Determinants of Usual Source of Care Disparities among African American and Caribbean Black Men: Findings from the National Survey of American Life

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Abstract: **Purpose**. The Aday-Andersen model was used as a framework for investigating the contribution of immigration status (i.e., nativity and acculturation), socioeconomic factors, health care access, health status, and health insurance to usual source of health care (USOC) in a nationally representative sample of African American (n=551) and Caribbean Black men (n=1,217). **Methods**. We used the 2001–2003 National Survey of American Life, a nationally representative household survey of non-institutionalized U.S. Blacks to conduct descriptive and logistic regression analyses. **Results**. Older age, more health conditions, neighborhood medical clinic access, and health insurance were associated with higher odds of reporting a USOC. Odds were lower for men with lower-middle incomes and poorer mental health status. Having health insurance was associated with higher odds of reporting a USOC for African American men but lower odds among Caribbean Black men. Odds were higher in the presence of more health conditions for African American men than for Caribbean Black men. **Conclusions**. Health care reform policies aimed solely at increasing health insurance may not uniformly eliminate USOC disparities disfavoring U.S. and foreign-born non-Hispanic Black men.

Key words: Minority health, men's health, health care disparities, African Americans, Caribbean, men.

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Men's health disparities have received increased attention in recent years as researchers attempt to uncover the causes of persistent gender inequities in life-expectancy and mortality from conditions amenable to medical intervention.[1] Although the epidemiologic evidence is somewhat equivocal, men die sooner and more often than women from a number of chronic conditions.[2] Gender differences in mortality from medically amenable conditions are most pronounced for non-Hispanic Black men.[1] According to recent national estimates, non-Hispanic Black (NHB) men have a much higher cardiovascular disease death rate (422.8 per 100,000) than non-Hispanic White (NHW) males (306.6), NHB females (298.2), and NHW females (215.5 per 100,000).[3] Non-Hispanic Black men also have a 33% higher death rate from all cancers combined,[4] and death rates that exceed NHW men's from cancers detectable through preventive screening.[4,5] More specifically, despite recent declines in lung cancer mortality among NHB men, this population experienced a higher percentage of lung cancer-related deaths between 2000 and 2006 than individuals from other race-sex groups.[4,6] Prostate cancer also claims the lives of a disproportionately high number of NHB men, a disparity projected to increase significantly over the next 40 years.[7]

The causes of NHB men's markedly greater mortality reflect a host of biological, socioeconomic, and psychological factors,[8,9] with a key contributor being the reduced likelihood in this population of seeking or obtaining timely medical interventions.[10] Men in the U.S. generally make fewer health visits, are less likely to seek help for health problems, and obtain fewer preventive health screenings than women.[11–14] Yet NHB men attend fewer annual health visits, have poorer BP control, and obtain early-stage cancer screenings at lower rates than their NHW male counterparts.[4,15,16]

Having a usual source of health care (USOC) increases timely receipt of preventive screenings,[17–21] improves hypertension screening and care,[22] and fosters informed decision-making about cancer screening.[23] However, in the U.S., more men than women are uninsured[24] and lack a usual provider or source of care (USOC),[17,25–30] despite the fact that women pay higher health insurance premiums.[31] Non-Hispanic Black men are even less likely than NHW men to be insured or have a USOC.[14,18] Yet few investigations report determinants of USOC among NHB men, and those that do limit their focus to socioeconomic or health insurance-related factors.[25] The dearth of research examining a broader range of USOC determinants among NHB men is worsened by the fact that extant research concentrates on Black-White comparisons and lumps African American and Caribbean Black men into the same racial/ethnic category. Studies based on Black-White differences are limited in their capacity to identify subpopulations of NHB men who face the greatest USOC barriers or to inform the design of interventions that target culture-specific impediments to USOC. Comparing African American and Caribbean Black men helps clarify whether new health care policies directed at reducing health insurance and other socioeconomic barriers will uniformly improve USOC access for these groups. Such a comparison also allows for a more careful examination of the potential contribution made by immigrant or foreign-born status to USOC disparities among NHB men.

Although Caribbean Black men fare better than African American men across a number of mortality indicators,[32–34] they are less likely to report visiting physicians[35] and are more likely to be uninsured.[35] A recent cross-national investigation determined

that even when foreign-born individuals are insured, they are still less likely than U.S.-born individuals to have a regular physician.[36] The Personal Responsibility Work Opportunity Reconciliation Act (PRWORA), made law in 1996, created additional insurance-related USOC barriers for Caribbean Black men since it limits access to federally funded services such as Medicaid to legal immigrants who have resided in the U.S. for five or more years.[37] Length of time in the U.S. is often used as a proxy indicator of acculturation or "the process by which immigrants adopt the attitudes, values, customs, beliefs, and behaviors of a new culture."[38[p.1342]] Studies investigating factors contributing to lower mortality rates among racial/ethnic minority immigrants conclude that the so-called immigrant health advantage declines with longer time spent in the U.S.[32,39–42] Declines in immigrant health advantage are believed to be attributable partly to negative parts of acculturation, which include stress, loss of cultural identity, marginalization and isolation, and resource deprivation.[43] On the other hand, longer time spent in the U.S. is associated with increased USOC access among older, Hispanic/Latino immigrants.[44]

It is unclear whether length of time in the U.S. is associated with USOC among Caribbean Black men. Investigating the association between length of time in the U.S. and USOC among Caribbean Black men represents an initial step towards clarifying whether declines in immigrant health advantage are partially a consequence of health care system barriers. Identifying the degree to which immigrant status (nativity and acculturation), socioeconomic factors, and health insurance contribute to USOC disparities among Caribbean Black and African American men will help ensure that health care reform policies and programs are adequately tuned to distinct barriers faced by these populations. Recognizing this empirical need and the heterogeneity of these groups, our primary goals were: 1) to assess the relative contribution of immigrant status (i.e., nativity and acculturation), socioeconomic factors, and health insurance to African American and Caribbean Black men's USOC procurement; and (2) to determine whether health insurance equally facilitates USOC access among insured African American and Caribbean Black men.

Theoretical framework. We use the Aday-Andersen model[45] to frame our assessment of USOC determinants.[46] The Aday-Andersen model[45] is the most frequently employed classification of health care utilization determinants. According to original versions of this model, health care utilization is determined by predisposing (e.g., gender, race, ethnicity, and educational attainment), enabling (e.g., income, employment, marital status, and health insurance), and need factors (e.g., the presence of established health conditions and mental health status). Researchers have revised the Aday-Andersen model to incorporate contextual factors,[30,47–49] including geographic region, neighborhood-level characteristics (e.g., urbanicity and the presence of a health care clinic/center within a neighborhood), and factors that specifically affect vulnerable populations such as nativity status.[50] Usual source of health care is commonly characterized in the original and revised versions of the Aday-Andersen model as a predictor variable that enables uninhibited entry into the health care system. Building on revised versions of the Aday-Andersen model, we treat USOC as an outcome and assess the relative contribution of predisposing, enabling, and need factors hypothesized to affect health care access among U.S. and foreign-born NHB men.

Methods

Data and sampling. Data were obtained from the 2001 to 2003 National Survey of American Life (NSAL), a nationally representative face-to-face in-home survey of non-institutionalized African Americans, Caribbean Blacks, and NHWs aged 18 years and older.[51] The NSAL was designed to investigate inter- and intra-group racial/ethnic differences in psychiatric disorders and impairment, help-seeking, and health services use. Multi-stage probability methods were used to select a sample of 3,570 African Americans, 1,621 Blacks of Caribbean descent (Caribbean Blacks), and 891 NHWs from households in areas where at least 10% of the population is Black. Individuals were classified as Caribbean Black if they self-reported as Black and either 1) of West Indian or Caribbean descent, 2) from a Caribbean area or country, or 3) related to parents or grandparents who were born in a Caribbean country. The response rate for the NSAL was 70.7% for the African American sample, 77.7% for Caribbean Blacks, 67.7% for NHW's, and 72.3% in the overall sample. For the purposes of the current study, we focused on the NSAL sample of African American (N=1,217) and Caribbean Black men (N=551).

Dependent variable. Usual source of care was measured by responses to the question, "Is there one place or person you usually go to when you are sick or in need of medical advice?" (no USOC = 0; has a USOC = 1).

Independent variables. Predisposing determinants include race/ethnicity (African American, Caribbean Black), nativity status (U.S.-born vs. Foreign-born), geographic region (as defined by the Bureau of Census Department and Labor: Northeast, Midwest, South, and West), age (18–29 years, 30–44 years, 40–49 years, ≥60 years), education (high school graduate or less and some college), marital status (not married = 0, married = 1), and acculturation (number of years in the U.S. [≤5 years, 6–10 years, 11–20 years, 21 years or more]). Enabling determinants included employment status (not employed vs. currently unemployed), household income (<$20,000, $20,000–$29,999, $30,000–$49,999, $50,000–$79,999, ≤$80,000), and health insurance status (does not have = 0; has insurance = 1), and the availability of a neighborhood medical clinic (no = 0, yes = 1). Need determinants measured included the number of diagnosed health problems and mental health status (e.g., depressive symptomatology). The number of health problems were dichotomized (no health problems = 0; 1 or more health problems = 1) for the bivariate analyses and summed for our multivariate analyses. We used the 12-item version of the Center for Epidemiologic Studies Depression Scale (CES-D)[52] administered in the NSAL survey to assess mental health status. Both long and shortened CES-D versions assess the presence of acute depressive symptoms and have been widely used and validated among a variety of racial/ethnic groups.[53,54] For our bivariate models, individuals with scores below the population mean (8.15) were assigned a value of 0 and those above the population mean were assigned a value of 1. An overall CES-D score was computed (range 0–36) with higher scores indicating poorer mental health status (more depressive symptoms) which was used in the multivariate models.

Statistical analysis. Consistent with the Aday-Andersen model, we classified study characteristics into *predisposing factors* (nativity, number of years in the U.S., geographic

region, race/ethnicity, age, education, marital status), *enabling factors* (employment, income, health insurance, neighborhood medical clinic access) and *need factors* (number of diagnosed health problems, mental health status). Simple (unadjusted) models testing the univariate associations between each of the study characteristics and USOC were conducted (see Table 1). We also compared mental health status (mean CES-D scores) and the mean number of diagnosed health problems by reported USOC. Next, we fit a series of bivariate models testing the association between study characteristics and USOC stratified by race/ethnicity (Table 2). This series of models included covariates for one population characteristic, race/ethnicity (African American vs. Caribbean Black), and the interaction between race/ethnicity and the population characteristic. The proportion having a USOC was computed from each of these regressions along with a test of racial/ethnic differences. The proportion for physical health (e.g., the number of diagnosed health problems) was predicted from the fitted model for a value of 0 and 1 or more. For mental health status (e.g., CES-D scores), the proportion was predicted from the fitted model for a value of 0 and for the mean value for the sample.

We then fit separate logistic regression models (Table 3) for predisposing, enabling, and need factors to predict the odds of having a USOC. A final model was then fit entering all factors simultaneously. We explored all possible two-way interactions between race/ethnicity, nativity, acculturation, and our enabling and need factors. Continuous variables were mean centered. Consistent with well-established procedures,[55] we calculated odds ratios and 95% confidence intervals (CIs) for our interactions and main effects. In the tables provided, the number of respondents (n) represents the unweighted survey sample size, whereas the reported proportions have been weighted to produce estimates for the entire U.S. population. All analyses were conducted using the SVY commands of Stata 10[56] with sample weights to adjust for sample selection, population size, and design effects. Statistical results were considered significant at the p<.05 level. This study was approved by the University of North Carolina Institutional Review Board.

Results

Demographic and lifestyle characteristics. Table 1 displays sociodemographic and lifestyle characteristics of the study participants and their association with reported USOC. Most participants were African American, U.S.-born, reported their education as high school or less, and had lived in the U.S. for 21 years or more.* Age was

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*The sample we are analyzing is 68.41% (N=1,217) African American men and 31.59% (N=562) Caribbean Black men. Because of unequal probability of selection of participants the race/ethnicity distribution of our sample differs from the distribution of the general population. To correct for this, we adjust our estimates by using sampling weights and allows us to estimate the race distribution in the general population that we would have if our sample was selected as a simple random sample (SRS). The weighted estimates of 93% African American and 7% Caribbean Black men seen on Table 1 refer to the race distribution of the general population of African American and Caribbean Black men, not the distribution of our sample. We have used the sampling weights to compute all estimates in our paper so that the results are relevant to the general population of African American and Caribbean Black men rather than be limited to the sample population.

equally distributed across the sample (M = 42 years). The sample had an equal number of married and unmarried participants. More men in the sample were currently employed than unemployed. Household incomes were fairly equally distributed with the fewest participants reporting incomes of $80,000 or more (11%). Most men in the sample had health insurance, neighborhood medical clinic access, and resided in the Southern region of the U.S.

Table 1.

SOCIODEMOGRAPHIC AND LIFESTYLE CHARACTERISTICS OF AFRICAN AMERICAN AND CARIBBEAN BLACK MEN FROM THE NATIONAL SURVEY OF AMERICAN LIFE, 2001–2003 (N=1,833)

Population Characteristics	N (proportion)[1]	N (proportion)[1] responding "Yes" to have person or place for medical help	p-value for design-based F test
Total	1,833 (1.00)	1,392 (0.80)	
Predisposing Determinants			
Nativity			
Foreign-Born	426 (0.07)	323 (0.80)	.89
U.S.-Born	1,369 (0.93)	1,043 (0.80)	
Race/Ethnicity			
African American	1,217 (0.93)	976 (0.81)	.33
Caribbean Black	562 (0.07)	416 (0.76)	
Age in years			
18–29	439 (0.25)	285 (0.71)	<.001
30–39	401 (0.22)	300 (0.78)	
40–49	415 (0.24)	313 (0.82)	
50 & over	578 (0.29)	494 (0.89)	
Education			
High School or less	1,108 (0.62)	812 (0.77)	.01
Some College	725 (0.38)	580 (0.85)	
Marital Status			
Not married	986 (0.50)	715 (0.76)	<.001
Married	844 (0.50)	677 (0.85)	
Number of years in the United States			
≤5 years	120 (0.02)	90 (0.77)	.27
6 to 10 years	85 (0.01)	64 (0.72)	
11–20 years	209 (0.09)	156 (0.74)	
21 years and over	1,330 (0.88)	1,024 (0.81)	

Table 1. *(continued)*

Population Characteristics	N (proportion)[1]	N (proportion)[1] responding "Yes" to have person or place for medical help	p-value for design-based F test
Enabling Determinants			
Employment			
Not employed	510 (0.28)	411 (0.84)	.03
Currently employed	1,315 (0.72)	980 (0.79)	
Household Income ($)			
<20,000	502 (0.26)	376 (0.78)	.0013
20,000 to 29,999	316 (0.17)	208 (0.71)	
30,000 to 49,999	505 (0.27)	373 (0.79)	
50,000 to 79,999	323 (0.19)	274 (0.89)	
≥80,000	187 (0.11)	161 (0.90)	
Health Insurance			
No insurance	355 (0.19)	214 (0.66)	<.001
Has insurance	1,414 (0.81)	1,178 (0.84)	
Neighborhood Medical Clinic			
No	527 (0.31)	384 (0.77)	.03
Yes	1,283 (0.69)	994 (0.82)	
Region			
Northeast	510 (0.18)	397 (0.82)	.77
Midwest	207 (0.17)	153 (0.82)	
South	1,011 (0.55)	757 (0.79)	
West	105 (0.10)	85 (0.82)	
Need Determinants	**Mean ± Std Err (range)**	**Mean ± Std Err (range)**	**p-value**
Physical Health Status (Number of diagnosed health problems)	1.03 ± 0.04 (0–12)	1.19 ± 0.04 (0–12)	<.001
Mental Health Status (CES-D Score)	8.15 ± 0.19 (0–33)	7.95 ± 0.20 (0–33)	.002

[1]Sample sizes are unweighted. Proportions are weighted.
CES-D=Center for Epidemiologic Studies Depression Scale

Determinants of USOC. *Bivariate results*. The majority of the sample reported having a USOC (Table 1) and the proportions of African American and Caribbean Black men with a USOC were similar. Overall, more men who were older, married, unemployed, had some college education, and earned higher household incomes indicated having a USOC. A higher proportion of men with health insurance, a neighborhood medical clinic, and poorer physical health status (i.e., more diagnosed health problems) reported

Table 2.

PROPORTION OF AFRICAN AMERICAN AND CARIBBEAN BLACK MEN HAVING USUAL SOURCE OF CARE IN THE NATIONAL SURVEY OF AMERICAN LIFE, 2001–2003 (N=1,833)

Population Characteristics	African American Proportion (N)	Caribbean Black Proportion (N)	p-value for Ethnic Differences**
Total	0.81 (1,217)	0.76 (551)	.36
Predisposing Determinants			
Nativity			
Foreign-Born	0.87 (20)	0.76 (400)	.32
U.S.-Born	0.80 (1,172)	0.81 (143)	.97
p-value for F-test*	.48	0.55	
Age in years			
18-29	0.72 (271)	0.59 (161)	.24
30-39	0.78 (262)	0.75 (127)	.73
40-49	0.82 (280)	0.81 (116)	.89
50 & over	0.89 (404)	0.92 (147)	.30
p-value for F-test*	<.001	<0.001	
Education			
High School or less	0.77 (439)	0.75 (265)	.55
Some College	0.86 (778)	0.78 (286)	.34
p-value for F-test*	.002	0.71	
Marital Status			
Not married	0.76 (681)	0.69 (262)	.26
Married	0.85 (536)	0.81 (289)	.42
p-value for F-test*	.001	0.02	
Number of years in the United States			
≤10 years	0.80 (13)	0.72 (191)	.61
11–20 years	0.74 (87)	0.78 (118)	.55
21 years and over[b]	0.81 (1,091)	0.79 (185)	.78
p-value for F test*	.47	0.43	
Enabling Determinants			
Employment			
Not employed	0.85 (365)	0.67 (126)	.11
Currently employed	0.79 (850)	0.79 (425)	.93
p-value for F-test*	.02	0.27	

Table 2. *(continued)*

Population Characteristics	African American Proportion (N)	Caribbean Black Proportion (N)	p-value for Ethnic Differences**
Household Income ($)			
<20,000	0.78 (378)	0.74 (109)	.76
20,000 to 29,999	0.70 (204)	0.77 (92)	.40
30,000 to 49,999	0.81 (335)	0.57 (154)	.04
50,000 to 79,999	0.89 (198)	0.88 (116)	.80
≥80,000	0.90 (102)	0.93 (80)	.49
p-value for F-test*	<.001	<0.001	
Health Insurance			
No insurance	0.65 (229)	0.66 (125)	.93
Has insurance	0.84 (988)	0.79 (426)	.21
p-value for F-test*	<.001	0.15	
Neighborhood Medical Clinic			
No	0.77 (393)	0.76 (107)	.89
Yes	0.83 (811)	0.76 (434)	.18
p-value for F-test*	.03	0.90	
Region			
Northeast	0.83 (148)	0.79 (352)	.53
Midwest	0.82 (184)	0.77 (4)	.85
South	0.79 (789)	0.65(187)	.06
West	0.81 (96)	0.94 (8)	.04
p-value for F-test*	.88	0.001	
Need Determinants			
Physical Health Status (number of diagnosed health problems)			
0 health problems	0.75 (563)	0.62 (327)	.002
1 or more health problem[a]	0.86 (654)	0.90 (224)	.51
p-value for F-test*	<.001	<0.001	
Sample Size (N)	(1,217)	(551)	
Mental Health Status (CES-D Score)			
CES-D Score = 0.00	0.83 (721)	0.82 (353)	.67
CES-D Score = 8.15[a]	0.77 (490)	0.64 (195)	.34
p-value for F-test*	.01	0.17	
Sample Size (N)	(1,211)	(548)	

*The p-value is from a design-based F-test to compare the proportions of the population characteristic within each ethnic group.
**The p-value is from a design-based F-test to compare the proportion across ethnic groups at each level of the population characteristic.
[a]Mean value of the population characteristic for African American and Caribbean Black Men.
[b]Categories for the ≤5 years and 6 to 10 year groups had sample size too small for statistical testing. These categories were combined for the analysis in the table
CES-D = Center for Epidemiologic Studies Depression Scale

Table 3.

LOGISTIC REGRESSION MODEL OF USUAL SOURCE OF CARE DETERMINANTS AMONG AFRICAN AMERICAN AND CARIBBEAN BLACK MEN IN THE NATIONAL SURVEY OF AMERICAN LIFE, 2001–2003 (N=1,652)

Variable	Model 1: Odds Ratio (95% CI)	Model 2: Odds Ratio (95% CI)	Model 3: Odds Ratio (95% CI)	Model 4: Odds Ratio (95% CI)
Predisposing Factors				
Country of Birth: U.S.-born (vs. Foreign-born)	2.55 (0.62,10.5)			1.94 (0.48,7.76)
Race/Ethnicity: African American (vs. Caribbean Black)	0.88 (0.36,2.15)			0.99 (0.37,2.68)
Age (years):				
30–39 (vs. 18–29)	1.40 (0.85,2.31)			1.15 (0.68,1.95)
40–49 (vs. 18–29)	1.74 (1.21,2.51)*			1.47 (0.97,2.23)
50 & over (vs. 18–29)	3.45 (2.13,5.61)*			1.83 (1.13,2.97)*
Education: High School or less (vs. Some College)	0.55 (0.38,0.81)*			0.72 (0.48,1.06)
Marital status: Married (vs. Not married)	1.57 (1.08,2.29)*			1.22 (0.81,1.84)
Number of years in the United States (years):				
≤5 (vs. 21 and older)	1.64 (0.44,6.19)			1.56 (0.40,6.10)
6 to 10 (vs. 21 and older)	1.25 (0.35,4.43)			1.16 (0.32,4.22)
11 to 20 (vs. 21 and older)	1.57 (0.85,2.88)			1.41 (0.74, 2.67)
Enabling Factors				
Employment: Employed (vs. not employed)		0.49 (0.31,0.78)*		0.63 (0.39,1.03)

Table 3. (*continued*)

Variable	Model 1: Odds Ratio (95% CI)	Model 2: Odds Ratio (95% CI)	Model 3: Odds Ratio (95% CI)	Model 4: Odds Ratio (95% CI)
Household Income ($):				
<20,000 (vs. ≥80,000)		0.38 (0.15,0.95)*		0.51 (0.23,1.16)
20,000 to <30,000 (vs. ≥80,000)		0.29 (0.13,0.61)*		0.38 (0.19,0.78)*
30,000 to <50,000 (vs. ≥80,000)		0.49 (0.24,1.00)		0.66 (0.32,1.32)
50,000 to <80,000 (vs. ≥80,000)		0.88 (0.34,2.28)		1.06 (0.44,2.56)
Insurance: Has Medical Insurance (vs. no insurance)		2.51 (1.72,3.67)*		1.90 (1.28,2.83)*
Has Neighborhood Medical Clinic (vs. does not have)		1.29 (0.95,1.74)		1.40 (1.04,1.90)*
Region:				
Midwest (vs. Northeast)		1.24 (0.60,2.55)		1.20 (0.55,2.61)
South (vs. Northeast)		1.15 (0.63,2.09)		1.08 (0.53,2.17)
West (vs. Northeast)		1.26 (0.58,2.74)		1.17 (0.48,2.85)
Need Factors				
Physical Health Status (Number of diagnosed health problems)			1.53 (1.29,1.82)*	1.35 (1.10,1.66)*
Mental Health Status(CES-D score)			0.94 (0.91,0.97)*	0.96 (0.92,0.99)*

*Significant at the p≤.05 level.
CES-D = Center for Epidemiologic Studies Depression Scale
CI = Confidence Interval

having a USOC. More men with better mental health status (i.e., lower mean CES-D scores) reported having a USOC. Associations between USOC and nativity status or length of time in the U.S. were non-significant.

Our stratified analyses revealed that education, geographic region, income, and physical health status were not significantly or uniformly associated with USOC among both groups (Table 2). Higher education, unemployment, health insurance, neighborhood medical clinic access, and better mental health status were only significantly associated with USOC among African American men. Regional differences emerged only for Caribbean Black men, who had a higher proportion of individuals reporting a USOC in the West than in the South, Midwest, and Northeast. A higher proportion of Caribbean Black men living in the West had a USOC than African American men residing in that region. For participants in the $30,000–$49,999 income and better physical health categories, fewer Caribbean Black men than African American men had a USOC.

Multivariate results (<u>main effects</u>). Race/ethnicity, nativity status, or years in the U.S. were not statistically significant determinants of USOC (Table 3). However, in Model 1, where predisposing determinants were entered, men who were 50 years and older (OR=3.45, 95% CI: 2.13, 5.61) and those age 40–49 (OR=1.74, 95% CI: 1.21, 2.51) were more likely to report having a source of care than men who were 18 to 29 years old. Similarly, married men were more likely than unmarried men to report having a USOC (OR=1.57; 95% CI: 1.08, 2.29). Men who reported their education as high school or less were less likely than men with some college to have a USOC (OR=0.55; 95% CI: 0.38, 0.81). In Model 2, unemployed men were less likely to have a USOC than employed men (OR=0.49, 95% CI: 0.31, 0.78). Men with incomes of less than $20,000 (OR=0.38; 95% CI: 0.15, 0.95), and whose incomes were between $20,000 and $30,000 (OR=0.29; 95% CI: 0.13, 0.61), were less likely to have a USOC than men in the highest income category. Men with health insurance were more likely than uninsured men to have a USOC (OR=2.51; 95% CI: 1.72, 3.67). Neither geographic region nor neighborhood medical clinic availability was associated with USOC. When need determinants were explored (Model 3), men with more diagnosed problems were more likely to report a USOC (OR=1.53; 95% CI: 1.29, 1.82). In contrast, men with poorer mental health status (higher CES-D scores) were less likely to report having a USOC (OR=0.94; 95% CI: 0.91, 0.97). When the determinants were entered simultaneously (Model 4), the odds of reporting a USOC were higher for men aged 50 and older (OR=1.83; 95% CI: 1.13, 2.97), who were insured (OR=1.90; 95% CI: 1.28, 2.83), had a medical clinic in their neighborhood (OR=1.40; 95% CI: 1.04, 1.90), and had more diagnosed health problems (OR=1.35; 95% CI: 1.10, 1.66). Men with poor mental health status (higher CES-D scores) were also less likely to report having a USOC (OR=0.96; 95% CI: 0.92, 0.99).

Multivariate results (<u>interaction effects</u>). Although a main effect for race/ethnicity was not observed, we did find a significant interaction between this variable and health insurance status (p=.03) and the number of diagnosed health conditions (p=.03). In the absence of health insurance, Caribbean Black men had nearly three times greater odds of having a USOC than African American men had (OR=2.70, 95% CI: 0.78, 9.37). However, in the presence of health insurance, Caribbean Black men had slightly

lower odds of having a USOC than African American men (OR=0.92, 95% CI: 0.36, 2.38). We also found that in the absence of diagnosed health problems (lower level of health need), Caribbean Black men had lower odds of having a USOC than African American men (OR=0.44, 95% CI: 0.19, 1.03). However, the odds of having a USOC increased much faster for Caribbean Black men than for African American men, with Caribbean Black men having three health problems being four times more likely to have a USOC (OR=4.02, 95% CI: 0.46, 30.91). None of the other interactions were significant.

Discussion

In light of NHB men's disproportionate mortality from medically amenable conditions, this investigation examined determinants of USOC among a nationally representative sample of African American and Caribbean Black men. Although previous studies have reported determinants of USOC, only one[35] explicitly disentangled differences in the sources of USOC disparities between subpopulations of NHB men. Our study utilized the most recent nationally representative sample of Blacks in the diaspora to examine a broader range of USOC determinants than has been examined in previous studies and to assess the consistency of these associations between African American and Caribbean Black men. We focused specifically on ascertaining whether health insurance uniformly increased USOC access among African American and Caribbean Black men. We demonstrated that the association between this determinant and USOC differs for African American and Caribbean Black men in unexpected and important ways. Our findings contribute to the accumulating evidence documenting the modest effects of health insurance on health care access and thus hold the potential to inform policies and programs designed to reduce health care disparities among NHB men. Specifically, our findings indicate that health reform policies directed singularly at increasing health insurance access may have less of an impact on USOC procurement for Caribbean Black men than it may for African American men.

Predisposing determinants. Eighty percent of our sample indicated having a USOC, a figure similar to that reported in another nationally representative study[29] and by the CDC.[28] Generally, we found that enabling (e.g., income, employment, marital status and health insurance) and need factors (e.g., presence of established health conditions and mental health status) were the most significant determinants of USOC among African American and Caribbean Black men. Prior studies among the general population have reached similar conclusions.[18,29] We learned that older African American and Caribbean Black men were more likely to report having a USOC. This finding likely reflects age-related differences in health insurance coverage. For example, men aged 65 and older are more likely to be covered by Medicare, which may increase the likelihood of having a USOC. Higher reports of USOC among older men might also reflect an increased concern with health monitoring produced by aging. Usual source of care may be less commonly reported by younger men because they are generally in better health and thus may see less need for routine health care. However, this perception can lead to delays in the detection of disease conditions that have a relatively early onset among Black men (e.g., prostate cancer). Encouraging younger NHB men to establish a USOC could

improve uptake of medical care later in the life-course when monitoring health status is critical. While marital status initially increased the odds of having a USOC for both groups of men, we saw its effect diminished in the presence of other socioeconomic and need-related determinants. This change in significance was not surprising since married people generally also have more income and report better physical and mental health. Nonetheless, leveraging spouses as partners in interventions to reduce Black men's health care access disparities may prove to be a viable strategy. Initially, we observed that men with higher levels of education were more likely to have a USOC. However, this relationship was not sustained when enabling and need factors were jointly considered. Our bivariate analyses also revealed that this association held only for African American men. The higher baseline levels of education attainment among the general Caribbean Black population[57] may explain our failure to detect the same association for men from this group. This finding might also mean that health care policies that solely address educational or other socioeconomic factors may have variable effects on African American and Caribbean Black men's health care access. Nativity status or length of time in the U.S. did not affect USOC, which could be attributed to the large proportion of U.S.-born and longer-term immigrant residents in the sample.

Enabling determinants. Surprisingly, being unemployed was associated with an increased likelihood of having a USOC. However, this association disappeared in our fully adjusted multivariate model and was limited to African American men in our bivariate models. We speculate that unemployed African American men factored in informal health care sources and emergency departments, which tend to be utilized more often as USOC sites among African Americans as a whole.[58] Additionally, Caribbean Black men have higher employment rates than African American men,[59] but rely more on informal employment sources and are limited by their immigrant status from participating in government-sponsored health insurance.[35] These combined factors may have led to the more expected, albeit non-significant, association between employment and USOC for this group.

Given prior evidence,[25] we were not surprised to find that higher incomes increased men's likelihood of having a USOC. We were, however, intrigued to learn that the odds of having a USOC were reduced most for men in the lower-middle income category. We offer that this group is in a *Catch-22* situation since its members often occupy positions offering limited health care benefits but have incomes that exceed eligibility limits for government-sponsored programs. Although health insurance increased the overall odds of having a USOC, our interaction results suggest that this increase occurred only among African American men. In fact, we found that insured Caribbean Black men were less likely to have a USOC, which implies that unmeasured personal characteristics play a bigger role for this group when insurance barriers are minimized. Previous research indicates that many adults without a USOC prefer not to have one.[29] Since the NSAL did not contain questions about health care attitudes or USOC preferences, we were unable to assess the potential effects of these factors. Future studies should consider the role played by these determinants in USOC disparities among these groups.

Having more proximal medical clinic access increased the odds of having a USOC in our sample. Our investigation reinforces the need to focus attention on reducing structural health care access barriers among Black men, which might mitigate the

impact of attitudinal factors (e.g., medical mistrust) on their health services use. We observed an initial association between geographic region and USOC suggesting access is better in the West for Caribbean Black men and lower for this same group in the South. Since our western region sample of Caribbean Black men was relatively small, it is difficult to draw any meaningful conclusions about this finding. However, we point to other research documenting less USOC among adults in the South[29] to support our finding. When we examined regional (geographic) differences in USOC access in the overall sample, we found no differences.

Need determinants. Possibly because poor health leads them to seek regular medical assistance, men with more health conditions were more likely to have a USOC. However, compared with African American men, Caribbean Black men seem to be motivated more by pressing health concerns to secure a USOC. This response is consistent with more traditional masculine help-seeking[9] and implies the need to emphasize the development of targeted primary prevention awareness among Caribbean Black men. In contrast with previous findings[27] and with what was found for general health, men who reported more depressive symptoms were less likely to have a USOC. Using psychiatric diagnosis and other indicators of mental illness and mental health, future prospective studies can determine whether poor mental health interferes with securing a USOC, or whether having a USOC reflects better coping and, as a result, better mental health, or whether having a USOC promotes diagnosis and treatment of mental illness. Even so, our finding highlights the importance of including mental health promotion as a core component of efforts to improve Black men's access to medical care.

Limitations and strengths. Our study has some limitations. First, the question we used to assess USOC asked individuals if they had a regular place or person for health care. This strategy limited our ability to disaggregate effects for determinants associated with having a USOC from those associated with having a usual person or provider. Disentangling these effects may be important since others have found that having a regular doctor is more important in the receipt of preventative health care services than having a regular site.[60] Since we did not account for health insurance type, we are unable to determine if the differences we observed between African American and Caribbean Black men are related to this factor. Indeed, immigrants are less likely to be have employee-sponsored insurance[61] and have limited access to publicly funded programs because of the PRWORA.[37] Future studies should determine if the associations we observed persist when controlling for health insurance type. Similarly to previous studies, we also used length of time in the U.S. as a proxy for acculturation. Using this static measure may have limited our ability to fully assess the role played by other factors linked to the acculturative processes (e.g., stress, isolation, resource deprivation). Furthermore, we are limited by the use of self-reported, cross-sectional data which may have introduced bias and minimized our ability to make causal inferences.

Nonetheless, our study has notable strengths. It is one of few nationally representative studies addressing determinants of USOC among African American and Caribbean Black men. The NSAL is the most recent national survey on the Black Diaspora. Thus, we are able to offer more reliable estimates of USOC determinants for African American and Caribbean Black men. We also extend previous research on USOC among Black men by examining the role played by other non-economic factors, which

will be important to address in future policy and health care interventions designed to eliminate access disparities among this group.

Identifying USOC determinants is an important step towards producing viable health care reform strategies for vulnerable populations of men. Our study contributes to these efforts by documenting the relative effects of predisposing, enabling, and need factors on African American and Caribbean Black men's USOC procurement.

Acknowledgments

Notes

1. Wong MD, Chung AK, Boscardin WJ, et al. The contribution of specific causes of death to sex differences in mortality. Public Health Rep. 2006 Nov–Dec;121(6):746–54.
2. Singh-Manoux A, Gueguen A, Ferrie J, et al. Gender differences in the association between morbidity and mortality among middle-aged men and women. Am J Public Health. 2008 Dec;98(12):2251–7. Epub 2008 Jan 30.
3. Lloyd-Jones D, Adams RJ, Brown TM, et al. Executive summary: heart disease and stroke statistics—2010 update: a report from the American Heart Association. Circulation. 2010 Feb 23;121(7):948–54.
4. American Cancer Society. Cancer facts and figures for African Americans 2009–2010. Atlanta, GA: American Cancer Society, 2009.
5. American Cancer Society. Colorectal cancer facts and figures 2008–2010. Atlanta, GA: American Cancer Society, 2008.
6. U.S. Cancer Statistics Working Group. United States cancer statistics: 1999–2006 incidence and mortality web-based report. Washington, DC: U.S. Cancer Statistics Working Group, 2010.
7. Li C, Ekwueme DU. Years of potential life lost caused by prostate cancer deaths in the United States—projection from 2004 through 2050. Cancer Epidemiol. 2010 Aug;34(4):368–72. Epub 2010 May 26.
8. Williams DR. The health of men: structured inequalities and opportunities. Am J Public Health. 2003 May;93(5):724–31.
9. Courtenay WH. Constructions of masculinity and their influence on men's well-being: a theory of gender and health. Soc Sci Med. 2000 May;50(10):1385–401.
10. Elo IT, Drevenstedt GL. Black-White differentials in cause-specific mortality in the United States during the 1980s: the role of medical care and health behaviors. Philadelphia, PA: Population Studies Center (Working Paper series), 2006.
11. Green CA, Pope CR. Gender, psychosocial factors and the use of medical services: a longitudinal analysis. Soc Sci Med. 1999 May;48(10):1363–72.
12. Viera AJ, Thorpe JM, Garrett JM. Effects of sex, age, and visits on receipt of preventive health care services: a secondary analysis of national data. BMC Health Serv Res. 2006 Feb;6(1):15.

13. Neighbors HW, Howard CS. Sex differences in professional help seeking among adult Black Americans. Am J Community Psychol. 1987 Aug;15(4):403–17.

14. Cherry DK, Woodwell DA, Rechtsteiner EA. National Ambulatory Medical Care Survey: 2005 summary. Atlanta, GA: Centers for Disease Control and Prevention, 2007.

15. Adams PF, Heyman KM, Vickerie JL. Summary health statistics for the U.S. population: National Health Interview Survey, 2008. Vtal Health Stat 10. 2009 Dec(243):1–104.

16. Hertz RP, Unger AN, Cornell JA, et al. Racial disparities in hypertension prevalence, awareness, and management. Arch Intern Med. 2005 Oct 10;165(18):2098–104.

17. DeVoe JE, Fryer GE, Phillips R, et al. Receipt of preventive care among adults: insurance status and usual source of care. Am J Public Health. 2003 May;93(5):786–91.

18. Blewett LA, Johnson PJ, Lee B, et al. When a usual source of care and usual provider matter: adult prevention and screening services. J Gen Intern Med. 2008 Sep; 23(9):1354–60. Epub 2008 May 28.

19. Corbie-Smith G, Flagg EW, Doyle JP, et al. Influence of usual source of care on differences by race/ethnicity in receipt of preventive services. J Gen Intern Med. 2002 Jun;17(6):458–64.

20. Hammond WP, Matthews D, Corbie-Smith G. Psychosocial factors associated with routine health examination scheduling and receipt among African American men. J Natl Med Assoc. 2010 Apr;102(4):276–89.

21. Hammond WP, Matthews D, Mohottige D, et al. Masculinity, medical mistrust, and preventive health services delays among community-dwelling African-American men. J Gen Intern Med. 2010 Dec; 25(12):1300–08.

22. Moy E, Bartman BA, Weir MR. Access to hypertensive care. Effects of income, insurance, and source of care. Arch Intern Med. 1995 Jul 24;155(14):1497–502.

23. Smith RA, Cokkinides V, Brawley OW. Cancer screening in the United States, 2009: a review of current American Cancer Society guidelines and issues in cancer screening. CA Cancer J Clin. 2009 Jan–Feb;59(1):27–41.

24. United States Commonweatlth Fund. American men and the healthcare system: commonwealth fund men's and women's health survey findings. Washington, DC: United States Commonweatlth Fund, 2000.

25. Merzel C. Gender differences in health care access indicators in an urban, low-income community. Am J Public Health. 2000 Jun;90(6):909–16.

26. Franks P, Gold MR, Clancy CM. Use of care and subsequent mortality: the importance of gender. Health Serv Res. 1996 Aug;31(3):347–63.

27. Smith MA, Bartell JM. Changes in usual source of care and perceptions of health care access, quality, and use. Med Care. 2004 Oct;42(10):975–84.

28. Pleis JR, Lethbridge-Çejku M. Summary health statistics for U.S. adults: National Health Interview Survey, 2006. Vital Health Stat 10. 2007 Dec(235):1–153.

29. Viera AJ, Pathman DE, Garrett JM. Adults' lack of a usual source of care: a matter of preference? Ann Fam Med. 2006 Jul–Aug;4(4):359–65.

30. Litaker D, Koroukian SM, Love TE. Context and health care access: looking beyond the individual. Med Care. 2005 Jun;43(6):531–40.

31. Codispoti L, Courtot B, Swedish J. Nowhere to turn: how the individual health insurance market fails women. Washington, DC: National Women's Law Center, 2008.

32. Singh GK, Siahpush M. All-cause and cause-specific mortality of immigrants and native born in the United States. Am J Public Health. 2001 Mar;91(3):392–9.

33. Fang J, Madhavan S, Alderman MH. The association between birthplace and mortality

from cardiovascular causes among Black and White residents of New York City. N Engl J Med. 1996 Nov 21;335(21):1545–51.

34. Fang J, Madhavan S, Alderman MH. Nativity, race, and mortality: favorable impact of birth outside the United States on mortality in New York City. Hum Biol. 1997 Oct;69(5):689–701.

35. Lucas JW, Barr-Anderson DJ, Kington RS. Health status, health insurance, and health care utilization patterns of immigrant Black men. Am J Public Health. 2003 Oct; 93(10):1740–7.

36. Siddiqi A, Zuberi D, Nguyen QC. The role of health insurance in explaining immigrant versus non-immigrant disparities in access to health care: comparing the United States to Canada. Soc Sci Med. 2009 Nov;69(10):1452–9.

37. Okie S. Immigrants and health care—at the intersection of two broken systems. N Engl J Med. 2007 Aug 9;357(6):525–9.

38. Abraido-Lanza AF, Armbrister AN, Florez KR, et al. Toward a theory-driven model of acculturation in public health research. Am J Public Health. 2006 Aug;96(8): 1342–6.

39. Lara M, Gamboa C, Kahramanian MI, et al. Acculturation and Latino health in the United States: a review of the literature and its sociopolitical context. Annu Rev Public Health. 2005;26:367–97.

40. Read JG, Emerson MO, Tarlov A. Implications of Black immigrant health for U.S. racial disparities in health. J Immigr Health. 2005 Jul;7(3):205–12.

41. Thamer M, Richard C, Casebeer AW, et al. Health insurance coverage among foreign-born U.S. residents: the impact of race, ethnicity, and length of residence. Am J Public Health. 1997 Jan;87(1):96–102.

42. Williams DR. The health of U.S. racial and ethnic populations. J Gerontol B Psychol Sci Soc Sci. 2005 Oct;60 Spec No 2:53–62.

43. Williams DR, Jackson PB. Social sources of racial disparities in health. Health Aff (Millwood). 2005 Mar–Apr;24(2):325–34.

44. Choi S. Longitudinal changes in access to health care by immigrant status among older adults: the importance of health insurance as a mediator. Gerontologist. 2010 Aug 6. (Epub ahead of print.)

45. Aday LA, Andersen R. A framework for the study of access to medical care. Health Serv Res. 1974 Fall;9(3):208–20.

46. Lambrew JM, Defriese GH, Carey TS, et al. The effects of having a regular doctor on access to primary care. Med Care. 1996 Feb;34(2):138–51.

47. Kirby JB, Kaneda T. Neighborhood socioeconomic disadvantage and access to health care. J Health Soc Behav. 2005 Mar;46(1):15–31.

48. Phillips KA, Mayer ML, Aday LA. Barriers to care among racial/ethnic groups under managed care. Health Aff (Millwood). 2000 Jul–Aug;19(4):65–75.

49. Prentice JC. Neighborhood effects on primary care access in Los Angeles. Soc Sci Med. 2006 Mar;62(5):1291–303. Epub 2005 Aug 29.

50. Gelberg L, Andersen RM, Leake BD. The Behavioral Model for Vulnerable Populations: application to medical care use and outcomes for homeless people. Health Serv Res. 2000 Feb;34(6):1273–302.

51. Jackson JS, Torres M, Caldwell CH, et al. The National Survey of American Life: a study of racial, ethnic and cultural influences on mental disorders and mental health. Int J Methods Psychiatr Res. 2004;13(4):196–207.

52. Radloff LS. The CES-D Scale: a self-report depression scale for research in the general population. Appl Psychol Meas. 1977 Jun;1(3):385–401.

53. Roberts RE. Reliability of the CES-D Scale in different ethnic contexts. Psychiatry Res. 1980 May;2(2):125–34.

54. Kohout FJ, Berkman LF, Evans DA, et al. Two shorter forms of the CES-D (Center for Epidemiological Studies Depression) depression symptoms index. J Aging Health. 1993 May;5(2):179–93.

55. Jaccard J. Interaction effects in logistic regression. Thousand Oaks, CA: Sage Publications, 2001.

56. StataCorp. Stata Statistical Software (Release 10). College Station, TX: StataCorp LP, 2007.

57. Logan JR, Dean G. Black diversity in metropolitan America. New York, NY: Lewis Mumford Center for Comparative Urban and Regional Research, 2003.

58. Gaskin DJ, Arbelaez JJ, Brown JR, et al. Examining racial and ethnic disparities in site of usual source of care. J Natl Med Assoc. 2007 Jan;99(1):22–30.

59. Dodoo FN. Earnings differences among Blacks in America. Social Science Research. 1991 Jun;20(2):93–108.

60. Xu KT. Usual source of care in preventive service use: a regular doctor versus a regular site. Health Serv Res. 2002 Dec;37(6):1509–29.

61. Buchmueller TC, Lo Sasso AT, Lurie I, et al. Immigrants and employer-sponsored health insurance. Health Serv Res. 2007 Feb;42(1 Pt 1):286–310.