

## **The Impact of Personality Change on Health among Older Americans: Findings from the Health and Retirement Study**

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### *Introduction*

The relationship between personality and a wide array of health outcomes is well documented (Jokela, Hakulinen, Singh-Manoux, & Kivimäki, 2014; Lahey, 2009; Smith, Glazer, Ruiz, & Gallo, 2004; Turiano et al., 2011). However, much of the work analyzing psychosocial well-being, particularly in large panel surveys, focuses on a narrow range of indicators that are typically less psychologically driven. Until fairly recently, most nationally representative studies used by social scientists did not include personality, an important construct in psychological well-being. Because of past exclusion of personality at the population level, we know very little in the way of whether personality changes over time and whether any apparent changes exist among older people of color. As these constructs become more commonplace in national surveys, researchers will be able to assess demographic trends in personality and its relationship to health disparities research. Additionally, what is missing from the conversation surrounding personality and health is how personality, an individual-level factor, interacts with social-environmental factors and institutional structures to explain disparities we may see by race/ethnicity.

### *Research Questions*

This study seeks to initially uncover potential race/ethnic differences in reports of personality, as measured by the Big Five personality scale, in a sample of older Americans. Upon establishing these differences, I examine whether race/ethnic differences are explained by demographic characteristics, such as age, education, and gender. Additionally, I evaluate whether personality both at the trait level and over time lead to differential adverse health outcomes, as defined by measured and self-reported reports of hypertension, by race.

### *Data & Methods*

The Health and Retirement Study (HRS) provides the sample used for this research. The HRS is a nationally representative, longitudinal survey of Americans 50 years of age and older conducted every two years. Although the HRS began in 1992, detailed psychosocial measures have only recently been included. The Participant Lifestyle module represents the first comprehensive set of psychosocial indicators, including the 5 dimensions of personality, available in the dataset. The HRS utilizes 26

items, based on the Midlife Development Inventory (MIDI) personality scales, to construct indices of the Big Five dimensions. Respondents were asked to note whether a given item described their personality (1) a lot, (2) some, (3) a little, or (4) not at all. The first wave of personality-related measures was implemented in 2004 when a pilot module to collect psychosocial information was first conducted. A random sample of half of the core respondents was interviewed in 2006, whereas the remaining core respondents were interviewed in the following wave (2008). Those interviewed in 2006 were re-interviewed in 2010. Similarly, the participants providing responses on personality characteristics in 2008 were interviewed again in 2012. This study utilizes the 2006 and 2008 waves of the HRS to establish race/ethnic variation in personality. T-tests were used to examine the race differences, whereas ordinary least squares regression was used to control demographic characteristics by race. Big Five mean change trait scores were created by subtracting 2006 personality trait scores from those of 2010<sup>1</sup>. Change scores for each of the five traits were evaluated. Regression models were utilized to examine the relationship between changes in personality and hypertension, while controlling for demographic characteristics (race, age, gender, education, work status, income).

### *Preliminary & Expected Results*

Table 1 shows the means and standard deviations of the Big Five personality factors by race/ethnicity in the initial waves. Blacks differ significantly from non-Hispanic whites on each personality dimension; Hispanics differ from whites on three dimensions and from Blacks on 4 factors. Blacks have the highest average score for extraversion, while there is no difference between the mean score for whites and Hispanics. Whites appear to be more conscientious than their black and Hispanic counterparts, whereas no statistically significant difference between blacks and Hispanics exists on conscientiousness. Hispanics report, on average, higher scores on neuroticism than both blacks and whites. Blacks appear to be less neurotic than whites as well. Blacks are more open to experiences than both whites and Hispanics, while Hispanics are the least open to experiences of the three groups.

Table 2 reports the results of ordinary least squares regressions that take into account gender, age, and education in explaining race differences in personality. The inclusion of gender has a significant impact on black-white differences on the extraversion measure. Blacks were more extroverted than whites, but this association did not remain significant once gender was taken into account. However, the inclusion of both age and education leads to higher scores on extraversion for blacks than for whites. The middle cohort (ages 65-74) reports a significantly higher score on extraversion than their younger counterpart, whereas those over the age of 75 are significantly less extroverted. Extraversion is higher with more education. Those with less than a high school diploma score lower than those who completed high school on extraversion. In turn, those with more than a high school education score higher on extraversion than those who only completed high school.

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<sup>1</sup> Personality data from the 2012 survey were not available during the initial analyses.

Blacks are more agreeable than whites; however, this difference is eliminated once gender and age are taken into account. Whites were more likely to report higher neuroticism than blacks, whereas Hispanics reported the highest average scores on neuroticism. This race-personality relationship for neuroticism remained after controlling for demographic characteristics. Also, as hypothesized, whites were lower on extraversion than blacks, although there appeared to be no significant difference between whites and Hispanics. In regards to educational attainment, those with less than a high school diploma are less agreeable than high school graduates.

Blacks and Hispanics are less conscientious than whites, even after controlling for gender and age. The oldest group of respondents is less conscientious than the youngest group. Race differences found in conscientiousness appear to operate through education as the inclusion of education diminishes both the black-white and Hispanic-white differences. Respondents with less than a high school diploma are less conscientious than high school graduates. High school graduates, in turn, are less conscientious than respondents who have received some schooling beyond high school.

Race differences in neuroticism remain after controlling for gender, age, and education. Blacks are less neurotic than whites, whereas Hispanics are more neurotic than their white counterparts. Respondents age 65 and over appear to be less neurotic than those between the ages of 53 and 64. Less educated individuals appear to report higher mean scores on neuroticism. Those with less than a high school degree are, on average, more neurotic, than high school graduates, whereas these high school graduates appear to be more neurotic than those with some schooling beyond high school.

Hispanics report a lower mean score on openness to experience than their white counterparts after controlling for gender and age. However, once education is added to the model, Hispanic-white differences are no longer significant. Interestingly, the black-white difference on openness to experience becomes significant only when education is considered, with blacks appearing to be more open to new experiences than whites.

The preliminary data provides a small snapshot into race/ethnic variation in personality. Additional analyses examining the relationship between personality changes and health will provide a more detail view of the connections between race, health, and personality.

### *Selected References*

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Table 1. Race/Ethnic Differences: Big Five Personality Scale, Mean Scores

	<b>White</b>	<b>Black</b>	<b>Hispanic</b>
	(ref)		
Extraversion	3.17 (0.58)	3.28 <sup>a</sup> (0.41)	3.17 <sup>b</sup> (0.46)
Agreeableness	3.50 (0.50)	3.56 <sup>a</sup> (0.35)	3.48 <sup>b</sup> (0.44)
Conscientiousness	3.36 (0.49)	3.31 <sup>a</sup> (0.40)	3.28 <sup>a</sup> (0.43)
Neuroticism	2.09 (0.63)	1.96 <sup>a</sup> (0.48)	2.28 <sup>ab</sup> (0.57)
Openness to Experience	2.95 (0.57)	2.99 <sup>a</sup> (0.45)	2.81 <sup>ab</sup> (0.50)
N	5,534	873	525

<sup>a</sup> statistically different from whites ( $p < 0.05$ ), <sup>b</sup> statistically different from blacks ( $p < 0.05$ )

<sup>c</sup>scale: 1 to 4

Table 2. The Impact of Demographic Characteristics on Big Five Personality: OLS Regression Parameter Estimates, weighted

		Extraversion			Agreeableness			Conscientiousness			Neuroticism			Openness to Experience		
		(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Female		0.09***	0.10***	0.10***	0.09***	0.27***	0.27***	0.09***	0.09***	0.10***	0.08***	0.09***	0.08***	-0.02	-0.01	0.00
Race (ref. White)																
	Black	0.10***	0.10***	0.12***	0.10***	0.03	0.04*	-0.06**	-	-0.04	-	-	-	0.04	0.03	0.08***
	Hispanic	-0.01	-0.01	0.03	-0.01	-0.02	0.00	-	-	-0.03	0.19***	0.17***	0.10**	-	-	-0.05
Age (ref. 53-64)																
	65-74		0.06***	0.07***		0.02	0.03		-0.03	0.00		-	-		-0.04*	0.01
	75 and over		-	-0.03*		-0.01	0.00		-	-		-	-		-	-0.10***
Educ. (ref. HS grad)																
	Less than HS			-0.06**			-			-			0.13***			-0.09***
	Post HS			0.05***			0.01			0.12***			-			0.24***
Intercept		3.12***	3.12***	3.09***	3.12***	3.36***	3.36***	3.32***	3.35***	3.27***	2.05***	2.12***	2.16***	2.96***	3.01***	2.86***
N		6,973			6,973			6,973			6,973			6,973		

<sup>a</sup> \*\*\* p<0.001; \*\*p<0.01; \*p<0.05, (1) gender and race; (2) addition of age; (3) addition of education