

Church-Based Heart Health Project: Health Status of Urban African Americans

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Abstract

One of the major health disparities in the African-American population is the high incidence of underdiagnosed cardiovascular disease prior to onset of symptoms. Cardiovascular diseases are one of the chief causes of decreased longevity, reduced quality of life, and poor treatment outcomes among African Americans. The Church-Based Heart Health Project, a pilot initiative of Kaiser Permanente (KP) Ohio's Center of Excellence for Health Disparities and Cultural Competency for African American Health, was implemented in 2004 as an innovative and proactive response to confront this cardiovascular health disparity in greater Cleveland's African-American population. The goal of this program was to reduce individual participants' risks for cardiac events (that is, heart attack, heart disease, or cardiac death) by 1) providing individual risk assessment and interpretation and 2) cataloging the generalized health status of urban churchgoing African Americans in greater Cleveland. We describe the cardiovascular risk factors present in a random population of urban churchgoing African Americans participating in sponsored health screenings at their church. A convenience sample of 144 African-American adults participated in this study. Twenty-five percent (37) were men and 75% (107) were women, and participants' mean age was 54.2 years. Ninety percent were not members of KP Ohio. Cardiovascular risk factors measured included body mass index, lipid levels (cholesterol, high-density lipoprotein, low-density lipoprotein, triglycerides), blood pressure, brief health history, Framingham Coronary Heart Disease Prediction Score, and National Heart, Lung, and Blood Institute prediction score for ten-year risk. A large portion of the population was found to have at least one risk factor for coronary heart disease (CHD).

Background

The poor state of health of urban African Americans has been attributed to disproportionately large incidences of heart disease, diabetes, and stroke, the leading causes of death in the United States.^{1,2} These diseases are the major causes of

decreased longevity, decreased quality of life, and poor treatment outcomes among African Americans. The elimination of health disparities in the United States is a high-priority need because research indicates that African Americans (and other people of color) live

with more comorbid conditions that negatively affect the quality of their lives and die at a younger age than their Caucasian counterparts.¹⁻³ Heart disease is about 40% higher among African Americans than among Caucasians,^{4,5} and strokes are more likely in African Americans than in Caucasians.⁵⁻⁷ Cardiovascular disease mortality in African Americans aged 20-74 years is at least 35% higher than in Caucasians. Certain modifiable risk factors, including hypertension, high cholesterol, tobacco use, obesity, and lack of exercise are the main targets for primary and secondary prevention of cardiovascular diseases. Undergirding health disparities are factors that directly affect the health of African Americans and other people of color, such as education level, socioeconomic status, communication barriers between health care provider and patient, and overt discrimination.⁸ Research indicates that individuals and families with more education⁹ and higher income are more likely to take a larger role in managing their health care. They have higher levels of health literacy and a support structure that values lifestyle changes to promote good health.¹⁰⁻¹² Lack of higher education and adequate income have been cited as the reasons many members of minority groups

... even among middle-class African Americans, health disparities exist; there is a direct correlation between discrimination and cardiovascular risk.^{2,8,11}

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lack health knowledge and skills and do not have effective health-seeking behaviors.^{10,12} However, even among middle-class African Americans, health disparities exist; there is a direct correlation between discrimination and cardiovascular risk.^{2,8,11} Increasing socioeconomic status and education levels do not directly correlate to better health outcomes in African Americans nor to high adherence rates to healthy lifestyle interventions.¹³ In addition, the lack of successful communication between patients and health care providers negatively affects health outcomes.¹⁴⁻¹⁶

Because of the long historical precedent for provision of health-promotion programs aimed at hard-to-reach populations by partnering with African-American churches and community centers,^{13,17,18} there is significant research illustrating that both neighborhood-linked and faith-based health promotion and education results in improved health status and better medical outcomes such as better disease control, earlier diagnoses, and fewer comorbidities for the entire African-American community.^{17,18} Holt et al¹⁹⁻²¹ reported that church helps African Americans to use their spiritual health to improve their physical health, ability to cope with stress, and ability to make healthy lifestyle choices.¹⁹⁻²¹ However, interventions targeted at the African-American community seem to fall short of the desired outcome of eliminating the population's disproportionate burden of disease morbidity and mortality.

Methods

The Church-Based Heart Health Project, a pilot initiative of Kaiser Permanente (KP) Ohio's Center of Excellence for Health Disparities and Cultural Competency for Afri-

can American Health, was offered in 2004-05 on-site at African American churches in the service areas of the Kaiser Permanente Cleveland medical facilities. By bringing this program to the people it was meant to help, we eliminated access barriers and were able to reach people who would not otherwise be reached by our in-house programs.

Between 2004 and 2005, a descriptive study design was used to catalog the health status of urban churchgoing African Americans in the greater Cleveland area. Anonymous, free health screening for glucose levels, lipid levels, blood pressure, and body weight to determine cardiovascular risk was offered on-site directly after worship services at African-American churches in our service areas. A total of 144 parishioners (90% were not members of KP Ohio) from six churches participated. Screening included customized result interpretation, brief counseling and education by KP clinicians, and targeted provision of risk-reduction interventions at the churches. The American Heart Association's

Search Your Heart curriculum, a culturally adapted program, was used for the risk-reduction portion of the program.

Weight was measured on a portable scale, and participants were asked to self-report their height. Blood pressure was measured using a manual sphygmomanometer. Blood samples were collected, and blood glucose (random), total cholesterol, low-density lipoprotein, high-density lipoprotein, and triglyceride levels were immediately analyzed on a handheld meter (CardioCheck PA Whole Blood Test System, Polymer Technology Systems, Indianapolis, Indiana; OneTouch Ultra LifeScan, Milpitas, California) by a registered nurse, supervised by a physician. Any screening participants whose tests had abnormal results were referred either to their usual primary care physician or to the Free Clinic in the Greater Cleveland Metropolitan Area. The project also included follow-up phone calls by the registered nurse to those participants; the calls showed that 71% of those referred for immediate follow-up care did seek it and

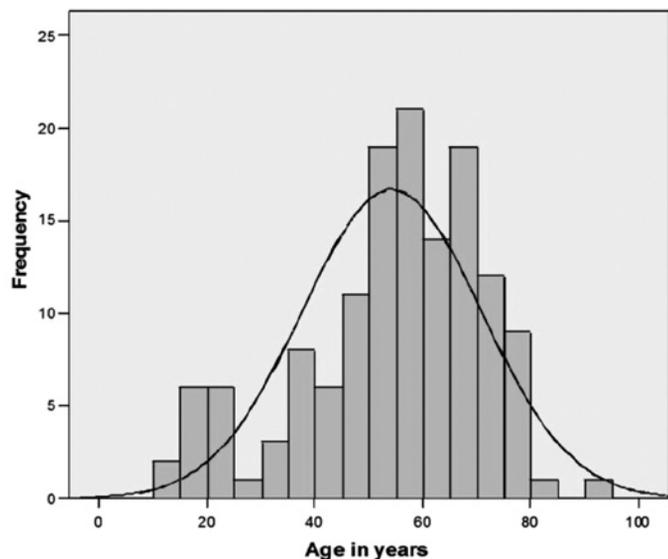


Figure 1. Distribution of age among study participants.

that 14% of those counseled to stop smoking did. Framingham Coronary Heart Disease Risk Prediction Scores were determined for 40 participants. Participants' ten-year risk of developing CHD was determined by using the National Heart, Lung, and Blood Institute prediction score for women and for men.

Results

Not all study participants had all variables evaluated; number and percentage are described individually here for each variable. Twenty-five percent (37) were men and 75% (107) were women. The mean age of participants was 54.2 ± 16 years, with only 26 participants being younger than 40 years; the rest of the sample ranged in age from 40 to 92 years (Figure 1).

The mean body mass index (BMI) was 29.8 m/kg² (SD = 6.8 m/kg²) with a very broad BMI range from 17.7 to 62.4 m/kg². Of 146 participants (132 subjects had complete data sets for BMI calculation), 28 (19%) had BMIs in the normal range, <25 m/kg². The rest of the participants had BMIs above the normal range >25 m/kg² categorizing them as overweight or obese; 49 (33.6%) had BMIs between 25 and 30 m/kg², categorizing them as overweight; 41 (28.1%) had BMIs between 30 and 38 m/kg², categorizing them as obese; and 14

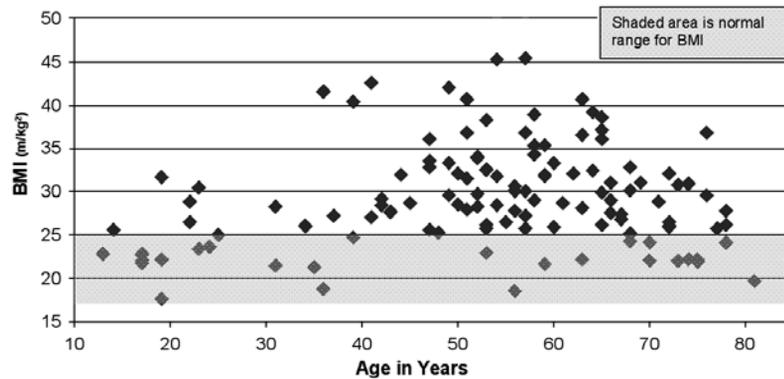


Figure 2. Age versus body mass index (BMI) of study participants.

(9.6%) had BMIs >38 m/kg², categorizing them as morbidly obese (Figure 2).

Blood pressure, blood glucose (random), total cholesterol, low-density lipoprotein, high-density lipoprotein, and triglyceride levels were measured for all participants (Table 1).

Many of the participants had clinical values for these measures outside the normal range: 65% had a systolic blood pressure higher than normal (normal range, 120–130 mm Hg), 51% had high total cholesterol levels (range, 200–240 mg/dL), and 48% had high triglyceride levels (range, 150–200 mg/dL).

The Ten-year Framingham Coronary Heart Disease Prediction Score was determined for 40 participants (Table 2). For the men tested, the ten-year risk was 13% ± 1% (range,

4%–31%; n = 5); for the women tested, it was 7.7% ± 4% (range, 1%–20%; n = 35).

Discussion

Little work has been done since Thomas et al (1994) determined the predictors of effective church-based health outreach programs for African Americans.²² Our study also cataloged the health status of attendees of churches with active health ministries and found that a large portion of the population in question had at least one risk factor for cardiovascular disease; this is consistent with findings of other studies of African Americans.²³ Almost 80% of participants in this study had a BMI above normal and approximately 50% had at least one elevated lipid value (cholesterol, low-density lipoprotein, triglycer-

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Table 1. Clinical characteristics								
Variable	Normal		High normal		High		Danger zone	
	Range	N (%)	Range	N (%)	Range	N (%)	Range	N (%)
Body mass index (kg/m ²)	≥25	28 (19)	25–30	49 (34)	30–38	41 (28)	>38	14 (10)
Systolic blood pressure (mm Hg)	120–130	42 (35)	130–139	20 (16)	>140	57 (48)	>180	1 (1)
Diastolic blood pressure (mm Hg)	<80	95 (79)	80–89	6 (5)	90–110	17 (14)	>110	2 (2)
Random blood glucose (mg/dL)	<120	101 (76)	120–140	15 (11)	140–180	8 (6)	>180	9 (7)
Total cholesterol (mg/dL)	<200	64 (49)	—	—	200–240	32 (24)	>240	35 (27)
Low-density lipoprotein (mg/dL)	<140	47 (64)	—	—	140–170	16 (22)	>170	11 (15)
High-density lipoprotein (mg/dL)	>60	61 (46)	—	—	40–60	47 (36)	<40	24 (18)
Triglycerides (mg/dL)	<150	65 (52)	—	—	150–200	16 (13)	>200	44 (35)

Table 2. Framingham Coronary Heart Disease Prediction Scores

Sex	Ten-year coronary heart disease risk (with standard deviation)	Range (%)	N (%)
Male	13% ± 1%	4–31	5 (12.5)
Female	7.7% ± 4%	1–20	35 (87.5)

ides). This combination of obesity and high lipid levels significantly influences heart health and associated cardiovascular disease risk.^{24,25} Increased cardiovascular risk was present when compared with the general population using the Framingham Coronary Heart Disease Prediction Score.²³

Limitations

Our study had several limitations. First, the sample was recruited in six churches in one Midwestern city over the period of one year, limiting our ability to generalize to other urban settings. However, several reports document similar health problems facing urban African-American populations in other large cities,^{13,20,21} suggesting some commonality of issues. Second, because all participants were churchgoers and the screenings were done at their churches, the participants might not be representative of the target population as a whole. Third, all data in this study were either self-reported (height), with the potential for social desirability effects, or were measured by handheld monitoring devices, which have the potential for introducing significant measurement error.

Conclusions

We have described here a reality for urban African-American churchgoers that indicates a high preponderance of cardiovascular risk factors and associated morbidity. Although African-American churches promote healthy lifestyles as part of their ministry efforts,^{26–28} our findings indicate that our population's cardiovascular

health needs improvement. Our study participants had more CHD risk factors than the general population, which might mean that the church health ministry programs are not efficacious as they could be. These programs might be more effective if they partnered with other community health resources rather than relying solely on internal church resources. A majority of the participants had one or more cardiovascular risk factors that could be significantly reduced by lifestyle changes; therefore, a concerted effort by church health ministries to implement lifestyle behavior change programs is necessary.

Future Research

New modalities of health education outreach need to be developed to address easily modifiable lifestyle changes to decrease disease risk factors. Future studies also need to encompass both the churchgoing population and the population at large in African-American urban communities to determine whether these groups have the same levels of risk. Access flexibility in the health care system for urban African Americans is necessary to respond to persons with screening results that indicate cardiovascular risk; different care delivery mechanisms must be explored. Additionally, we must determine the underlying reason that health care disparities still occur in the African-American population. ♦

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References

- Byrd WM, Clayton LA. Race, medicine, and health care in the United States: a historical survey. *J Natl Med Assoc* Mar 2001;93(3 Suppl):115–345.
- Smedley BD, Stith AY, Nelson AR, editors; Committee on Understanding and Eliminating Racial and Ethnic Disparities in Health Care. *Unequal treatment: confronting racial and ethnic disparities in health care*. Washington, DC: National Academies Press; 2003.
- Sullivan Commission on Diversity in the Healthcare Workforce. *Missing persons: minorities in the health professions*. Atlanta, GA: Morehouse School of Medicine; 2004.
- Healthy People 2010: understanding and improving health. 2nd edition. Washington, DC: US Department of Health and Human Services; 2000.
- Sheinart KF, Tuhim S, Horowitz DR, et al. Stroke recurrence is more frequent in Blacks and Hispanics. *Neuroepidemiology* 1998;17(4):188–98.
- Dundas R, Morgan M, Redfern J, Lemic-Stojcevic N, Wolfe C. Ethnic differences in behavioural risk factors for stroke: implications for health promotion. *Ethn Health* 2001 May;6(2):95–103.
- Pamboukian SV, Costanzo MR, Meyer P, et al. Influence of race in heart failure and cardiac transplantation: mortality differences are eliminated by specialized, comprehensive care. *J Card Fail* 2003 Apr;9(2):80–6.
- Guyll M, Matthews KA, Bromberger JT. Discrimination and unfair treatment: relationship to cardiovascular reactivity among African American and European American women. *Health Psychol* 2001 Sep;20(5):315–25.
- Appel SJ, Harrell JS, Deng S. Racial and socioeconomic differences in risk factors for cardiovascular disease among Southern rural women. *Nurs Res* 2002 May–Jun;51(3):140–7.
- Browning CR, Cagney KA, Wen M. Explaining variation in health status across space and time: implications for racial and ethnic disparities in self-rated health. *Soc Sci Med* 2003 Oct;57(7):1221–35.
- Pappas G, Queen S, Hadden W,

- Fisher G. The increasing disparity in mortality between socioeconomic groups in the United States, 1960 and 1986. *N Engl J Med* 1993 July 8;329(2):103-9.
12. Schillinger D, Grumbach K, Piette J, et al. Association of health literacy with diabetes outcomes. *JAMA* 2002 Jul 24-31;288(4):475-82.
 13. Resnicow K, Jackson A, Blissett D, et al. Results of the healthy body healthy spirit trial. *Health Psychol* 2005 Jul;24(4):339-48.
 14. Erlen JA. When all do not have the same. *Health disparities. Orthop Nurs* 2003 Mar-Apr;22(2):151-4.
 15. Betancourt JR, Green AR, Carrillo JE, Ananeh-Firempong O 2nd. Defining cultural competence: a practical framework for addressing racial/ethnic disparities in health and health care. *Public Health Rep* 2003 Jul-Aug;118(4):293-302.
 16. Johnson RL, Saha S, Arbelaez JJ, Beach MC, Cooper LA. Racial and ethnic differences in patient perceptions of bias and cultural competence in health care. *J Gen Intern Med* 2004 Feb;19(2):101-10.
 17. Goldmon MV, Roberson JT Jr. Churches, academic institutions, and public health: partnerships to eliminate health disparities. *N C Med J* 2004 Nov-Dec;65(6):368-72.
 18. Seils DM, Schulman KA. Perceptions of racial and ethnic differences in access to healthcare. *N C Med J* 2004 Nov-Dec;65(6):350-2.
 19. Holt CL, Haire-Joshu DL, Lukwago SN, Lewellyn LA, Kreuter MW. The role of religiosity in dietary beliefs and behaviors among urban African American women. *Cancer Control* 2005 Nov;12 Suppl 2:84-90.
 20. Holt CL, Lewellyn LA, Rathweg MJ. Exploring religion-health mediators among African American parishioners. *J Health Psychol* 2005 Jul;10(4):511-27.
 21. Holt CL, McClure SM. Perceptions of the religion-health connection among African American church members. *Qual Health Res* 2006 Feb;16(2):268-81.
 22. Thomas SB, Quinn SC, Billingsley A, Caldwell C. The characteristics of northern black churches with community health outreach programs. *Am J Public Health* 1994 Apr;84(4):575-79.
 23. Wilson PW, D'Agostino RB, Levy D, et al. Prediction of coronary heart disease using risk factor categories. *Circulation* 1998 May 12;97(18):1837-47.
 24. LaRosa JC, Hunninghake D, Bush D, et al. The cholesterol facts. A summary of the evidence relating dietary fats, serum cholesterol, and coronary heart disease. A joint statement by the American Heart Association and the National Heart, Lung, and Blood Institute. The Task Force on Cholesterol Issues, American Heart Association. *Circulation* 1990 May;81(5):1721-33.
 25. Gregg EW, Cheng YJ, Cadwell BL, et al. Secular trends in cardiovascular disease risk factors according to body mass index in US adults. *JAMA* 2005 Apr 20;293(15):1868-74.
 26. Ransdell LB. Church-based health promotion: an untapped resource for women 65 and older. *Am J Health Promot* 1995 May-Jun;9(5):333-6.
 27. Peterson J, Atwood JR, Yates B. Key elements for church-based health promotion programs: outcome-based literature review. *Public Health Nurs* 2002 Nov-Dec;19(6):401-11.
 28. Holmes MA. Health disparities, the faith agenda, and health promotion/disease prevention: the General Baptist State Convention of North Carolina model. *N C Med J* 2004 Nov-Dec;65(6):373-6.

Implementation

Guidelines alone have little benefit without effective implementation.

— Pheatt N, Brindis RC, Levin E. *Putting heart disease guidelines into practice: Kaiser Permanente leads the way. Perm J* 2003 Winter;7(1):18-23.