* chance than of living to age 85 than do whites.

This black-white difference not only persists after controlling for all variables in Model 2, but actually becomes larger. Supplemental analyses (results not show) find that education suppresses the relationship between race and SES. Similar to those for expected chance of living to age 75, foreign-born Mexican Americans expect a significantly lower chance of living to age 85, on average, than do whites, native-born Mexican Americans, and blacks even after accounting for all the independent variables. And, like the results for age 75, the significant difference in expectations of living to age 85 between native-born Mexican Americans and whites reduces to statistical non-significance after controlling for all independent variables. Supplemental analyses (results not shown) reveal that this is due to controlling specifically for self-rated health and education.

We then examine interactions between race-ethnicity and socioeconomic status (SES) in order to assess whether SES moderates the association between race-ethnicity and subjective survival expectations. In order to test for possible interaction effects, we create multiplicative terms for race-ethnicity and each of the four measures of SES[1]. As is shown in Tables 2 and 3 (Model 3), there are significant interaction between black and education in the regressions of expected chance of living to both ages 75 and 85. Thus, it appears that while education is

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[1] These multiplicative variables are then tested in separate models (e.g., a separate model tests only the interactions between race-ethnicity and income, while another model tests only the interactions between race-ethnicity and education). Interaction terms for race-ethnicity and income, and for race-ethnicity and lack of health insurance are not statistically significant and are therefore not shown in the table.

positively related to expectations of living to ages 75 and 85 for whites, the relationship is negative for blacks. Further, Model 3 of Table 3 shows that the interaction term between education and native-born Mexican American is also statistically significant; education is more positively related to expected chances of living to age 85 for native-born Mexican Americans than for whites. In other words, among blacks, the more education one obtains, the lower his or her expected chance of living to ages 85. Among native-born Mexican Americans, the more education one completes, the higher his or her expected chance of living to age 85. Figures 1 and 2 show that the black-white gap in subjective survival expectations narrows with greater years of education. Further, there is a cross-over in the patterns for native-born Mexican Americans and Whites; native-born Mexican Americans with fewer than about 10 years of education expect a lower chance of surviving to age 85 than whites, while those with more than approximately ten years of education expect greater chances of surviving to age 85 than whites.

In addition, Tables 2 and 3 (Model 4) show that there is a significant interaction between black and wealth, such that wealth is also negatively related to expectations of living to ages 75 and 85 among blacks. The trend for race and wealth interaction is very similar to the trend for the race and education interaction shown in Figures 1 and 2, with the black-white gap in expectations of living to ages 75 and 85 narrowing with increasing wealth respectively (figure available upon request).

Findings also show that several of the independent variables included in the model are important correlates of subjective life expectancy. Consistent with previous literature, gender, age, and health are related to subjective survival estimates in the same way they are related to actual life expectancy. Smoking and exercise are also related to subjective life expectancy, but alcohol consumption is not. Only one of the social support factors is related to subjective life

expectancy: perceiving that one has no friends or relatives to help if he or she were to fall ill is related to a lower expected chance of living to both ages 75 and 85. Of the economic factors, only education is a significant correlate of subjective survival expectations.

DISCUSSION

We use data from the 1998 wave of the Health and Retirement study to explore racial-ethnic differences in subjective expectations of survival. Our first hypothesis, that blacks would expect a greater chance of living to older ages than whites, is supported. This is consistent with previous research finding a "race anomaly" in subjective life expectancy (e.g., Mirowsky 1999). Our second hypothesis is also supported. We find that, regardless of nativity status, Mexican Americans expect a lower chance of living to ages 75 and 85 than do both blacks and whites. Our third hypothesis, that foreign-born Mexican Americans would expect a greater chance of survival than native-born Mexican Americans, is not supported; rather, foreign-born Mexican Americans expect lower chances of survival than native-born Mexican Americans, blacks, and whites, even though their actual life expectancy is the longest. These findings extend previous research on the race anomaly in subjective life expectancy by showing that this anomaly extends to Mexican Americans.

The robustness of the race-ethnic differences in subjective life expectancy is notable, as are the distinct reasons for the differences. For foreign-born Mexican-Americans, the significantly lower survival expectation persists despite controls for SES, health, and social support. That is, even when health, SES, and social support are the same, foreign-born Mexican Americans expect lower chances of surviving to ages 75 and 85 than whites, blacks, or native-born Mexican Americans. It is not clear why this pattern exists; perhaps Mexican Americans who have immigrated to the United States see themselves as have undertaken a major and

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stressful life transition that may have negative consequences for their longevity, or their estimation of their length of life is based on the life expectancy in their native country, which is lower than that of the United States. More research is needed to understand the lower subjective survival expectations among foreign-born Mexicans compared to other racial-ethnic groups.

For native-born Mexican Americans, on the other hand, controlling for poor self-rated health and education reduces the difference in subjective survival estimates between native-born Mexican Americans and whites to statistical non-significance. Native-born Mexican Americans appear to expect lower chances of surviving to ages 75 and 85 than whites because they have lower levels of education and rate their own health as poorer than whites, on average.

For blacks, a very different pattern is evident. After controlling for health, SES, and social support, the difference in expected chance of living to older ages becomes *greater* for blacks. Findings for blacks show that even when levels of health, SES, and social support are the same, blacks expect a greater chance of living to older ages than do whites, foreign-born Mexican Americans, or native-born Mexican Americans. We suggest that blacks with low SES may have overly optimistic survival expectations due to their expectation of a phenomenon similar to the racial cross-over in mortality that has been documented in some studies (e.g., Johnson 2000). That is, blacks who have survived to late-midlife or early retirement years (as have those in the sample used in this study) may see themselves as a select group, special in some way, as they have survived an early life course that is especially precarious for members of their racial group. As such, they may see their chances of surviving to later ages as quite high and relatively uninfluenced by their disadvantaged economic situation.

We examine this possibility by testing an interaction term between race-ethnicity and the measures of SES. We find some support for our hypothesis that SES moderates the association

between race and subjective survival estimates to age 75 and 85, and the largest black-white gap in subjective survival expectations exists among those with the fewest years of education. In general, the results suggest the black-white gaps in subjective expectations of surviving to older ages tend to narrow with increasing amounts of education. Further, like education, wealth also moderates the association between race and expectations of surviving to ages 75 and 85. The black-white difference in expected chance of survival is greatest at the lowest levels of wealth, again pointing to the possibility that these individuals may see themselves as a select group to have survived to later life despite their low SES and may therefore be optimistic about their chance of continued survival despite their relatively low wealth.

The findings of this study suggest several policy implications. The fact that, based on current survival estimates, Mexican Americans are overly pessimistic in their subjective survival expectations may mean that members of this racial-ethnic group are not saving adequately for their later years. Foreign-born Mexican Americans who do not amass sufficient savings for later life due to their survival expectations may be especially at risk, as they have the lowest levels of SES to begin with and report the lowest likelihood of having someone to care for them if they were to become ill. Further, it is possible that unrealistically pessimistic estimations about chance of survival among both foreign-born and native-born Mexican Americans may have consequences for these groups' health behaviors and health care access. Finally, the fact that the relationship between race-ethnicity and subjective survival probabilities varies based on education suggests that making different racial-ethnic groups more aware of actual life expectancies may influence their own expectations of survival, which in turn may aid them in making more informed decisions about retirement, savings, and preventative health behaviors.

There are several limitations to this study. First, our measures of social support are not ideal. For married respondents, we have information from only one partner on whether friends or relatives are in the neighborhood. Although the relatives and friends of one partner are likely to extend to the other partner, this is admittedly a limited measure. Second, we are not able to take discrimination and racism into account, although these may be important factors to consider when comparing minority groups' expectations of length of life to that of whites. Third, we cannot consider other Hispanic groups, such as Puerto Ricans, and other racial-ethnic groups, such as Asian-Americans, due to small sample sizes of these groups in the HRS. Fourth, our measure of subjective survival probabilities asks respondents to estimate the percent chance they will survive to ages 75 and 85. It is possible that those who are less-educated may incorrectly approximate their chances of survival due to lack of statistical knowledge of estimating possibilities in percentage terms. These limitations present opportunities for future research, and further work on this issue should utilize longitudinal data to examine if subjective survival expectations are related to actual mortality differently based on one's race-ethnicity.

Our results confirm racial anomalies in expectations of length of life (e.g., Hurd and McGarry 1995; Mirowsky and Ross 2000), and extend prior research by demonstrating that both foreign-born and native-born Mexican Americans expect *lower* chances of living to older ages than whites or blacks. Further, foreign-born Mexican Americans expect *lower* chances of living to older ages than do both native-born Mexican Americans and whites. This is the opposite of actual mortality patterns. Our finding that blacks expect a greater chance of living to older ages is consistent with prior research (Mirowsky 1999). However, we find that the relationship between race and subjective expectations of survival varies by education and wealth. Our findings suggest that the "race anomaly" found in previous research can be extended to both

foreign-born and native-born Mexican Americans. This offers a word of caution to previous studies' findings suggesting that people can predict their own mortality; this may not be the case for Mexican Americans or blacks.

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Table 1. Means and Standard Deviations of All Variables

	Foreign-Born Mexican-Americans	Native-Born Mexican-Americans	Blacks	Whites
Dependent Variables				
Live to Age 75	5.55 [a, b, c]	6.49 [a, b]	7.58	7.56
Live to Age 85	4.04 [a, b, c]	4.81 [b]	6.19 [a]	5.18
Sociodemographic Factors				
Female	0.57	0.53	0.60 [a]	0.54
Age	57.34 [c]	56.26 [a, b]	57.20	57.15
Health				
Poor Health	3.24 [a]	3.12 [a]	3.07 [a]	2.52
ADL Limitations	1.46 [a]	1.34 [a]	1.40 [a]	1.18
Chronic Conditions	1.65 [b]	1.81 [b]	2.10 [a]	1.73
Same-sex Parent Alive	0.29	0.28	0.27	0.30
Opposite-sex Parent Alive	0.25	0.25	0.24	0.28
Exercise	0.41 [a]	0.47	0.43 [a]	0.51
Smokes	0.22	0.21 [b]	0.29 [a]	0.23
Alcohol Consumption	1.67 [a]	1.92 [a, b]	1.70 [a]	2.09
Economic Factors				
Education	6.10 [a, b, c]	10.59 [a, b]	12.16 [a]	13.28
Household Income (Thousands)	29.06 [a, b]	44.32 [a]	38.01 [a]	75.26
Wealth (Thousands)	102.47 [a]	139.53 [a]	108.96 [a]	387.17
No Health Insurance	0.45 [a, b, c]	0.24 [a, b]	0.13 [a]	0.07
Social Support				
Married	0.79 [b, c]	0.67 [a, b]	0.43 [a]	0.74
Religion	2.65 [a, b]	2.68 [a, b]	2.84 [a]	2.40
Friends/Relatives Nearby	0.69	0.73	0.70	0.72
No One to Help if Sick	0.42 [b, c]	0.25 [a]	0.23 [a]	0.35
N	142	249	1,207	6,479

[a] Significantly different from Whites ($p < 0.05$)

[b] Significantly different from Blacks ($p < 0.05$)

[c] Significantly different from Native-born Mexican Americans ($p < 0.05$)

**Table 2. OLS Regression Predicting Expected Chance of Living to Age 75,
Net of Sociodemographic, Health, and Economic Factors**

	Model 1	Model 2	Model 3	Model 4
Race/Ethnicity				
Foreign-born Mexican-American	-2.302 [a, b, c]	-1.222 [a, b, c]	-1.393 [a, b]	-0.768 [b]
Native-born Mexican American	-1.050 [a, b]	-0.417 [b]	-1.708 [a, b]	-0.926 [b]
Black	-0.012	0.587 [a]	1.904 [a]	1.355 [a]
Sociodemographic Factors				
Female	0.426 ***	0.385 ***	0.395 ***	0.380 ***
Age	-0.006	0.043 ***	0.043 ***	0.041 ***
Health				
Poor Health		-0.628 ***	-0.630 ***	-0.624 ***
ADL Limitations		-0.228 ***	-0.228 ***	-0.233 ***
Chronic Conditions		-0.309 ***	-0.310 ***	-0.304 ***
Same-sex Parent Alive		0.549 ***	0.556 ***	0.548 ***
Opposite-sex Parent Alive		0.212 **	0.215 **	0.210 **
Exercise		0.169 **	0.166 **	0.165 **
Smokes		-0.550 ***	-0.544 ***	-0.544 ***
Alcohol Consumption		0.052	0.049	0.046
Economic Factors				
Education		0.058 ***	0.066 ***	0.057 ***
Household Income (Log)		0.030	0.030	0.028
Wealth (Log)		-0.003	0.000	0.025
No Health Insurance		-0.035	-0.024	-0.014
Social Support				
Married		-0.021	-0.018	-0.026
Religion		0.065	0.067	0.064
Friends/Relatives Nearby		-0.011	-0.018	-0.013
No One to Help if Sick		-0.287 ***	-0.290 ***	-0.289 ***
Interactions				
Black * Education			-0.109 **	
Foreign-born Mexican Am. * Education			0.041	
Native-born Mexican Am. * Education			0.131	
Black * Wealth				-0.079 **
Foreign-born Mexican Am. * Wealth				-0.044
Native-born Mexican Am. * Wealth				0.051
Intercept	7.662 ***	5.920 ***	5.754 ***	5.715 ***
F	16.77 ***	76.02 ***	80.64 ***	70.74 ***
R^2	0.02	0.18	0.18	0.18

[a] Significantly different from Whites ($p < 0.05$)

[b] Significantly different from Blacks ($p < 0.05$)

[c] Significantly different from Native-born Mexican Americans ($p < 0.05$)

*$p < 0.05$ **$p < 0.01$ ***$p < 0.001$

Table 3. OLS Regression Predicting Expected Chance of Living to Age 85,
Net of Sociodemographic, Health, and Economic Factors

	Model 1	Model 2	Model 3	Model 4
Race/Ethnicity				
Foreign-born Mexican American	-1.346 [a, b, c]	-0.546 [a, b, c]	-0.622 [b]	-0.212 [b]
Native-born Mexican American	-0.522 [a, b]	-0.018 [b]	-1.367 [a, b]	-0.126 [b]
Black	0.901 [a]	1.365 [a]	2.629 [a]	2.082 [a]
Sociodemographic Factors				
Female	0.715 ***	0.623 ***	0.633 ***	0.618 ***
Age	-0.004	0.049 ***	0.049 ***	0.048 ***
Health				
Poor Health		-0.666 ***	-0.668 ***	-0.662 ***
ADL Limitations		-0.058	-0.057	-0.062
Chronic Conditions		-0.285 ***	-0.286 ***	-0.280 ***
Same-sex Parent Alive		0.737 ***	0.744 ***	0.737 ***
Opposite-sex Parent Alive		0.384 ***	0.387 ***	0.382 ***
Exercise		0.252 ***	0.249 ***	0.249 ***
Smokes		-0.586 ***	-0.580 ***	-0.579 ***
Alcohol Consumption		0.027	0.024	0.022
Economic Factors				
Education		0.045 **	0.053 ***	0.045 **
Household Income (Log)		-0.020	-0.019	-0.022
Wealth (Log)		-0.013	-0.010	0.014
No Health Insurance		0.126	0.137	0.144
Social Support				
Married		-0.093	-0.090	-0.097
Religion		0.075	0.077	0.075
Friends/Relatives Nearby		0.029	0.022	0.026
No One to Help if Sick		-0.334 ***	-0.336 ***	-0.335 ***
Interactions				
Black * Education			-0.104 *	
Foreign-born Mexican Am. * Education			0.023	
Native-born Mexican Am. * Education			0.137 *	
Black * Wealth				-0.074 *
Foreign-born Mexican Am. * Wealth				-0.031
Native-born Mexican Am. * Wealth				0.013
Intercept	4.966 ***	3.641 ***	3.483 ***	3.439 ***
F	34.68 ***	77.64 ***	66.42 ***	66.72 ***
R^2	0.03	0.16	0.16	0.16

[a] Significantly different from Whites ($p < 0.05$)

[b] Significantly different from Blacks ($p < 0.01$)

[c] Significantly different from Native-born Mexican Americans ($p < 0.05$)

*$p < 0.05$ **$p < 0.01$ ***$p < 0.001$

Figure 1. Estimated Racial-Ethnic
Subjective Survival Expectations to Age 75 by Education, HRS 1998
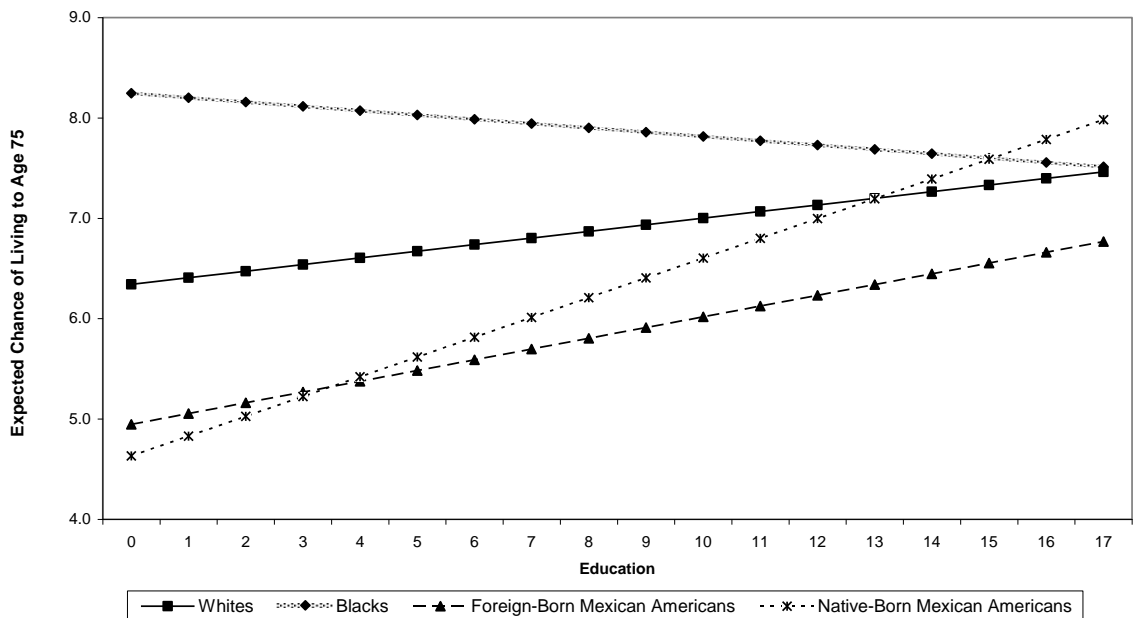
Note: The interaction term is signifcant only for Blacks (Whites are reference group). Estimation is based on results from Model 3 of Table 2 with continuous variables set to the mean and categorical variables set to zero.

Figure 2. Estimated Racial-Ethnic
Subjective Survival Expectations to Age 85 by Education, HRS 1998
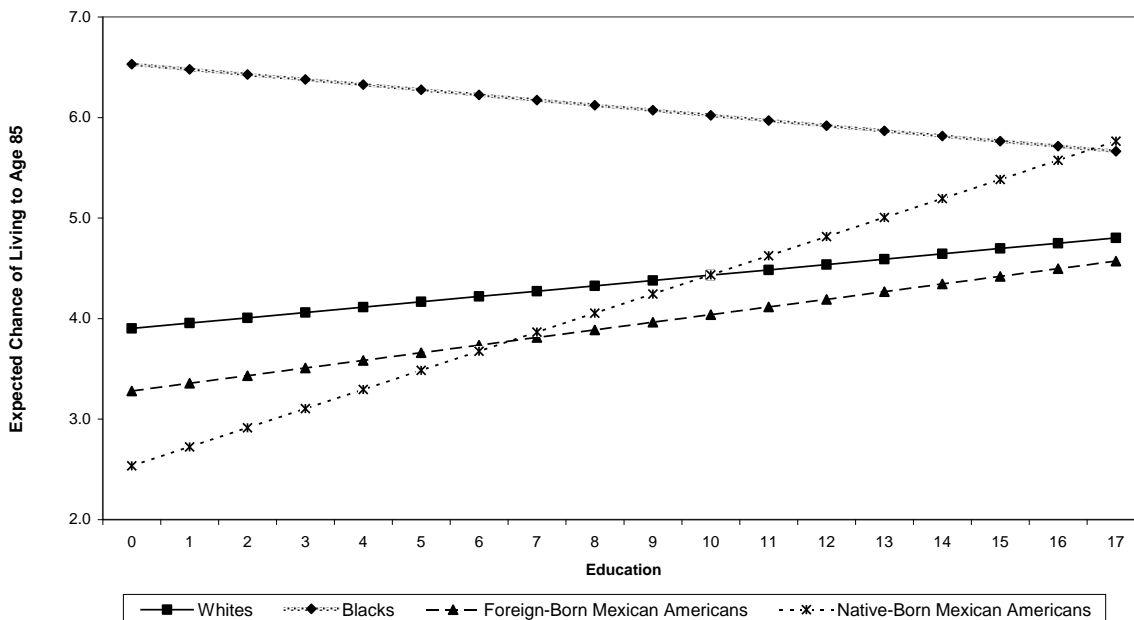
Note: The interaction term is signifcant only for Blacks and Native-Born Mexican Americans (Whites are reference group). Estimation is based on results from Model 3 of Table 2 with continuous variables set to the mean and categorical variables set to zero.

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