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Health Characteristics and Health Behaviors of African American Adults According to Self-rated Health Status

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Abstract

Objectives—Although African Americans report poorer self-rated health (SRH) than Whites, few studies have explored what factors are associated with SRH in this population. Our study described the health characteristics and health behaviors of a sample of adult church members according to SRH status.

Design—Cross-sectional.

Setting—74 African Methodist Episcopal churches in South Carolina.

Participants—1077 church members (99% African American).

Main Outcome Measures—Self-reported physical activity, fruit and vegetable consumption, fat- and fiber-behaviors, perceived stress, and presence of chronic health conditions, objectively measured body mass index (BMI), waist circumference, and blood pressure. Health-related characteristics and health behaviors across SRH categories were calculated. Analysis of covariance examined relationships between SRH and the presence of chronic diseases, the total number of chronic diseases, health-related variables, and health behaviors.

Results—The health characteristics and health behaviors of participants worsened with declining SRH. The percentage of participants with each individual chronic health condition increased, as did the total number of chronic health conditions, as SRH declined. A higher BMI, a greater waist circumference, and higher perceived stress were associated with poorer SRH. Participants with lower physical activity and poorer fat- and fiber-behaviors also had poorer SRH. Fruit and vegetable consumption was not associated with SRH.

Conclusions—A better understanding of what health-related variables and health behaviors contribute to SRH may inform future interventions, as researchers and practitioners can target and

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effectively change the most salient factors. Fortunately, a majority of the factors are modifiable and can be prevented or reversed with changes in lifestyle.

Keywords

Self-rated Health; Health Behaviors; Chronic Health Conditions; African Americans

Introduction

Self-rated health (SRH) gauges one's subjective perception of his or her health.[1] Typically measured with a single question, participants are asked to rate their health on a 5-point scale ranging from excellent to poor.[1] Self-rated health has been commonly used to compare health statuses between population groups, as an outcome in clinical trials, and as an indicator in risk assessments in clinical practice.[1] Individuals have considerable autonomy in deciding what information to use when evaluating their health (eg, health conditions, states, symptoms/sensations, previous health experiences, disposition, contextual factors).[1] The comprehensiveness, inclusiveness, and non-specific nature of SRH may allow researchers to capture dimensions of health that may not be captured by more detailed or guided questions or by objective health measures.[1]

Self-rated health has been shown to be a strong predictor of mortality, even after controlling for other health factors. A meta-analysis by DeSalvo et al[2] found that persons with poor SRH had a nearly 2-fold higher mortality risk than those with excellent SRH. The measure has also been shown to be a strong predictor of morbidity. A study by Latham et al[3] found that SRH was a significant predictor of the onset of any chronic condition and of five specific chronic conditions (ie, coronary heart disease, diabetes, stroke, lung disease, and arthritis) in a sample of late midlife adults. Studies have also shown an association between SRH and health behaviors, such as physical activity,[4–7] fruit vegetable consumption,[5,6,8] and health care use,[9] where individuals engaging in healthy behaviors and utilizing health care services rate their health more positively. Additionally, a higher BMI has been associated with lower SRH.[5,10,11]

In addition to the disproportionately higher rates of chronic disease,[12] African Americans also report worse SRH than Whites.[13,14] The high rates of overweight/obesity,[15] as well as the higher prevalence of unhealthy lifestyle behaviors among African Americans may contribute to poorer SRH. There is also evidence suggesting that socioeconomic factors (eg, long-term neighborhood poverty, family income, wealth) may, in part, account for the differences in SRH among African Americans and Whites.[16] Further, African Americans have been shown to be more pessimistic about their health and therefore tend to evaluate their SRH more negatively than Whites, even when their health status is similar (ie, discrepancy between subjective and objective health).[17]

Despite a growing interest in the elimination of health disparities in the United States, few studies have focused on investigating SRH exclusively in African Americans. As SRH provides insight into perceptions of overall health, the use of this measure (in concert with objective health measures) may shed light on the health beliefs that are highly prevalent and perhaps unique in the African American community. Understanding which health behaviors

and chronic health conditions influence ratings of overall health may be key to developing tailored health promotion efforts that resonate with the targeted group.

The purpose of our study was to describe the health characteristics and health behaviors according to SRH status in a sample of predominantly African American church members taking part in a faith-based physical activity and dietary intervention. More specifically, our study examined the association between SRH and: 1) individual chronic health conditions, 2) total number of chronic health conditions, 3) health-related factors, and 4) health behaviors.

Methods

The Faith, Activity, and Nutrition (FAN)[18] program was a 15-month physical activity and dietary intervention implemented in 74 African Methodist Episcopal (AME) churches in South Carolina. The intervention was implemented in three waves across a 5-year time period, was developed using a community-based participatory research approach and targeted organizational and environmental change within the church. Consistent with the structural ecological model,[19] the intervention targeted each of the four structural factors thought to influence behavior: availability and accessibility, physical structures, social structures, and cultural and media messages. The primary goals of FAN were to increase moderate to vigorous intensity physical activity and fruit and vegetable consumption, and to improve blood pressure; secondary aims were to decrease fat and sodium intake, and increase whole grain consumption.[18]

Church Recruitment and Measurement Sessions

A more detailed description of the FAN methods has been previously published.[18,20] In short, presiding elders from 4 geographically-defined AME districts in South Carolina sent pastors a letter introducing the FAN program and inviting participation. Program staff made follow-up telephone calls to pastors to provide more details about the FAN program and to answer any questions. Pastors from interested churches typically appointed a liaison from their church to assist program staff to schedule and coordinate measurement sessions.

Liaisons from interested churches recruited members of their congregation to take part in a measurement session at baseline (prior to the start of the intervention), with recruitment goals a function of church size (13 small churches, 32 medium, 63 large). At each session, participants completed an informed consent form approved by the Institutional Review Board at the University of South Carolina and by the FAN planning committee. To be eligible, participants had to be aged ≥18 years, free of serious medical conditions or disabilities that would make changes in physical activity or diet difficult, and attend church at least once a month. Upon providing consent, trained staff took physical assessments and participants completed a comprehensive survey. Our study uses baseline data only, therefore details of the intervention are not described.

Measures

Sociodemographic and Health-related Variables—Participants self-reported their age, sex, race, marital status, and highest educational attainment.

Self-rated Health—Self-rated (SRH) health was assessed by asking participants, "Would you say that in general your health is…" using the following 5-point scale: 1 (excellent), 2 (very good), 3 (good), 4 (fair), and 5 (poor).[21]

Chronic Health Conditions—Self-reported presence of diabetes, hypertension, high cholesterol, and arthritis was assessed by asking participants, "Have you ever been told by a doctor, nurse, or other health professional that you had…?"[21]

Resting blood pressure was taken with the automated DinaMap ProCare Monitor (DPC-100X-EN).[22] Participants with a systolic blood pressure >140 mm Hg or diastolic blood pressure >90 mm Hg or that endorsed yes on the self-report question were classified as having hypertension.

Height to the nearest quarter inch and weight to the nearest 1/10 kilogram were obtained by trained staff. BMI was calculated as kg/m^2 using standard procedures. A BMI ≥30 kg/m^2 was considered obese.

Waist Circumference—Waist circumference was measured by locating the narrowest part of the torso, located between the participant's ribs and the iliac crest.[23]

Perceived Stress—A 4-item version of the Perceived Stress Scale[24,25] measured the degree to which situations in one's life are appraised as stressful. On a scale from 1 (never) to 5 (very often), participants were asked how often, in the last month, he/she felt the way described.

Fat and Fiber Behaviors—The Fat and Fiber-Related Behavior Questionnaire[26] assessed fat- (27 items) and fiber-related (14 items) dietary behaviors over the past three months. Psychometric properties for these summary scores have been previously established.[26,27]

Fruit and Vegetable Intake—The National Cancer Institute fruit and vegetable all-day screener measured fruit and vegetable consumption (cups/day).[28] Nine of the original ten items were used (French fry consumption was excluded). Participants were asked about the types and quantity of fruits and vegetables consumed in the past month. Psychometric properties for this instrument have been previously established.[29,30]

Physical Activity—The Community Health Activities Model Program for Seniors (CHAMPS) questionnaire[31] assessed leisure-time moderate to vigorous physical activity. The CHAMPS assesses the frequency and duration of various physical activities completed in a typical week during the past 4 weeks. A 36-item modified version, similar to the one described by Resnicow et al,[32] was used in our study. Hours per week of leisure-time moderate to vigorous physical activity (≥3.0 METs, with the removal of household and related activities) were calculated. This measure has been shown to have strong psychometric properties.[31,33]

Statistical Analyses

Descriptive statistics included means and frequencies of study variables for the entire population and across SRH categories; Chi-square (χ^2) and analysis of variance (ANOVA) tested differences across health status categories. The % of participants with each chronic health condition and the total number of health conditions (sum of diabetes, hypertension, high cholesterol, arthritis, and obesity) across categories of SRH was calculated. Means of the health-related factors (BMI, waist circumference, stress) and health-behaviors (fruit and vegetable consumption, fat and fiber behaviors, physical activity) across SRH categories were calculated. Analysis of covariance (ANCOVA), using SAS PROC MIXED to control for church clustering, examined relationships between SRH (dependent variable) and the presence of chronic diseases (yes/no), the total number of chronic diseases, health-related variables, and health behaviors. Self-rated health was treated as a continuous variable in all analyses, and all models controlled for age, sex, and education.

Results

Of the 1257 participants taking part in baseline measurements, 1077 had complete data and were included in our study. Those included were more educated, more likely to be married, less likely to be hypertensive, and had a lower waist circumference than those not included ($P<.05$). Demographic and health-related characteristics of the total sample and for participants in each SRH status category are shown in Table 1. The entire sample, on average, was 54.0 ± 13.8 years of age, predominantly African American (99%), female (76%), married (55%), had at least some college education (60%), and were overweight or obese (89.0%); 4.8% of participants reported excellent SRH, 25.2% very good, 51.5% good, 16.7% fair, and 1.8% poor. In general, female, older, obese, and less educated participants were more likely to report worse SRH ($P<.05$).

The prevalence of chronic health conditions across SRH categories is presented in Table 2. The percentage of participants with each chronic health condition, as well as the total number of chronic health conditions, increased as SRH declined ($P<.0001$).

The unadjusted means and standard deviations of health-related variables and health behaviors across categories of SRH are presented in Table 3. As SRH declined, BMI, waist circumference, stress, and fat-related behaviors increased, whereas physical activity and fiber-related behaviors decreased ($P<.0001$). There was no significant relationship between SRH and fruit and vegetable consumption ($P=.10$).

Discussion

Self-reported health is generally accepted as a useful indicator of individuals' perceptions of their overall health status[1] and has been shown to be a strong, independent predictor of mortality.[2] Our study described the health characteristics and health behaviors of African American adults across SRH status categories, and examined associations between SRH, health, and health behaviors. Relationships were in the expected direction, where those with poorer SRH had more chronic health conditions and poorer health behaviors. However, the

health characteristics and health behaviors of our sample, even those with a more favorable SRH status (ie, good, very good, or excellent), were less than ideal.

Three of the four health behaviors examined in this study were associated with SRH. Participants engaging in more leisure-time physical activity and with more favorable fat- and fiber-related behaviors had more positive SRH. Previous studies have shown a relationship between health behaviors such as physical activity,[4–7] television watching,[4] fruit and vegetable consumption,[4,6] and SRH. Tsai et al[8] found a relationship between the total number of healthy behaviors (ie, not smoking, not excessive drinking, physical activity, and fruit and vegetable consumption) and SRH in a diverse sample of US adults. The lack of association for fruit and vegetable consumption was surprising, but La-forge et al[34] also found no relationship between fruit and vegetable consumption and SRH, whereas Watters et al[35] actually found that African Americans with poor SRH had the highest fruit and vegetable consumption. It is possible that certain dietary behaviors, in this case fruit and vegetable consumption, do not have as great of an influence on perceptions of health as other health behaviors. Alternatively, it is possible that because a large proportion of our sample was obese, participants ate more in general, including more fruits and vegetables.

Chronic health conditions were very prevalent in our sample; 67% of participants had ≥2 conditions, 43% had ≥3 conditions, and 21% had ≥4 chronic health conditions. The presence of any chronic condition or disability has been shown to be a major contributor to poor SRH.[7] As expected, the presence of each chronic health condition in our sample was associated with lower SRH, and as the number of total chronic health conditions increased, SRH decreased. These findings are in line with the findings of other studies targeting various racial/ethnic groups,[7,13,36,37] including a sample of older African Americans, that have found a relationship between SRH and presence of chronic disease conditions. The relationship between SRH and BMI (and/or obesity) found in our study was in line with other studies in which a significant inverse relationship between weight category and SRH in various racial/ethnic groups,[5,10,11,36] including African Americans, was found.

Although there was a significant relationship between all chronic health conditions and SRH, hypertension (64%) and obesity (62%) in particular were highly prevalent across all health status categories. Many participants with these health conditions rated their health as good, very good, or excellent. Because hypertension and obesity are so prevalent in the African American population,[12] the presence of these conditions may be considered normal. Obesity is more accepted and less stigmatized in African Americans, especially among African American women.[38] African Americans' ideal body size for themselves and for the opposite sex have been shown to be significantly greater than they are for Whites.[39] Therefore, overweight or obese individuals (89% of our sample) may not necessarily perceive their weight status as an indication of poor health.

As supported by the findings of our study, SRH is a multi-dimensional construct, and a number of factors contribute to individuals' health rating.[1] Although chronic health conditions and health behaviors appear to have an impact on SRH, it is apparent that other factors also influence individuals' perceptions of their health, as many of those reporting more favorable SRH would not be considered to have good health. Of those reporting

excellent or very good SRH in our study, 13% had diabetes, 47% had hypertension, 26% had high cholesterol, 23% had arthritis, and 46% were considered obese; half had at least 2 chronic health conditions. The average BMI was 30.5 kg/m^2 (obese) and the average waist circumference was one that puts individuals at an increased risk for diseases. Unfortunately, our study did not measure how well participants were managing their chronic health conditions. It is possible that those who managed their chronic conditions more effectively viewed their health more favorably. Individuals with multiple chronic health conditions and large anthropometrics would likely benefit from improvements in lifestyle, however if an individual perceives themselves as being in good health, it may be difficult to promote such changes.

In line with our findings where individuals with many chronic disease conditions reported positive SRH, Cott et al[7] found that 82% of adult Canadians in their study reporting good or very good/excellent SRH had a chronic health condition and nearly 50% of participants reporting excellent/very good SRH had a chronic health condition. Collectively, these findings suggest that the presence of a chronic health condition doesn't necessarily equate to poor perceptions of health. Other variables such as pain, disability, mental health, well-being, or disease self-management likely influenced participants' SRH as well. The association between higher levels of stress and lower SRH in our sample supports the idea that variables beyond disease conditions and health behaviors influence perceptions of health. Future studies with similar samples should measure additional variables that may influence SRH.

There is some evidence showing that church attendance is associated with SRH.[40,41] Follow-up analyses showed that greater church attendance was associated with higher SRH, even after controlling for other health and health behavior factors (data not shown). It is possible that regular church attendance negated the influence of poor health and health behaviors; that is, although participants may have had poor health profiles, regular church attendance may have had a beneficial influence on the perception of one's health. Those with higher church attendance may also have larger social networks and greater social support; social support has been shown to be associated with better SRH.[42]

Although our study offers some unique insight into the relationship between SRH, health conditions, and health behaviors among African Americans, our findings should be interpreted with a number of limitations in mind. The presence of most chronic diseases and all health behaviors were assessed with self-reported measures. Such measures have inherent biases, including the possibility of under- or over-reporting. Second, due to the cross-sectional nature of this study, causality cannot be inferred.

Because SRH has been shown to be a strong, independent predictor of mortality[2] and morbidity,[3] understanding what types of health factors and health behaviors most strongly or most frequently contribute to the SRH of a specific population, such as African Americans, is important. Such insight may inform future interventions so that the most salient health factors associated with SRH can be effectively targeted and changed. Fortunately, a majority of the factors associated with SRH examined in this study are modifiable (eg, hypertension, BMI) and can be prevented or reversed with changes in lifestyle. Because religion and the

church play an important role in the lives of African Americans,[43] collaborating with the church via faith-based health promotion interventions may be one approach to successfully influence and improve the health behaviors (eg, physical activity and diet) of African Americans.

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Table 1

Sociodemographic and health-related variables for the total sample, and across self-rated health categories

	Total Sample (*n*=1077)		Excellent (*n*=52)		Very Good (*n*=271)		Good (*n*=555)		Fair (*n*=180)		Poor (*n*=19)	
	n	**% or Mean (SD)**	***n***	**% or Mean (SD)**	***n***	**% or Mean (SD)**	***n***	**% or Mean (SD)**	***n***	**% or Mean (SD)**	***n***	**% or Mean (SD)**
Age, years[a]	1077	54.0 (13.8)	52	51.1 (17.1)	271	51.7 (13.6)	555	54.6 (13.1)	180	56.0 (14.4)	19	56.9 (16.3)
Race												
African American	1069	99.4	52	100.0	269	99.3	550	99.5	179	99.4	19	100.0
White	4	.4	0	0	2	.7	2	.4	0	0	0	0
>1 race	2	.2	0	0	0	0	1	.2	1	.6	0	0
Sex[a]												
Male	255	23.7	23	44.2	75	27.7	111	20.0	38	21.1	8	42.1
Female	822	76.3	29	55.8	196	72.3	444	80.0	142	78.9	11	57.9
Marital status												
Married	588	54.9	29	55.8	155	57.6	306	55.5	88	48.9	10	52.6
Not married	483	45.1	23	44.2	114	42.4	245	44.5	92	51.1	9	47.4
Education[a]												
<HS grad	99	9.2	9	17.3	21	7.8	43	7.8	22	12.2	4	21.1
HS grad or GED	335	31.1	13	25.0	67	24.7	175	31.5	72	40.0	8	42.1
Some college	317	29.4	18	34.6	81	29.9	176	31.7	37	20.6	5	26.3
College graduate	326	30.3	12	23.1	102	37.6	161	29.0	49	27.2	2	10.5
Weight status[a]												
Normal	118	11.0	11	21.2	41	15.1	55	9.9	10	5.6	1	5.3
Overweight	296	27.5	29	55.8	92	34.0	141	25.4	31	17.2	3	15.8
Obese	663	61.6	12	23.1	138	50.9	359	64.7	139	77.2	15	79.0
Health care provider[b]												
Yes	1010	93.9	48	92.3	75	27.7	519	93.7	171	95.0	19	100.0
No	66	6.1	4	7.7	196	72.3	35	6.3	9	5.0	0	0

[a] Significant difference across self-rated health groups ($P<.05$).

[b] Saw health care provider in the past 12 months.

Table 2

Presence of chronic diseases across categories of self-rated health

	Excellent (*n*=52)		Very Good (*n*=271)		Good (*n*=555)		Fair (*n*=180)		Poor (*n*=19)		
	n	% or Unadjusted Mean (SD)	*n*	% or Unadjusted Mean (SD)	*n*	% or Unadjusted Mean (SD)	*n*	% or Unadjusted Mean (SD)	*n*	% or Unadjusted Mean (SD)	F with 1070 df, P^a
Diabetes, yes	2	3.9	39	14.4	139	25.0	77	42.8	10	52.6	55.62<.0001
Hypertension, yes	22	42.3	131	48.3	381	68.6	137	76.1	15	79.0	35.19<.0001
High cholesterol, yes	11	21.2	74	27.3	230	41.4	98	54.4	11	57.9	30.13<.0001
Arthritis, yes	8	15.4	67	24.7	201	36.2	92	51.1	9	47.4	26.93<.0001
Obesity, yes	12	23.1	138	50.9	359	64.7	139	77.2	15	79.0	57.44<.0001
Total health conditions[b]	52	1.1 (1.3)	271	1.7 (1.2)	555	2.4 (1.4)	180	3.0 (1.4)	19	3.2 (1.5)	138.95<.0001
0	25	48.1	59	21.8	48	8.6	7	3.9	1	5.3	
1	10	19.2	67	24.7	113	20.4	26	14.4	1	5.3	
2	9	17.3	77	28.4	141	25.4	27	15.0	5	26.3	
3	5	9.6	48	17.7	129	23.2	48	26.7	3	15.8	
4	3	5.8	16	5.9	92	16.6	41	22.8	5	26.3	
5	0	0	4	1.5	32	5.8	31	17.2	4	21.1	

[a] Adjusted for sex, age, and education.

[b] Sum of diabetes, hypertension, high cholesterol, arthritis, obesity.

Table 3

Health-related variables and health behaviors across categories of self-rated health

	Excellent (*n*=52)	Very Good (*n*=271)	Good (*n*=555)	Fair (*n*=180)	Poor (*n*=19)	
	Unadjusted Mean (SD)	Unadjusted Mean (SD)	Unadjusted Mean (SD)	Unadjusted Mean (SD)	Unadjusted Mean (SD)	F with 1070 df, P^a
Body mass index, kg/m^2	28.5 (4.4)	30.9 (6.6)	33.0 (7.0)	36.0 (8.2)	39.6 (10.3)	82.33<.0001
Waist circumference, cm	89.8 (9.5)	93.1 (14.0)	97.5 (14.4)	103.2 (14.3)	111.6 (14.0)	79.93<.0001
Stress[b]	2.0 (.8)	2.2 (.7)	2.4 (.7)	2.6 (.7)	2.7 (.8)	60.60<.0001
Fruit and vegetable consumption, cups/day	5.4 (4.9)	4.0 (3.7)	3.6 (3.5)	4.0 (4.5)	3.5 (4.9)	2.67<.10
Leisure-time physical activity, hours/day	8.1 (7.6)	4.9 (6.1)	3.8 (4.9)	2.2 (3.8)	2.1 (4.5)	45.95<.0001
Fat behavior[c]	2.5 (.5)	2.6 (.5)	2.7 (.4)	2.8 (.4)	2.8 (.5)	33.37<.0001
Fiber behavior[c]	2.6 (.6)	2.8 (.5)	2.9 (.5)	3.0 (.4)	2.9 (.6)	34.04<.0001

[a] Adjusted for sex, age, and education.

[b] Range 1–5, lower score indicates less stress.

[c] Range 1–4, lower score indicates more favorable fat- and/or fiber-related behaviors.