Racial Differences in Self-Reported Health among the Elderly: Biological or Social?

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Abstract

Previous research suggests that racial differences in self-reported health (SRH) may be due to variations in definitions of good health. Older Black, versus White, adults are expected to report fair or poor SRH more often, but the racial effect should be reduced as both biological and social measures are considered. The sample consists of 13,666 Black and White adults, ages 70 and over, from the 1984 Supplement on Aging and the 1995 Second Supplement on Aging combined. Black adults who were less physically active than a year ago, had heart disease, stroke or cerebrovascular disease, diabetes, lower body and upper body difficulties, and trouble seeing, and were about one-and-a-half to two times more likely to report fair or poor rather than good or better SRH. White adults who were less active, had eating, lower body and upper body difficulties, and heart disease, and were about two to three times more likely to report fair or poor SRH. In a combined sample, Black versus White adults remained 54 percent more likely to report fair or poor SRH. This research found that a social/behavioral factor, activity level, had the most impact on fair or poor SRH for each sample. However, none of the measures explained away the racial effect. Further research is needed on life-course definitions of health.

Introduction

Research across various age groups has shown racial differences in self-reported health (SRH), where Black adults were more likely than White adults to rate their health as fair or poor (Coward, et al., 1997; Ren and Amick, 1996; Blendon, et al., 1995; Schulz, et al., 1994; Mermelstein, et al., 1993; Mutchler and Burr, 1991; Adams and Benson, 1989; Dowd and Bengtson, 1978). Studies conducted by Larson, et al. (1998), Coward, et al. (1997), Krause and Jay (1994), Gibson (1991), and Engle and Graney (1986) suggest that racial differences in SRH may be due more to variation in Black and White adults' definitions of good health rather than to differences in objective health measures only. However, there is little research focusing on the elderly which tests whether racial differences in SRH can be explained by differences in how each group defines good health.

Exposure to Discrimination and Disadvantage over the Life-course

Previous studies suggest that older Black adults often perceive their health and health care options as worse than and more problematic than older White adults. These perceptions exist even after controlling for socioeconomic status differences, activities of daily living, instrumental activities of daily living, functional limitations, chronic conditions, and health promotion efforts (Ferraro, 1993; Mutchler and Burr, 1991).

Ferguson, et al. (1998) found that social factors also influenced perceptions about health care options. In addition to positive influences on health care decision-making, such as clarity in the doctor's communication and personal understanding identified by both Black and White patients, Black patients also identified the perception of health care discrimination as an influence on their decisions to have surgery. Thus, Black adults were less likely to receive surgery for heart disease than White adults. Racial differences in health status may be a factor of both objective health measures as well as other non-medical considerations, such as social position and historical treatment by certain doctors and/or health care facilities.

For elderly people who have endured many changes, their observed and self-reported health status is likely to be influenced by both macro- and micro-factors throughout their life-course. Life-course theory states that an individual's health is influenced by personal biography, sociocultural factors, and sociocultural times (Stoller and Gibson, 1997). The more stressful and tumultuous incidents there are at any of these three levels during older adults' lives, the more likely they are to rate their SRH as fair or poor. For each additional disadvantaged position or social environment an elderly person has had to deal with, such as being Black, a woman, being a blue-collar worker, being poor, not finishing high school, or legalized segregation, the more likely they are to rate their health as fair or poor (Hammond, 1995; *see "double jeopardy"* in Edmonds, 1990; *see "triple jeopardy"* in Kart, 1990; Dowd and Bengtson, 1978).

Joseph and Shweder's research (1992) lends some insight to the problem of how different groups define health, suggesting that personally or historically oppressed people are more likely to have an unstable and vulnerable perception of health, often shaped by those around them. Other research (Larson, Colangelo, and Goods, 1998; Coward, et al., 1997; Krause and Jay, 1994; Engle and Graney, 1986) suggests that Black adults assess their general health based on disabilities, bodily pain, cultural factors, racial oppression and health problems, while White adults assess their general health based on physical functioning, physical conditions and energy level. These findings imply two things - that Black adults would self-assess their health as poorer than White adults and that various groups have different definitions of health.

This research addresses three questions: 1) do racial differences in SRH exist among

older Black and White adults, 2) if so, how much of the disparity in SRH is attributed to race, and 3) how much of the disparity in SRH is based on variation in how each group defines good health? The following hypotheses are explored: 1) older Black adults are more likely than White adults to self-report their health as fair or poor, 2) the effect of race on fair or poor SRH would be reduced as a combination of biological and social health measures such as chronic conditions, socioeconomic status and racial discrimination are considered, and 3) as various biological or social health measures are controlled for in separate models by race, more social factors will account for fair or poor SRH in Black compared with White adults.

Method

Two nationally-representative, cross-sectional data sets of non-institutionalized civilians, the Supplement on Aging in 1984 (SOA) and the Second Supplement on Aging (SOAII) in 1995, were combined to enhance the sample size of older Black adults and to examine any racial changes over time. The sample was limited to non-Hispanic, Black and non-Hispanic, White adults, ages 70 and over, who participated in either study. Other ethnic groups were too small to examine for statistical significance. The sample was further limited to respondents who either answered all of the survey questions independently or in part, with the help of a proxy. The final sample included 13,666 people, where 54.5 percent of the sample was from SOAII data. Overall, the sample included 9.5 percent non-Hispanic, Black adults and 61 percent women. The data had a non-Hispanic, Black adult sample size of 463 persons from the SOA and 830 persons from the SOAII.

Logistic regression models were used to predict the probability of reporting fair or poor SRH (1=fair or poor vs. 0=excellent, very good, or good self-reported health) for older Black compared to White adults. Since one objective of this research was to test whether Black and White adults used different definitions of good health for SRH, the most appropriate methodological design was to address each racial group separately and then combined in a model. The same predictor variables estimated the likelihood of fair or poor health outcomes for a sample of Black adults (Model 1), a second sample of White adults (Model 2), and a third, combined sample of Black and White adults, to assess the impact of race on SRH. There were three combined models, including a race variable (1=Black vs. 0=White adults) and an attempt to model some life-course experiences with proxy variables for discrimination, such as interaction effects between race and age, year, gender, poverty level, family income and education (Model 3), a combined model without interaction effects to examine the main race effect (Model 4), and a simple model with only race as the independent variable (Model 5). Odds ratios were presented with 95 percent confidence intervals and significance levels.

The main models included basic demographic variables, chronic conditions, physical functioning, and social/behavioral conditions as independent variables that may influence older adults' SRH. Demographic variables included: year of survey (1=1995 and 0=1984), gender (1=women and 0=men), education (continuous years), family income (0=<$5,000, 1=$5,000-$6,999, 2=$7,000-$9,999, 3=$10,000-$14,999, 4=$15,000-$19,999, 5=$20,000-$24,999, 6=$25,000-$34,999, 7=$35,000-$49,999, 8=$50,000+), the poverty index (living at or below the poverty level vs. above), age (75-79, 80-84, 85+ vs. 70-74), and living arrangements (living alone, living with non-relatives, living with others vs. living with a spouse). Chronic conditions included whether the respondent had or has heart disease, stroke or cerebrovascular disease (CVA), cancer, arthritis, diabetes, osteoporosis, a broken hip, hypertension, as well as any trouble seeing and any trouble hearing. Physical functioning included activities of daily living (difficulty bathing or showering, dressing, eating, getting in and out of a bed or chair, walking, getting outside, or using the toilet) and lower body (a combined variable based on difficulty walking a quarter of a mile, walking up ten steps, standing on your feet for about two hours, sitting for about two hours, and stooping, crouching, or kneeling) and upper body difficulties (a combined variable based on difficulty reaching up over your head, reaching out as if to shake hands, using your fingers to grasp or handle, and lifting or carrying something weighing twenty-five pounds). Social/behavioral conditions included activity level (being less physically active than one year ago vs. being at the same or a greater activity level at the time of interview), exercise (does not follow a regular exercise routine vs. does) and body mass index (underweight, overweight vs. average weight). Instrumental activities of daily living were excluded because they tend to be performed by women, who make up 61 percent of the sample.

Results

In the unweighted sample of 13,666 people, 42 percent and 27 percent of Black and White adults, respectively, rated their SRH as fair or poor, showing racial differences in fair or poor SRH. Weighted and age-adjusted (using SUDAAN) comparisons of the data from 1984 to 1995 showed the percent reporting fair or poor health decreasing over time, for both Black (48.1 to 38.4 percent) and White adults (30.4 to 24.0 percent). However, the racial disparity in fair or poor SRH over time only slightly decreased, where Black adults reported fair or poor health more often than White adults.

Logistic regression models show persistent racial disparities in fair or poor SRH. The important factors (based on odds ratios greater than one) associated with older Black adults' fair or poor SRH, in descending order, were: whether respondents were less physically active than a year ago, had heart disease, a stroke or CVA, lower body difficulties, diabetes, upper body difficulties and trouble seeing. Those who were less

physically active than a year ago were two times more likely to report fair or poor SRH rather than good or better. But, those who had trouble seeing were 53 percent more likely to report fair or poor SRH. Gender, education, family income, poverty, age, living with other relatives compared with living with a spouse, had trouble hearing, cancer, arthritis, osteoporosis, a broken hip, hypertension, difficulty bathing and showering, dressing, eating, getting in and out of a bed or chair, walking, getting outside, or using the toilet, not regularly exercising, and being underweight (<19 kg/m^2), overweight (25-29.99 kg/m^2) or obese (>=30 kg/m^2) compared with being an average weight (19-24.99 kg/m^2), did not significantly influence fair or poor SRH (Model 1).

For White adults, similar health conditions were associated with a report of fair or poor health. The important factors (based on odds ratios greater than one) associated with White adults' fair or poor SRH were: whether respondents were less physically active than a year ago, had difficulty eating, lower body difficulties, heart disease, upper body difficulties, being underweight vs. an average weight, cancer, diabetes, difficulty bathing or showering or getting outside, not regularly exercising, a stroke or CVA, arthritis, difficulty getting in and out of a bed or chair or walking, hypertension and trouble seeing. Those who were less physically active compared with a year ago were almost three times more likely to have fair or poor SRH, and those who had difficulties eating, lower body difficulties and heart problems were about twice as likely to have fair or poor SRH. But those who had trouble seeing were only 14 percent more likely to report fair or poor SRH. Poverty, living with non-relatives or other relatives rather than living with a spouse, had trouble hearing, osteoporosis, a broken hip, difficulty dressing or using the toilet, and being obese compared with being an average weight, did not significantly influence fair or poor SRH (Model 2).

In the combined sample, the interaction between race and education was the only significant proxy for racial oppression. This interaction means that Black adults, with an average number of completed years of school (i.e., 10.7 years in the combined sample), were slightly more likely to have fair or poor SRH. The combined group was about two times more likely to rate their health as fair or poor when they were less physically active than a year ago, had difficulty eating, lower body difficulties, and heart disease. Living with non-relatives or with other relatives rather than living with a spouse, having a broken hip, difficulty dressing or using the toilet, and being obese compared with an average weight did not significantly influence fair or poor SRH (Model 3).

To examine if the main race effect existed in Model 3, it was run without the interaction effects. Older Black adults were 54 percent more likely to assess their health as fair or poor compared with older White adults (Model 4). Thus, when various biological and social factors were controlled in Model 3, there were still three Black

Table 1. Odds Ratios (OR) for Fair or Poor Self-Reported Health for persons 70 years of age and over: United States, 1984, 1995[a]

	MODELS				
VARIABLES	1[b]	2[c]	3[d]	4[e]	5[f]
Black vs. White adult				1.54***	1.96***
Year (1995 vs. 1984)	0.56**	0.68***	0.67***	0.66***	
Sex (women vs. men)		0.65***	0.66***	0.67***	
Education		0.92***	0.93***	0.94***	
Family income		0.90***	0.90***	0.90***	
Age (75-79 vs. 70-74)		0.78***	0.78***	0.80**	
Age (80-84 vs. 70-74)		0.62***	0.63***	0.64***	
Age (85+ vs. 70-74)		0.46***	0.47***	0.49***	
Living alone vs. living with a spouse	0.47**	0.67***	0.65***	0.64***	
Living with non-relatives vs. living with a spouse	0.19*				
Trouble seeing	1.53*	1.14*	1.18**	1.17**	
Trouble hearing				1.13*	1.13*
Have or had heart disease	1.93**	2.00***	2.00***	2.01***	
Have or had stroke or CVA	1.92*	1.41**	1.44***	1.43***	
Have or had cancer		1.58***	1.59***	1.58***	
Have or had arthritis		1.31***	1.32***	1.32***	
Have or had diabetes	1.72*	1.56***	1.57***	1.57***	
Have or had osteoporosis			1.28*	1.26*	
Have or had hypertension		1.29***	1.29***	1.29***	
Difficulty bathing and showering		1.50***	1.44***	1.44***	
Difficulty eating		2.32***	2.35***	2.34***	
Difficulty getting in and out of a bed or chair		1.31*	1.28*	1.28*	
Difficulty walking		1.30**	1.29**	1.29**	
Difficulty getting outside		1.46**	1.44**	1.44**	
Less active than a year ago vs. more or same	2.10***	2.75***	2.66***	2.66***	
Does not follow a regular exercise routine vs. does		1.43***	1.43***	1.43***	
Lower body difficulties	1.89**	2.11***	2.07***	2.06***	

Table 1. (continued)

	MODELS				
VARIABLES	1[b]	2[c]	3[d]	4[e]	5[f]
Upper body difficulties	1.71*	1.78***	1.77***	1.77***	
Underweight vs. average weight		1.65***	1.54***	1.53***	
Overweight vs. average weight		0.84*	0.86*	0.87*	
Race * education			1.08**		

[a] Only those variables that were significant in each model are shown here.
[b] Sample of older Black adults only.
[c] Sample of older White adults only.
[d] Combined samples of both older Black and White adults, with interactions.
[e] Combined samples of both older Black and White adults, without interactions, to examine main effects.
[f] Combined samples of both older Black and White adults, with race only as an independent variable.

*** p<0.001, ** p<0.01, * p<0.05

Source: Supplement on Aging and Second Supplement on Aging, NCHS

adults who reported fair or poor health for every two White adults.

Discussion

This research tested the conclusions of previous authors who suggested that racial differences in SRH may be due more to variations in how Black and White adults define good health, rather than to differences in objective measures of health only. This study investigated: 1) whether older Black adults were more likely than White adults to self-report their health as fair or poor, 2) if so, how much of the disparity in SRH is attributed to race, and 3) how much of the disparity in SRH is based on variation in how each group defines good health?

Bivariate analysis supports hypothesis one, where 42 and 27 percent of Black and White adults, respectively, rate their health as fair or poor. Multivariate analysis also supports hypothesis one, where 54 percent of the disparity in SRH between Black and White adults was attributed to race (Model 4).

To address hypothesis two, a simple model was run, examining only the race effect on SRH (Model 5). The results show Black adults were almost twice as likely as White adults to report fair or poor health. This 2:1 ratio of older Black vs. White adults with fair or poor SRH is higher than the 3:2 ratio in Model 4. Thus, hypothesis two is supported since controlling for biological and social factors reduced racial effects on SRH.

To address whether biological or social factors were more important to fair or poor SRH, this research found that a social/behavioral factor, activity level, had the most impact. Those who were less active than a year ago were more than twice as likely to report fair or poor health for the Black, White, and combined samples. For older Black adults, the previous social/behavioral condition, followed by chronic conditions and physical functioning, had the strongest impact on fair or poor SRH. For older White adults, the same social/behavioral condition, followed by physical functioning and chronic conditions, had the strongest impact on fair or poor SRH. Thus, hypothesis three was supported based on one social/behavioral measure.

This analysis shows that race remains an explanation for the variance in SRH between older Black and White adults, even after controlling for other demographic variables, chronic conditions, physical functioning, and social/behavioral conditions. Further research is needed on varied definitions of health for older Black and White adults, where more cumulative measures and qualitative analyses are needed to address learned health behaviors, medical care, and discrimination over older adults' lifetimes.

Research has shown that health behaviors, interactions with health care providers and institutions, and racial discrimination were all associated with health status. Negative health behaviors and social networks were linked to decreased physical functioning (Michael, et al., 1999). Patient-physician camaraderie (Ferguson, et al., 1998), physician treatment styles (Bertakis, et al., 1998), health service difficulties (Shi, 1999; Wallace, 1990), and type of health insurance (Miller, et al., 1997) were associated with variations in how SRH was defined. Other research shows a weak relationship between racism and SRH for Black adults (Jackson, et al., 1996). But for older adults, we may need to consider the possibility of discrimination on a number of levels, such as race or ethnicity (i.e., being a Black adult), class (i.e., being poor), gender (i.e., being a woman), and age (i.e., being an elderly person), each independently and simultaneously as they interact, at one or multiple points in time, influencing SRH.

This study has improved upon previous studies on racial differences in SRH by using nationally-representative data of non-institutionalized civilians and a larger sample of older Black adults. However, an improved operational definition of racial discrimination is needed to understand how older adults have reacted to being in disadvantaged positions throughout their lives. Perhaps applying Krieger's (1990) instrument on racial and gender discrimination to an older sample of adults, and modifying it to include age discrimination and poverty, may address this need.

Furthermore, since most of the significant effects on older Black and White adults' SRH were from chronic conditions and physical functioning, more research is needed on how social factors associated with minority racial status manifest themselves through biological measures. More specifically, data are needed on how earlier life-course events influence an older person's current well-being. Research in this area suggests that maternal health and environment influence a fetus and even a child's later life disease and mortality risk (Barker, 1998). Other research suggests that psychological, economic, and social factors interact with biological development in childhood and influence disease risk in later life (Power and Hertzman, 1997; Wadsworth, 1997; Kuh and Wadsworth, 1993). This research helps us understand that problems such as heart disease, CVA, and difficulties with functioning develop over time, from accumulated social, economic, psychological, cultural, and environmental events. However, data on this research is limited, in that health surveys usually do not examine all of the previous factors. Thus, longitudinal and in-depth analyses, using a biopsychosocial approach to examine health will help in understanding racial differences in SRH and other diseases.

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