

SOCIOCULTURAL METHODS IN THE JACKSON HEART STUDY: CONCEPTUAL AND DESCRIPTIVE OVERVIEW

The Jackson Heart Study (JHS) is a prospective, population-based cohort study designed to investigate risk factors for cardiovascular disease (CVD) in African-American men and women. An aim of the JHS is the elucidation of the role that sociocultural factors play in the excess CVD risk and mortality in African Americans. Considerable evidence is available to document the influence of social, cultural, psychological, and other lifestyle risk factors on cardiovascular outcomes. Far less is known about how these factors affect health outcomes for African Americans. The JHS provides a unique opportunity to evaluate the presence and impact of these factors in this ethnoracial group. This paper describes the rationale and overall approach for sociocultural assessment in the JHS, both generally and for each content area. (*Ethn Dis.* 2005;15[suppl 6]:S6-38-S6-48)

Key Words: African Americans, Cardiovascular Disease, Jackson Heart Study, Lifestyle, Risk Factors

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INTRODUCTION

Morbidity and mortality rates for cardiovascular disease (CVD) are higher among African Americans than European Americans. Prevalence rates for both ethnoracial groups are also higher in Mississippi, the site of the Jackson Heart Study (JHS), than the rest of the nation.¹ Further, while national trends indicate an overall decline in CVD rates, recent evidence has documented increases for Mississippi African Americans, particularly women,^{2,3} thus widening the ethnicity and gender gap. This fact, coupled with the earlier age of CVD deaths among African Americans^{4,5} yields a particularly disturbing scenario.

Epidemiologic and clinical research has identified a variety of societal, psychological, and lifestyle factors that influence CVD incidence, morbidity, and mortality. The role that sociocultural factors may play in explaining excess CVD risk and mortality in African Americans is poorly understood. The extent to which African-American ethnicity interacts with other variables to moderate exposure to risk factors, evoke or protect from biological processes, and ultimately determine cardiovascular morbidity and mortality warrants careful study. At a basic level, we have yet to ascertain why systematic differences exist in risk profiles across ethnic groups, and any differential manner in which they combine to determine ultimate outcomes. The potential for ethnoracial, societal, psychological, and lifestyle factors to promote the expression of or interact with genetic or other biological susceptibilities must be considered and evaluated.

The JHS is a longitudinal, prospective cohort study of 5302 African Americans, which provides a unique opportunity to explore and elucidate the manner whereby risk factors contribute to the incidence of CVD and its associated outcomes. This study's strengths include the simultaneous examination of a comprehensive, theory-driven set of social, ethnoracial, psychological, and environmental variables (ie, sociocultural) alongside traditional and nontraditional biological measures. It will provide a unique opportunity for understanding the contributions of sociocultural factors to CVD health disparities.

We selected the term "sociocultural" to highlight the intent of the JHS investigators to emphasize the relevance of a broad array of societal influences, notably including cultural influences, which may have pervasive effects on behavior. Thus, whereas more common terms in current use (eg, psychosocial or behavioral) primarily refer to risk at the individual level, the term sociocultural emphasizes social influences on health, and that individual risk is inextricably linked to the broader social and environmental context.⁶

The primary aim of the sociocultural component of the JHS is to characterize the role of sociocultural factors in the development, progression, and clinical expression of CVD, CVD-related outcomes, and its associated risk factors. To this end, we plan to examine the manner in which a variety of relevant factors influence CVD risk, when considering direct, synergistic, and cumulative effects. This paper provides an overview of the underlying conceptual

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model, assessment methods, and selection of instruments to measure candidate sociocultural risk factors.

CONCEPTUAL MODEL

To understand the complex ways in which environmental and biological factors interact to produce ethnoracial variations in health, Williams' integrative model is employed as a framework for assessing sociocultural factors in this study.⁷ This model views race as a multidimensional construct that reflects the confluence of biological factors with geographic origins, cultural, economic, political, legal, and sociocultural/environmental factors. Most of these macrosocial factors are potentially interrelated and may combine both additively and interactively to determine individual health status, and ultimately, population health.

The model describes two classes of factors associated with race (Figure 1). Basic or fundamental causes are responsible for generating changes in health. In contrast, surface causes are related to specific health status, but changes in these factors do not necessarily produce corresponding changes in overall population health. As long as differential basic causal forces are in operation, altering surface causes merely gives rise to other intervening mechanisms that perpetuate disparities in health. The persistence of racial disparities in overall health during the last century, despite changes in the major causes of death and their underlying risk factors, is consistent with this perspective. The model depicts race as a social status category created by large-scale societal forces and institutions. Racism is one of multiple social structures that shapes the definition of race and racial identity and can affect health through multiple mechanisms.⁸⁻¹⁰ These mechanisms include differential access to educational and employment opportunities, as well as healthcare services, and

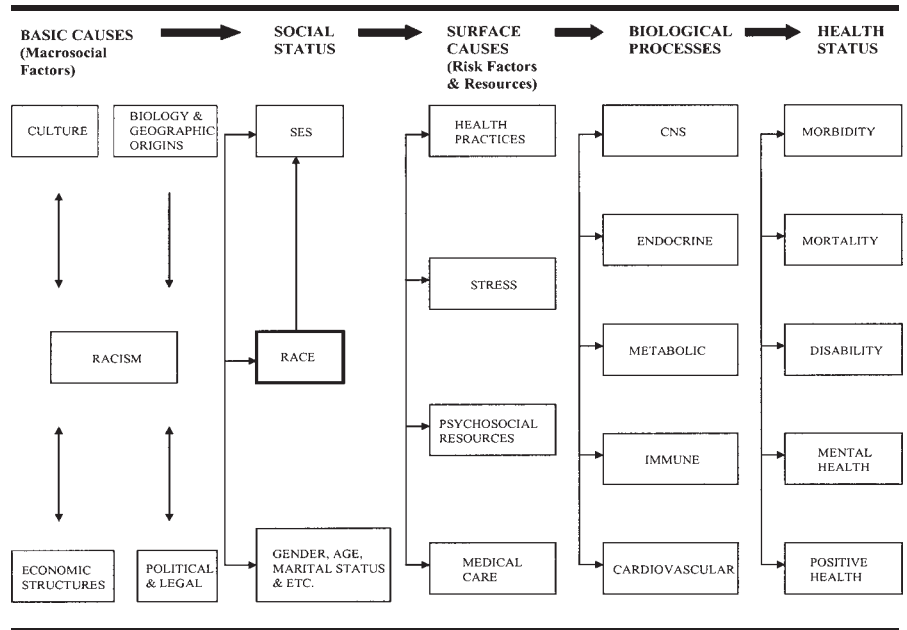


Fig 1. Conceptual model guiding protocol development and analysis strategies, adapted from Williams. Reprinted with permission from *Annals of Epidem.* 7(5), Williams DR: Race and health. 322-333, 1997 ©, with permission from Elsevier

disproportional exposure to environmental risk in occupational and residential contexts.¹¹ Intervening surface causes include health behaviors, stress, psychosocial resources like social support, religious involvement or ways of coping, and medical care.⁷

BACKGROUND

JHS Method Summary

The JHS is a longitudinal, population-based study designed to improve our understanding of the factors and mechanisms underlying the increased CVD morbidity and mortality among African Americans residing in the southeastern United States. It builds upon the Jackson cohort of the Atherosclerosis Risk in Communities (ARIC) study, a prospective, population-based investigation conducted in four US communities, including Jackson, Mississippi.¹² The JHS participants included 5302 African-American women and men between the ages of 35 and 84 recruited between September 2000 and March 2004. Potential participants were

selected either randomly or by using a strategic volunteer sample that strived to reflect the underlying age, gender, and socioeconomic distribution parameters of the population. Family members (some <35 and >84 years of age) were included to permit future studies of familial and genetic contributions to CVD.

The extensive examination included physical, laboratory, and questionnaire/interview evaluations addressing both traditional and new or emerging risk factors related to CVD, including early indicators of disease, genetics, sociocultural influences, and the interrelationships among risk factors and common disorders. Measures include anthropometrics, blood pressure, electrocardiogram, echocardiogram, carotid ultrasound, pulmonary function, physical activity monitoring, and assays for a wide variety of analytes.¹³

Sociocultural Method Approach

The research team endeavored to select measures that addressed factors central to the study model, were relevant to theory, and preferably had

established empiric support in African Americans. Some measures required modification, while others had to be created from multiple existing sources or were developed specifically for the JHS. Pilot testing was conducted as needed to assure that modified items were understandable. The sociocultural team of investigators drew items and scales validated from previous studies that included African-American participants (eg, National Survey of Black Americans [NSBA]; Detroit Area Study), epidemiologic studies (Established Populations for Epidemiologic Studies of the Elderly [EPESE], Eastside Village Survey), national surveys (National Health and Nutrition Examination Study – 3 [NHANES-3]), CVD studies (Cardiovascular Health Study [CHS], Coronary Artery Risk Development in Young Adults [CARDIA], Multi-Ethnic Study of Atherosclerosis [MESA]) and data that were available in the general literature. Efforts to construct a thorough, comprehensive assessment were balanced against practical time limitations and contiguous administration of physiological measurements.

METHOD

This section documents the rationale and decisions made regarding the development of the theoretically guided assessment battery. An overview of concepts, constructs, instruments, and timing of administration is summarized in Table 1. Previously developed measures were piloted with respect to establishing average time for completion. New or significantly modified measures were piloted for clarity and face validity as well as completion time. Additional psychometric testing of modified instruments is underway and will be reported elsewhere.

Basic Causes

Distal influences on health outcomes are a central argument in Wil-

liams' model. Without fundamental change in these factors, no substantive alteration in health outcomes can occur. Included among the factors are biological, cultural, and large-scale societal structures, the latter of which are frequently invoked but seldom empirically examined. The JHS will explore opportunities for comprehensive examination of cultural factors as an adjunct to the study, including opportunities to link our database with data from existing community life history and ethnographic studies conducted by investigators at Jackson State University over the past several decades. The JHS included measures of genetics and biology described elsewhere¹³ as well as place of birth and duration of current residence as indicators of geographic origins and exposure to cultural and societal influences. Aspects of racism and discrimination were operationalized as a structure that shapes the definition of race in American society and can affect health.

Racism and Discrimination

The pervasive nature of both blatant and subtle racist stereotypes in American culture may underlie yet another understudied root cause of race-associated health disparities.¹⁴ Three levels of racism have been identified: 1) institutional racism,¹⁵ where practices and policies concerning race are sustained through customs, standards, and regulations; 2) personally mediated racism, the interpersonal experience of discrimination and prejudice; and 3) internalized racism, the acceptance of cultural stereotypes of inferiority by a marginalized social group.⁸ While it is the institutional dimensions of racism that are implicated as a basic cause of health outcome differences, it is personally mediated racism that generally comes to mind for most persons when they hear the word "racism." Both aspects were included in JHS exam 1, and measures of internalized racism are slated for inclusion in a future exam.¹⁰

Measurement of both population- and individual-level racism remains fairly recent, and existing instruments have psychometric limitations.¹⁶ As no single measure captures the range of parameters identified for comprehensive assessment of the full impact of racism on health outcome, the JHS constructed a composite measure adapted from Krieger's Discrimination Scale¹⁷ used in CARDIA, McNeilly's Perceived Racism Scale,¹⁸ Williams' Everyday Racial Discrimination Questionnaire¹⁹ used in the 1995 Detroit Area Study, and a global rating of discrimination over the previous year. Indirect measures of institutional discrimination (socioeconomic status, neighborhood characteristics, access to health care) were incorporated as well as the extent of residential segregation determined by zip code of residence in comparison with census data. Perceived/personally mediated racism included measures of major episodic and everyday minor experiences of racism in multiple life domains that incorporate assessment of most recent and lifetime exposure, attribution of source (including skin color), and active vs passive coping response.

Social Status

Race

The idea of biologic race is the major contrary argument to sociocultural influences on health outcomes. Race is used by many investigators to refer to overt phenotypic differences, eg, skin color, facial features, and head or body size, and have inferred genetic differences. Yet evidence suggests that <.01% of each person's 100,000 genes represent physical characteristics. The concept of common racial gene pools is increasingly untenable; greater variation exist within races than between them.²⁰ Rather than a biological phenomenon, "race" has been defined more recently as a social construct that reflects the power relations within society and is

Table 1. JHS sociocultural assessment

Concept	Constructs	Measures	Administration
Basic causes	Daily hassles; chronic discrimination	Everyday racial discrimination questionnaire; attributions	Clinic interview*
<ul style="list-style-type: none"> • Racism • Discrimination • Geographic origin 	Responses to discrimination; unfair treatment Perceived racism Residential segregation Place of birth	Discrimination scale Perceived Racism Scale Neighborhood context: stressors, buffers Birthplace	Clinic interview Clinic interview Geocoded Census blocks Home interview
Social status	Personal data	Self-ascribed race; personal and spousal SES; marital; employment or retirement	Home interview [†]
<ul style="list-style-type: none"> • Socioeconomic status • Demographic factors • Race 	Economic deprivation during childhood Household wealth Household social status Class mobility Structural; economic isolation: individual, household, community	Parental SES; perceived economic position Net worth; total liquid assets Profile of main income earner; social embeddedness First occupation; global relative deprivation; thwarted aspirations Neighborhood class; neighborhood context: stressors, buffers; poverty/deprivation; SES/prestige	Year 1 F/U Home interview Home interview Home interview Home interview Year 3 F/U Geo-coded Census blocks
Surface causes	Major life events	Life experiences survey; life events scale	Post-clinic visit [‡] Year 1 F/U
<ul style="list-style-type: none"> • Health practices • Stress • Psychosocial resources • Medical care 	Minor stressors Chronic stress Perceived mastery Optimism Social support Coping strategies Religion and spirituality Depression Anger experience and expression Job strain Healthcare access, utilization, and compliance Tobacco use Alcohol and drug use Physical activity Diet	Weekly stress inventory Global Perceived Stress Scale John Henryism Life orientation test Interpersonal support evaluation list; Lubben Scale; social support form Coping Strategies Inventory (CSI) Organizational and private religiousness; spiritual experiences; religious coping CES-D, hopelessness scale Anger Expression Inventory, CHOST subscale of Cook-Medley Hostility Scale Job latitudinal satisfaction; control of production (ownership, budget, authority over workers, authority over own work) Perceptions of accessibility; availability of resources; barriers; folk medicine; non-traditional providers History of use; ETS exposure; FTND History of use; quantity-frequency Active living; occupational activities; home, family, yard and garden; sports and exercise; frequency, duration, effort Usual dietary intake <6 months	Post-clinic visit Post-clinic visit Home interview Year 3 F/U Year 2 F/U Post-home visit [§] Post-home visit Post-home visit Year 2 F/U Home interview Home interview Clinic interview Home interview Clinic interview

* Administered during clinic visit.

† 30-min home interview.

‡ Completed at home after the clinic examination.

§ 15-min form completed at home and brought to the clinic examination.

|| All followups conducted by telephone.

SES=socioeconomic status; F/U=followups; ETS=environmental tobacco smoke; FTND=Fagerstrom Test of Nicotine Dependence.

linked to specific health outcomes.²¹ Race was assessed in the JHS by asking the respondent to self-identify ethnicity in accordance with census categories. Those indicating they were Black or African American were retained as eligible participants. Including a direct or indirect measure of skin color was given substantial consideration and ultimately abandoned for reasons of cultural sensitivity.

Socioeconomic Status (SES)

Socioeconomic status (SES) is a powerful predictor of health, and lower SES is related to numerous negative health outcomes.²² Differential SES status accounts for a significant portion of the African-American disadvantage in CVD incidence and survival.²³⁻²⁵ Identifying the underlying mechanisms remains among the most important challenges in health research.²⁶ Using recently specified criteria calling for increased conceptual clarity and multidimensional approaches to measurement,²⁷ our SES measures have been refined to operationalize the construct beyond its traditional, narrow focus at the individual level^{9,11} and allow testing of JHS hypotheses regarding ways in which one's position in the social structure shapes life experience and CVD risk. In keeping with Williams' model, SES was defined as differential access (realized and potential) to desired resources.²⁸ We strived to capture the following dimensions: 1) the complexities of individual, family, and neighborhood or community variations of social stratification, including aspects of social capital²⁷ and social status^{28,29}; 2) the inequities afforded to African Americans at apparently equivalent levels of education, income, and occupation; and 3) the variation in SES over a lifetime, including specific measures of early life SES conditions.³⁰

Traditional individual measures of income, education, and occupation were used from the ARIC study, and geocoded measures of neighborhood

context were added. Analyses of these multilevel data in ARIC confirm that neighborhood context, independent of individual level variables, may be important in differentially shaping coronary heart disease (CHD) prevalence and risk factors among African Americans.³¹ More innovative components included in the JHS were: measures of wealth/assets; household social status; parental occupation and education; and subjective perceptions of comparative economic position, relative deprivation, and thwarted aspirations.³² Geocode-referenced census block information will be used to determine neighborhood and community measures (eg, poverty and socioeconomic ratings), social embeddedness (eg, available services, involvement in political and civic activities), and neighborhood context.^{33,34}

Other Social Status Variables

Other social status variables included in the model were the traditional demographic factors of age and gender, marital status, and occupational roles. Each of these provides a window on the multiple vulnerabilities that may additively or interactively combine with race to enhance or diminish a person's risk of disease. An index of vulnerability has been incorporated that tallies the number of vulnerable statuses as an index of their nonlinear effects on health outcomes.¹⁹

Surface Causes

Health Practices

Three major categories of health practices were evaluated: substance use/abuse, physical activity, and diet.

Substance Use and Abuse. Alcohol and illicit drug use may contribute to health disparities across ethnic groups.³⁵ The prevalence of alcohol use is decreasing in the United States, and is lower in African Americans than Whites; 4.5% of men and 2.8% of women were classified as heavier drink-

ers in a 1997 survey.³⁶ In the ARIC study, the risk of incident hypertension was increased for both European and African-American men consuming ≥ 210 g alcohol per week, but African-American men also had a greater risk of incident hypertension at low-to-moderate levels of alcohol consumption.³⁷ One case-control study³⁸ found a protective effect for moderate alcohol intake on ischemic stroke in men and women of European and African-American ethnicity.

Cocaine use is associated with a greatly increased risk of myocardial infarction during the first hour after use,³⁹ and NHANES-3 data suggest frequent cocaine use accounts for 25% of nonfatal myocardial infarctions in persons aged 18 to 45.⁴⁰ Cocaine use has also been associated with end-stage renal disease, especially in African Americans,⁴¹ but may not be an independent predictor of chronic hypertension.⁴² Illegal drug use may be related to personality characteristics and psychological states that are known to adversely affect CVD risk.

The association between the use of tobacco and the development of CVD is well accepted,⁴³⁻⁴⁵ and considerable evidence exists that attests to the benefits of quitting smoking.⁴⁶ African-American smokers have generally been found to be more nicotine dependent than Whites,⁴⁷⁻⁵⁰ and the preference for mentholated cigarettes is believed to have additional dependence-producing and health-damaging properties.⁵¹ Taken together, these findings provide at least a partial explanation as to why African-American smokers suffer from a disproportionately higher rate of tobacco-related diseases and experience greater difficulty achieving abstinence.⁵²

In addition to the direct effects on health outcomes, the JHS will provide an opportunity to evaluate the nature of any interactions between substance use variables and other risk factors for African Americans, an area where little data are currently available. Information

obtained about alcohol and drugs, by using items from the ARIC study and NHANES-3, will allow for classification of participants as lifetime abstainers, ever and frequent users, and users during the past 12 months. Items for alcohol included preferred beverage, lifetime history of heavy use, and quantity-frequency information for the past 12 months, whereas illegal drug use was assessed more generally regarding past or current use. A tobacco history was obtained, including types, amount, and duration of use. The Fagerström Test of Nicotine Dependence⁵³ was administered to assess level of tobacco dependence.

Physical Activity and Diet. An extensive assessment of physical activity and diet were included. The rationale, objectives, and measures are reported elsewhere^{54,55} in this issue.

Stress

To address this component of Williams' model, several standard and innovative aspects of stress measurement were incorporated. Measures were selected that evaluated direct exposure to various types of environmental events, the internal experience of distress, and characteristics that moderate one's reactions to life events.

Exposure to Stressors. Stress has been implicated as a risk factor for a wide range of diseases, including CVD. Despite wide variability in the conceptualization and measurement of stress, most epidemiologic studies have quantified exposure to major, minor, or chronic stressors. Major life events are defined as dramatic and severely taxing situations (eg, death of a spouse), the effects of which are thought to be cumulative and the effort of adaptation to be wearing. Major life events have been related to sudden cardiac death and incident myocardial infarction.⁵⁶⁻⁵⁸ Minor life events occur more frequently but individually impart a less severely negative

impact. These daily hassles, however, are also thought to be cumulative and wearing and have been linked to somatic health and psychological well being.^{59,60} Chronic stressors are defined as discrete events or conditions that persist over time, for example, environmental (noise, overcrowding), economic (work, financial), or role (marital, caregiver) stressors. In contrast to more time-limited and episodic life events, chronic stressors may provide a more plausible conceptual link to diseases that have a gradual, long-term onset, such as CVD.

The interrelationship among stressor types and their association with health outcomes has not been comprehensively studied. The JHS offers a unique opportunity to explore these issues, as well as more complex considerations. Stressor exposure, which has been related to both SES and ethnicity, may help explain socioeconomic or ethnic differences in CVD risk. Our evaluation involves the measurement of major life events with an 11-item events inventory developed for the Eastside Village Survey⁶¹ and a global rating. Minor life events were assessed with the Weekly Stress Inventory, which has been validated in CVD patients residing in Mississippi.⁵⁹ The evaluation of chronic stress posed greater challenges. Ultimately, this challenge led to the development of an 8-item Global Chronic Stress Scale, for which perceived stress was rated across eight broad domains commonly identified in the literature. An earlier version of this measure was piloted and modified based on responses from African-American focus groups conducted in Mississippi communities outside the JHS sampling frame.

Negative Emotions. In a growing body of literature, negative emotional states have been shown to influence CVD incidence, symptom expression, morbidity, and mortality.⁶² Hostility has emerged as one of the primary factors

presumed to account for associations between the type A behavior pattern and CVD.⁶³ Chronic anger and anger coping styles also have been related to CVD risk.⁶² Depression has been associated with excess CHD morbidity and mortality in several prospective, population-based studies.⁶⁴ Following myocardial infarction, depression also has been found to increase the risk of recurrence and mortality.^{65,66} Hopelessness, a construct that is related but conceptually distinct from depression, has been associated with incident myocardial infarction, progression of carotid atherosclerosis, and CVD mortality.^{67,68}

Many studies have attempted to identify the mechanisms that link negative emotions to CVD. The most direct putative pathway is through sympathetic activation involving elevated cardiovascular and neuroendocrine responses,⁶⁹ but few studies have examined the association between negative emotions and CVD in African Americans. In addition, as several negative emotions will be evaluated simultaneously, the evaluation of more complex interactions will be possible. Experiential hostility (ie, an attitude of cynicism, suspiciousness, mistrust, or resentful feelings toward others) was assessed with the CHOST, derived from the Cook-Medley Hostility Scale,⁷⁰ and anger expression was assessed with the anger-in and anger-out subscales of the State-Trait Anger Expression Inventory.⁷¹ To assess depressive symptoms, we selected the Center for Epidemiologic Studies Depression Scale.⁷² Finally, hopelessness was measured with the two-item KIHD Hopelessness Scale developed for the Kuopio Ischemic Heart Disease Risk Factor Study.⁶⁹

Psychosocial Resources

To assess this component of Williams' model, we employed a broad approach to address a variety of factors known to influence CVD, including social support, religion and spirituality, and several ways of coping with stressors.

Social Support. An extensive literature has established the importance of social support as a moderator of morbidity and mortality rates across a variety of diseases. Social support is generally considered to function as a buffer against the effects of stressful life events. Berkman, Vaccarino, and Seeman⁷³ further concluded that both low support (particularly emotional) and social isolation have been consistently related to all-cause mortality and cardiovascular death. Underlying mechanisms of action may include changes in cardiovascular, immune, and endocrine systems.⁷⁴

Unfortunately, few studies have included a more comprehensive evaluation of social support components to allow for a determination of their relative importance, any interactive effects, as well as linking specific support components to the amelioration of particular stressors. As with other areas of assessment, little work has been done with respect to applications to African Americans. For example, do standard social support components buffer against the effects of racism-related stressors? Addressing such issues stand to advance our understanding of social support in general, as well as ethnic-specific considerations.

The assessment of social support in the JHS emphasizes both functional and structural components of social support, as well as negative aspects of support. The Interpersonal Support Evaluation List⁷⁵ serves as the primary measure of functional aspects of positive social support. A modified, 16-item version was developed for the ARIC study, for which adequate psychometric properties appear evident.⁷⁶ The Lubben scale,⁷⁷ a measure of structural support that was used in the ARIC study, was continued in the JHS. Finally, an additional social support form was developed to permit a brief evaluation of other important dimensions not otherwise addressed, drawing questions from the Berkman Social Network Index⁷³ and the East Side Village Study.⁷⁸

Religion and Spirituality. Reviews have supported the salutatory effects of religious involvement on physical and mental health,^{79–83} particularly among African Americans.^{84,85} Religion and spirituality make up an especially important social and cultural resource that may contribute to understanding health status over the life course.⁸⁶ Several early studies showed that, on average, African more than European Americans were likely to use religious coping strategies.^{87,88} Anecdotal evidence suggested that African Americans employed religious cognitions in confronting health conditions as well as poverty and racism.⁸⁹ Indeed, Southern African Americans tend to have higher levels of religious involvement than others.⁹⁰ However, since convincing data are not yet available regarding potential mechanisms of religious/spiritual impact on CVD risks and outcomes, the inclusion of a set of items to broadly assess this dimension seemed warranted.

The dimensions of organizational religiousness, private religiousness, spiritual experiences, and religious coping were assessed. Items addressing organized religious activity include frequency of church, synagogue or mosque attendance, and the modality of that attendance (in person, media broadcasts, or other activities such as Bible study groups). Private religiousness was assessed based on the frequency of prayer or meditation outside of formal religious activities. The six-item Daily Spiritual Experiences Scale^{80,91} was included to assess the frequency of daily spiritual experiences and has recently undergone psychometric testing establishing reliability, validity, and equivalency with the 16-item version in an all-African-American sample similar to the JHS.⁹² Finally, in lieu of a more extensive multidimensional measure of religious coping,⁹³ a global indicator of the extent to which religion or spirituality assists in handling stressful situations was incorporated.

Coping with Daily Stressors. Coping refers to the cognitions and behaviors used by an individual in response to stressful life circumstances in an attempt to mitigate the effects of those experiences.⁹⁴ Its ultimate impact is considered to be a function of a variety of factors, including the specific coping behavior(s) employed, stimulus qualities of the target stressor, and response characteristics of the individual. Two primary schemes exist for classifying coping activities. The first emphasizes the type of action taken. Approach (or engagement) coping, which involves direct actions to manage an environmental stressor, versus avoidance (or disengagement) coping, which involves efforts to reduce exposure to a stressor. The second classification scheme is based on the desired outcome. Thus, problem-focused coping emphasizes management of the stressor itself, whereas the goal of emotion-focused coping is regulation of one's affective response. A number of studies have demonstrated that coping efforts can improve or worsen health outcomes, which supports the validity of this construct and the complex manner in which it may operate.^{59,95–98} The evaluation of coping as a mediator of stressors on health outcomes has not been adequately studied, and this fact is particularly so for African Americans. The Coping Strategies Inventory⁹⁹ was selected as it classifies coping based on the dimensions previously described. Two other instruments were selected to assure an adequate assessment of general coping. The Life Orientation Test was selected as a measure of optimism, known to predict cardiovascular outcomes.¹⁰⁰ In addition, we elected to include an assessment of John Henryism as an index of an individual's self-perception of the capacity to meet environmental demands through hard work and determination even in the face of overwhelming odds.¹⁰¹ James and colleagues¹⁰¹ have argued that individuals with high John Henryism scores

who have few resources, such as low level of education, are at greater risk for hypertension compared with those with greater resources or low levels of John Henryism. Support for this hypothesis in African Americans has been mixed.¹⁰²⁻¹⁰⁵ Previous research is subject to strong criticisms, including recent negative findings from CARDIA in which these issues were examined in a sample of young adults, a population that would be unlikely to reveal substantial effects.¹⁰⁶ The JHS should provide a better opportunity to address this question adequately, given a broader age range of African-American adults.

Medical Care

Perceived access to health care is associated with behavioral risk factors for chronic disease, including CVD, and healthcare outcomes.¹⁰⁷ As in the ARIC and other studies, characteristics such as health beliefs, type and source of care, insurance coverage, and perceived barriers to obtaining health services were evaluated. However, a fundamental assumption of existing models addressing access is that members of culturally diverse and under-served populations desire access into traditional healthcare systems. This assumption may not be accurate, and such studies may overlook culturally sensitive information concerning restrictions to traditional sources of care, particularly for persons who do not trust traditional healthcare providers or systems or are blocked from entry as a result of unseen sociocultural barriers. Also acknowledged is a well-developed system of alternative care and home remedies within the African-American community that is perceived to be beneficial.^{108,109} Thus, new measures in the JHS assess for participants' trust and satisfaction with their regular or most recent healthcare provider, as well as the use of folk remedies and visits to providers who deliver alternative health care. Additional detailed assessment of changes in insurance status and access to

prescription medications has been added to annual follow-up interviews.

DISCUSSION

The overall scientific goal of the JHS is to elucidate the relationships between African-American race and both the biological and environmental/behavioral factors associated with excess CVD risk and mortality. Research to date addressing sociocultural and biological contributions to CVD disparities observed in African Americans has suffered from theoretical and methodologic shortcomings. The JHS stands to make a unique contribution to understanding these issues by using an integrative model⁷ to emphasize macrosocial constraints on health behavior and outcomes.

This paper describes the theory-based assessment strategy developed for sociocultural factors in the JHS, including the development of new or modified scales, validation of measures within a large African-American sample, and examination of the interrelatedness among selected measures. General and overall rationales, brief literature reviews, and decisions regarding instrument selection and development were presented. The set of measures assesses a wide variety of relevant dimensions including multilevel measures of racism and discrimination and SES, as well as health behaviors, environmental stressors, emotional characteristics, psychosocial resources, and healthcare access.

There are limitations inherent in this research program, the most prominent of which is the use of a constrained geographic sample of a single ethnicity. This issue, in conjunction with Mississippi's history with respect to issues of racism may limit generalizability to other samples. Another issue concerns the significantly differential level of missing data across sociocultural measures. Because of the extensive nature of the assessment battery, forms were

administered at various times to reduce participant burden. As expected, those forms given to participants to answer at home and return to the clinic were completed at a lower rate. Despite these limitations, the JHS will provide overdue answers to important questions regarding the development and progression of CVD.

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