# Self-Reported Heart Disease among Arab and Chaldean American Women Residing in Southeast Michigan

**Objectives:** This study estimates the prevalence of heart disease among Arab and Chaldean American women and examines the association between Arab and Chaldean ethnicity and heart disease among a sample of women.

Methods: This was a cross-sectional study of a convenience sample of 2084 Arab, Chaldean, and African American women aged ≥18 years who completed a survey that was distributed at churches, mosques, and small businesses in southeast Michigans. Logistic regression was used to estimate odds ratios and 95% confidence intervals for the association between ethnicity and self-reported heart disease before and after adjusting for demographic, socioeconomic status, health care, chronic conditions, and health behavior variables.

**Participants:** A sample of 2084 Arab, Chaldean, and African American women 18 years of age and older.

**Results:** The overall prevalence of heart disease was 5.1%. Estimates were higher for Arabs (7.1%), lower for Chaldeans (6.6%), and lowest among African Americans (1.8%). In the unadjusted model, Chaldeans and Arabs were four times more likely to have heart disease than were African Americans. However, in the fully adjusted model, the association between Chaldean or Arab ethnicity and heart disease was no longer statistically significant.

**Conclusions:** Arab or Chaldean ethnicity was not significantly associated with self-reported heart disease among women, which suggests that other factors account for this relationship. Future studies should collect more detailed socioeconomic status, acculturation, and health behavior information. (*Ethn Dis.* 2008;18:19–25)

Key Words: Arab, Chaldean, Heart Disease

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### INTRODUCTION

Heart disease disproportionately affects minority women.<sup>1</sup> Although non-Hispanic Whites are usually used as the reference category for health comparisons in the United States, non-Hispanic whites are a heterogeneous group.<sup>2</sup> According to the Office of Management and Budget, non-Hispanic Whites include persons having origins in Europe, North America, or the Middle East.<sup>2</sup> Therefore, using Whites as the reference group may miss variations in the health status of other groups in the White category, such as individuals from the Middle East.

Because of the homogeneity assumed among Whites, little attention has been paid to the health status of subgroups within the white category. For example, Arab Americans, a subgroup within the white category, may exhibit better or worse health outcomes compared to non-Hispanic whites as a whole.<sup>3–7</sup> The prevalence of self-reported heart disease for Arab Americans in two studies was  $3.7\%^7$  and  $7.6\%.^6$ Further, estimates varied among Arab American subgroups and by sex: the prevalence of self-reported heart disease was 2.2% for individuals who identified as Syrian/Lebanese, 4.6% for Jordanian/ Palestinian, 4.7% for Yemeni, and 4.9% for Iraqi/Chaldean. In addition, 2.6% of Arab and Chaldean women reported having heart disease, compared to 3.0% of males.<sup>7</sup>

Arab Americans, especially women, should be included in the current discourse on race/ethnicity and health for a number of reasons. First, according to some studies, Arab Americans have worse health outcomes than do non-Hispanic Whites.<sup>3–7</sup> Second, the Arab American population has been increasArab Americans, especially women, should be included in the current discourse on race/ ethnicity and health for a number of reasons.

ing during the past two decades (660,000 in 1980 to 1,189,731 in 2000 - an 80% increase).<sup>8,9</sup> Michigan is home to the highest concentration of Arab and Chaldean Americans in any state.<sup>8,9</sup> According to 2000 US Census data, ≈100,000 persons who identified as Chaldean or Arab live in Macomb, Oakland, and Wayne Counties in Michigan.<sup>10</sup> Third, Arab Americans are not a homogeneous group.<sup>8,9</sup> Finally, Arab Americans, especially women, have largely been ignored in health research. Therefore, using data from the 2005 Health Assessment Survey (HAS), this study has two objectives: 1) to estimate the prevalence of heart disease among Arab and Chaldean American women in southeast Michigan and 2) to examine the association between Arab and Chaldean ethnicity and heart disease among a sample of women.

## **METHODS**

### Setting and Subjects

The objective of the HAS was to assess the prevalence of and risk factors for various chronic conditions among individuals attending the Arab American and Chaldean Council (ACC) so that appropriate prevention and intervention programs for the Arab and

	African American (n=729)	Chaldean ( <i>n</i> =543)	Arab ( <i>n</i> =812)	Total ( <i>n</i> =2084)
	Demographics			
Age, years (mean±SD)*	29.9±8.1	42.7±16.2	37.4±12.5	36.1±13.3
Age categories*				
18–24	208 (28.5)	54 (9.9)	107 (13.2)	369 (17.7)
25–39	453 (62.1)	235 (43.3)	435 (53.6)	1123 (53.9)
40–54	56 (7.7)	117 (21.2)	174 (21.4)	347 (16.7)
≥55	12 (1.6)	137 (25.2)	96 (11.8)	245 (11.8)
Marital status*				
Married	81 (11.1)	389 (71.6)	602 (74.1)	1072 (51.9)
Single	582 (79.8)	78 (14.4)	64 (7.9)	724 (35.1)
Widowed/Divorce/Separated	60 (8.2)	72 (13.3)	137 (16.9)	269 (13.0)
language*				
Speak English	722 (99.0)	69 (12 7)	95 (11 7)	886 (42 5)
Read/write Arabic	1 (1)	216 (39.8)	523 (64.4)	740 (35 5)
Speak Arabic and English	0	240 (44 2)	154 (19.0)	394 (18.9)
Other language	6 (.8)	16 (2.9)	4 (.5)	26 (1.2)
	Socioeconomic Sta	tuc		
The second second	Socioeconomic sta	ltus		
Education*	F2 (7 2)		107 (50.4)	706 (22.0)
Less than high school	53 (7.3)	246 (45.3)	407 (50.1)	/06 (33.9)
Fligh school or more	660 (90.5)	287 (52.9)	390 (48.0)	1337 (64.2)
Employment status*				
Employed	292 (40.1)	129 (23.8)	97 (11.9)	518 (24.9)
Unemployed	398 (54.6)	353 (65.0)	617 (76.0)	1368 (65.6)
Disabled	32 (4.4)	33 (6.1)	74 (9.1)	139 (6.7)
Retired	4 (0.5)	23 (4.2)	14 (1.7)	41 (2.0)
Income*				
<\$10,000	297 (40.7)	122 (22.5	303 (37.3)	722 (34.6)
≥\$10,000 or more	247 (33.9)	274 (50.5)	305 (37.6)	826 (39.6)
	Health Care			
Health insurance*				
Yes	591 (81.1)	377 (69.4)	552 (68.0)	1520 (72.9)
No	118 (16.2)	152 (28.0)	232 (28.6)	502 (24.1)
Physician visit**		- ( ,	- (,	
In the last six months				1207 ((2.2))
In the last six months	467 (64.1)	353 (65.0)	4// (58./)	1297 (62.2)
In the last year	167 (22.9) 52 (7.2)	$\delta 3(15.3)$	1/9 (22.0)	429 (20.6)
In the last two years	10 (1 4)	23 (4.2) 10 (2 E)	42(3.2)	40 (1.0)
Don't know	23 (3 2)	43 (8 3)	79 (10.0)	145 (7.1)
Solf rated health*	25 (3.2)	13 (0.3)	, , (10.0)	113 (7.17)
		$2 \Gamma (4, C)$	72 (0,0)	202(0,7)
Excellent	105 (14.4)	25 (4.6)	/3 (9.0)	203 (9.7)
Very good	229 (31.4)	59 (10.9)	132 (16.3)	420 (20.2)
Good	233 (32.0)	208 (38.3)	301 (37.1)	/42 (35.6)
Fair	114 (15.6)	1/1(31.5)	187 (23.0)	4/2 (22.6)
Not well Don't know	20(2.7)	00 (12.2) 14 (2.6)	93 (11.5) 26 (2.2)	1/9 (8.6)
Don't know	20 (3.0)	14 (2.0)	20 (3.2)	00 (3.3)
	Medical Conditio	ns		
Chronic illness				
Hypertension*	90 (12.5)	115 (21.8)	157 (19.6)	362 (17.7)
High cholesterol*	55 (7.7)	126 (23.9	158 (20.1)	339 (16.6)
Diabetes*	32 (4.4)	51 (9.6)	51 (6.4)	134 (6.5)
Body mass index*				
<25 kg/m <sup>2</sup>	58 (9.0)	128 (25.9)	128 (18.4)	314 (17.1)
$\geq 25 \text{ kg/m}^2$	589 (91.0)	366 (74.1)	567 (81.6)	1522 (82.9)

## Table 1. Descriptive characteristics for women by race/ethnicity, Health Assessment Survey, 2005

#### Table 1. Continued

	African American ( <i>n</i> =729)	Chaldean ( <i>n</i> =543)	Arab ( <i>n</i> =812)	Total ( <i>n</i> =2084)
	Health Behaviors			
Smoking status*				
Current or ex-smoker	286 (39.6)	69 (20.5)	170 (27.5)	525 (31.3)
Never smoked	437 (60.4)	268 (79.5)	449 (72.5)	1154 (68.7)
Physical activity*				
None	160 (21.9)	310 (57.1)	533 (65.6)	1003 (48.1)
Not regular	487 (66.6)	120 (22.1)	183 (22.5)	790 (37.9)
Once/week	28 (3.8)	29 (5.3)	43 (5.3)	100 (4.5)
Twice/week	12 (1,6)	29 (5.3)	18 (2.2)	59 (2.8)
Three times/week	22 (3.0)	23 (4.2)	21 (2.6)	66 (3.2)
Three or more times/week	20 (2.7)	32 (5.9)	14 (1.7)	66 (3.2)

\*\* P< 01

Chaldean communities could be designed. The original study included 3543 individuals aged  $\geq 18$  years ( $\approx 5\%$  of ACC attendees/clients-visitors per year), representing 127 zip codes (from Macomb, Oakland, and Wayne counties). The study period was from August 26, 2005, to October 25, 2005. Approval was obtained from Wayne Statue University Institutional Review Board (#0507002615).

### Questionnaire Development

The instrument was based on a standardized health status questionnaire and included basic demographic, socioeconomic status, health care, health status, and health behavior questions. The instrument was translated into Arabic, and was available to the participant in either Arabic or English; it was pilot tested, and approved by a team of medical, education, research, and public health professionals.

### Procedure

The study was announced to the Arab and Chaldean community through local radio, television, and newspapers. The ACC staff approached potential participants, explained the study, and asked if they would volunteer. The selfadministered survey was distributed at churches, mosques, and small businesses. Participants also were given the option of completing the questionnaire and mailing it. A code number was assigned to each survey form to avoid duplicity of target audience participants because clients may have visited one ACC office twice or more during the data collection period.

### Analysis

Of the 3543 individuals interviewed, the analyses for this paper were limited to Chaldean, Arab, and African American women who responded either yes or no to the heart disease question (n=2084). We excluded men, Whites, Hispanics, other ethnicity, missing ethnicity, and those who responded "don't know" or had missing information for the heart disease question, for a total exclusion of 1459 individuals. In order to make the comparisons between the three ethnic groups more valid, it was necessary to exclude men, since the sample contained only 56 African American men, compared to 308 Chaldean and 537 Arab men.

The outcome for this study was selfreported heart disease, determined by the question, "Have you been diagnosed by your doctor with any heart disease?" Responses were yes or no (referent). The main independent variable was ethnicity, determined by asking, "Which ethnicity are you?" Responses included for this analysis were Chaldean, Arab, and African American (referent).

Covariates included several demographic (age, sex, marital status, language spoken/written), socioeconomic status (educational level, employment status, income), health care (health insurance, physician visit, self-rated health), chronic conditions (hypertension, high cholesterol, diabetes, body mass index), and health behavior variables (exercise and smoking status). Missing data for all covariates, except age, were included as a separate category. For individuals with missing information for age, we calculated the mean age for the sample and applied it to those with missing age.

Descriptive statistics and prevalence of heart disease were calculated for the entire sample as well as for the three ethnic groups. To determine significant differences between groups, t test (for continuous variables) and  $\chi^2$  test (for discrete variables) were used.

Logistic regression was used to estimate the strength of the association between ethnicity and heart disease. Specifically, six sets of analyses were performed: 1) crude odds ratios (ORs) between ethnicity and heart disease; 2) ORs adjusted for demographic characteristics; 3) ORs adjusted for demographic and socioeconomic status characteristics; 4) ORs adjusted for demographic, socio-

	African American ( <i>n</i> =729)	Chaldean (n=543)	Arab ( <i>n</i> =812)
	Demographics		
Age, n (mean±SD)*	29.9±8.06	42.7±16.24	37.4±12.54
Age Categories			
< 25	0	0	0
25–39	7 (1.5)	4 (1.7)	15 (3.4)
40–54	4 (7.1)	4 (3.4)	12 (6.9)
≥ 55	2 (16.2)	28 (20.4)	31 (32.3)
<i>P-value</i>	0.002	0.001	0.001
Marital Status			
Married	2 (2.5)	17 (4.4)	28 (4.7)
Single	8 (1.4)	5 (6.4)	5 (7.8)
Widowed/Divorced/Separated	3 (5.0)	13 (18.1)	24 (17.5)
P-value	.546	.005	.001
Language			
Speak English	13 (1.8)	1 (1.4)	4 (4.2)
Read/write Arabic	0	24 (11.1)	47 (9.0)
Speak Arabic & English	0	6 (2.5)	4 (2.6)
Other language	0	4 (25.0)	0
P-value	.031	.430	.090
	Socioeconomic Status		
Education			
Less than high school	3 (5.7)	23 (9.3)	41 (10.1)
High school or more	10 (1.5)	10 (3.5)	14 (3.6)
P-value	0.202	0.006	0.001
Employment Status			
Employed	0	2 (1.6)	5 (5.2)
Unemployed	8 (2.0)	20 (5.7)	30 (4.9)
Disabled	4 (12.5)	6 (18.8)	20 (27.0)
Retired	1 (25.0)	6 (26.1)	2 (14.3)
<i>P-value</i>	.001	.001	.001
Income			
Less than \$10,000	3 (1.0)	12 (9.8)	31 (10.2)
\$10,000 or more	9 (3.6)	8 (2.9)	13 (4.3)
P-value	.047	.017	.004

economic status, and healthcare characteristics; 5) ORs adjusted for demographic, socioeconomic status, healthcare characteristics, and chronic conditions; and 6) ORs adjusted for demographic, socioeconomic status, healthcare characteristics, chronic conditions, and health behaviors. Data management procedures were carried out with SPSS.<sup>11</sup>

### RESULTS

The overall prevalence of heart disease for women was 5.1%. Estimates were higher for Arabs (7.1%), lower for

Chaldeans (6.6%), and lowest among African Americans (1.8%). The mean age was higher among Chaldeans (42.7 years) and Arabs (37.4 years) than among African Americans (29.9 years). Chaldeans (71.6%) and Arabs (74.1%) were more likely to be married compared to African Americans (11.1%) (P<.001). Compared to African Americans, Chaldeans and Arabs were more likely to have less than a high school education, to be unemployed, but to report an income  $\geq$ \$10,000 (all P<.001). Furthermore, Chaldeans and Arabs were less likely to have health insurance and to rate their health as

excellent or very good compared to African Americans. In addition, ≈20% of Chaldeans and Arabs reported having hypertension compared to 12.5% of African Americans (P<.01). Also, diabetes disproportionately affected Chaldeans (9.6%) and Arabs (6.4%) compared to African Americans (4.4%) (P < .01). Finally, even though a higher proportion of Chaldeans and Arabs reported never smoking compared to African Americans, a higher proportion of Chaldeans (57.1%) and Arabs (65.5%) reported never exercising compared to African Americans (21.9%) (*P*<.01).

#### Table 2. Continued

	African American ( <i>n</i> =729)	Chaldean ( <i>n</i> =543)	Arab ( <i>n</i> =812)
	Health Care		
Health Insurance			
Yes	8 (1.4)	30 (8.0)	43 (7.8)
No	4 (3.4)	3 (2.0)	13 (5.6)
<i>P-value</i>	.241	.001	.248
Physician Visit			
In the last 6 months	7 (1 5)	34 (9.6)	47 (9.9)
In the last vear	4 (2.4)	1 (1.2)	4 (2.2)
In the last two years	2 (3.8)	0	2 (4.8)
In the last five years	0	0	0
Don't know	0	1 (1.5)	5 (4 9)
P-value	.521	.001	.001
Self-rated Health			
Evcollent	2 (1 0)	0	1(1 A)
Very good	2(1.3)	0	1(1.4)
Cood	1 (0.4)	1 (0 5)	(1.3)
Enir	2(1.3)	16(0.3)	9 (4.8)
Tali Not woll	(1.0)	18 (27 3)	9 (4.0) 32 (34 4)
Don't know	1 (3.6)	10(27.3)	3 (11 5)
P-value	078	001	001
I -value		.001	.001
	Medical Conditions		
Chronic illness			
Hypertension*	8 (8.9)	25 (21.7)	44 (28.0)
High Cholesterol*	5 (9.1)	25 (19.8)	35 (22.2)
Diabetes*	7 (21.9)	14 (27.5)	14 (27.5)
Body mass index*			
$< 25 \text{ kg/m}^2$	0	2 (1.6)	7 (5.5)
$\geq 25 \text{ kg/m}^2$	13 (2.2)	26 (7.1)	43 (7.6)
P-value	.001	.002	.358
	Health Behaviors		
Smoking status			
Current or ex-smoker	3 (1.0)	5 (7.2)	19 (11.2)
Never smoked	10 (2.3)	6 (2.2)	31 (6.9)
P-value	.185	.126	.114
Physical Activity			
None	5 (3.1)	22 (7.1)	50 (9.4)
Not regular	7 (1.4)	8 (6.7)	5 (2.7)
Once/week	0	3 (10.3)	1 (2.3)
Twice/week	0	0	2 (11.1)
Three times/week	1 (4.5)	1 (4.3)	0
Three or more times/week	0	2 (6.3)	0
P-value	.255	.508	.001
Except for age all values are given as $n$ (%)			

\* P<.01.

Table 2 presents the prevalence of heart disease for women by race and ethnicity by each covariate. For all racial/ethnic groups, the prevalence of heart disease increased with age (all P<.01). Chaldeans (18.1%) and Arabs (17.5%) who were widowed/divorced/ separated were more likely to have heart

disease than were single or married women (all P<.01). In addition, except for African Americans who earned <\$10,000, all socioeconomic status variables were inversely associated with the prevalence of heart disease. Also, the prevalence of heart disease was higher for Chaldeans (27.3%) and Arabs (34.4%) who rated their health as "not well" than among those who rated their health as excellent, very good, good, or fair (all P<.001). Among those with hypertension, the prevalence of heart disease was 8.9% for African Americans, 21.7% for Chaldeans, and 28.0% for Arabs. Also, among those with high

Race/Ethnicity	Unadjusted, OR (95% CI)	Model 1, OR (95% Cl)*	Model 2, OR (95% CI)*	Model 3, OR (95% Cl)*	Model 4, OR (95% Cl)*	Model 5, OR (95% Cl)*
African American	1.00	1.00	1.00	1.00	1.00	1.00
Chaldean	3.91 (2.05-7.45)	.91 (.27-3.00)	.93 (.283.13)	.93 (.26-3.34)	1.25 (.33-4.83)	1.19 (.30-4.69)
Arab	4.24 (4.24–7.80)	1.66 (.53-5.20)	1.71 (.555.39)	1.98 (.61-6.47)	2.40 (.70-8.24)	2.30 (.66–7.99)

Table 3. Unadjusted and adjusted odds ratios (OR) and 95% confidence intervals (CI) for heart disease by race/ethnicity, Health Assessment Survey, 2005

\* Model 1 adjusted for age, marital status, and language; model 2 additionally adjusted for education, employment status, and income; model 3 additionally adjusted for health insurance, physician visits, and self-rated health; model 4 additionally adjusted for hypertension, high cholesterol, diabetes, and body mass index; model 5 additionally adjusted for smoking status and physical activity.

cholesterol, the prevalence of heart disease was 9.1% for African Americans, 19.8% for Chaldeans, and 22.2% for Arabs. For diabetes, however, the prevalence was similar among the three ethnic groups: 21.9% for African Americans and 27.5% for Chaldeans and Arabs. Further, African Americans (2.2%) and Chaldeans (7.1%) with BMI  $\geq$ 25 kg/m<sup>2</sup> had a higher prevalence of heart disease compared to those with BMI <25 kg/m<sup>2</sup> (all *P*<.01).

Table 3 presents the unadjusted and adjusted odds ratios with their 95% confidence intervals for the prevalence of heart disease by race/ethnicity. In the unadjusted model, Chaldeans and Arabs were four times more likely to have heart disease than were African Americans. In the fully adjusted model, the association between Chaldean or Arab ethnicity and heart disease was no longer statistically significant.

## DISCUSSION

Overall, these findings showed that Arab and Chaldean women had a higher prevalence of self-reported heart disease compared to African American women. Although these patterns persisted after adjusting for all covariates, the association between ethnicity and heart disease did not reach significance. This finding suggests that Chaldeans and Arabs have a similar heart disease prevalence as do African Americans.

Existing research on the prevalence of heart disease in Arab and Chaldean Americans provides mixed results.<sup>6,7</sup> For example, Hassoun showed that the overall prevalence of heart disease among a convenience sample of 300 Arab and Chaldean Americans was 3.7%,7 while Aswad reported an estimate of 7.6%<sup>6</sup> among a convenience sample of  $\approx 1000$  Arab Americans. Only Hassoun reported estimates separately for women (2.6%).7 In addition, Hassoun found that the prevalence of heart disease was  $\approx 5\%$  for Chaldeans/ Iraqis, regardless of sex.7 When compared to previous studies, our study found a higher prevalence of heart disease for Arab (7.1%) and Chaldean (6.6%) women. This may be because our sample, compared to other studies, may have differed in age, socioeconomic status, or other factors associated with heart disease.

In addition to demographic and socioeconomic status variables, other reasons may explain why Chaldeans and Arabs experience more heart disease than do African Americans. Chaldeans and Arabs, compared to African Americans, appear to have a higher prevalence of some of the risk factors associated with heart disease. Previous research has shown that the prevalence of diabetes among Arab and Chaldean women was  $\approx 20\%^4$  and 33%,<sup>12</sup> respectively, compared to 12% in African American women.<sup>13</sup> However, the prevalence of hypertension was lower, 22.7%,14 in Arab women, compared to  $\approx 30\%$  in African American women. In addition, the prevalence of high cholesterol was 13.7% for Arab and Chaldean women,<sup>7</sup> compared to ≈30% in African American women. Studies in Michigan found

that mean BMI for Arab (28.8 kg/m<sup>2</sup>), Chaldean (32.1 kg/m<sup>2</sup>) and African American (33.1 kg/m<sup>2</sup>)<sup>15</sup> women was similar. Therefore, the high prevalence of diabetes among Arab and Chaldean American women may be driving the high prevalence of heart disease in this population.

While it is crucial to examine heart disease estimates for Arabs and Chaldeans in Michigan, these estimates should be compared to those in their country of origin. Such comparisons would have helped us better understand whether Arabs and Chaldeans had heart disease before they immigrated to the United States, or whether they developed these conditions after their arrival. Unfortunately, heart disease estimates for various Middle Eastern countries using World Health Organization data were not available.

Among the strengths of this study is that it addressed limitations of other studies (used dated information, had a small sample size, or did not compare estimates to other minority groups).<sup>6,7</sup> The large sample size in our study allowed us the ability to control for numerous potential confounders. In addition, this study included Arabs and Chaldeans and used African Americans as the comparison group, which is important because these groups live in the same areas and may be exposed to the same risk factors for heart disease. Finally, in order to understand how other variables may have affected the relationship between ethnicity and heart disease, this study collected not just demographic and SES information but

... our study shows that Arabs and Chaldeans have more heart disease than do African Americans.

also variables related to health care, chronic conditions, and health behaviors. Still, a number of shortcomings may have affected our results. The first is that this study was a convenience sample; therefore, perhaps only healthy individuals may have volunteered. In addition, the prevalence of heart disease was self-reported. However, these two limitations would have underestimated our study's results. Also, even though we had a large sample size, oversampling of individuals  $\geq 40$  years of age would have improved statistical power, given that heart disease is higher in this age group. However, we addressed this limitation by testing the interaction between age and ethnicity on heart disease in the fully adjusted model. The association was not statistically significant (P=.188), which indicates that the odds ratios for heart disease for every possible category of race/ ethnicity and age are constant. Regardless of the interaction, we repeated the analysis for the final model, limiting the data to those  $\geq 40$  years of age, and the results remained statistically insignificant.

This study underscores the importance of examining chronic conditions in a sample of immigrant, minority women residing in southeast Michigan. Specifically, our study shows that Arabs and Chaldeans have more heart disease than do African Americans. Future studies should include a probability sample of Arab and Chaldean Americans, which would include more men. In addition, these studies should incorporate better measurements of socioeconomic status, health behaviors, health care, and especially questions regarding acculturation and language use. This type of research will provide more detailed information about this population and highlight the potential areas where intervention and prevention programs would be most effective in reducing the prevalence of and risk factors related to heart disease.

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