



# Cardiovascular Risk in Midlife African American Women Participating in a Lifestyle Physical Activity Program

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**Background:** Cardiovascular disease (CVD) is the largest contributor to disparate morbidity and mortality in African American women. **Objective:** The aims of this article are to describe in a cohort of sedentary, urban community-based midlife African American women eligible for a physical activity program their (1) CVD risk factors and (2) awareness, treatment, and control of hypertension and hypercholesterolemia. **Methods:** Cross-sectional baseline findings on 297 women were examined at baseline of a controlled physical activity clinical trial. Cardiovascular disease risks included hypertension, hypercholesterolemia, smoking, diabetes, and obesity. Among women with hypertension and hypercholesterolemia, rates of awareness, treatment, and control were calculated. **Results:** Our sample had significantly more hypertension and obesity than reported in other national samples of African American women. The women mirrored national samples of African American women: fewer than 60% had adequate control of hypertension. Versus national samples of African Americans (men/women combined), our study groups both showed significantly lower low-density-lipoprotein cholesterol level: treatment, 33% versus 63.8%, and control, 24.8% versus 45.3%. **Conclusions:** Because national samples are more heterogeneous, our sample provides important information about CVD risks in inactive, urban community-dwelling, midlife African American women. Given the opportunity, many such women at elevated risk for CVD are willing to participate in a physical activity intervention. They must be identified and offered pharmacological and lifestyle interventions.

**KEY WORDS:** African American women, cardiovascular disease risk factors, hypertension, physical activity

## Introduction and Background

Cardiovascular disease (CVD) is the largest contributor to disparate morbidity and mortality in African American women.<sup>1</sup> In 2012, the prevalence of CVD in non-Hispanic African American women was 48.3%, compared with 36.4% in all women and 36.1% in non-Hispanic White women. In 2011, the age-adjusted death rate attributable to CVD in African American women

was 99.7 per 100 000, compared with 80.1 for white women. African American women also have a history of stroke that is almost twice that of white women (4.7% vs 2.5%).<sup>2</sup>

Hypertension, a major health risk factor for CVD and stroke, is largely responsible for the excess morbidity and mortality among African American women. From 2009 to 2012, the prevalence of hypertension among adults in the United States was 1 in 3, but among

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non-Hispanic African American women 20 years or older, it was 46.1%. The age-adjusted death rate per 100 000 attributable to hypertension was 18.9 in 2011 overall, but nearly twice that (35.1) for African American women.<sup>2</sup>

Data from the National Health and Nutrition Examination Survey (NHANES) 2007–2012 showed that 88.5% of non-Hispanic African American women with hypertension were aware that they had high blood pressure (BP), and 82.3% of them were being treated with medication, but only 55.9% had adequate BP control (<140 mm Hg systolic and <90 mm Hg diastolic).<sup>2</sup> Although this control rate of 55.9% was only slightly less than for white women (58.7%), the outcomes of uncontrolled hypertension are much worse in African American women, considering their markedly higher rates of heart disease and strokes. These facts highlight the importance of improving hypertension prevention and control in African American women.

Hypercholesterolemia is another major health risk factor for coronary heart disease and stroke. Data from NHANES 2009–2012 showed that non-Hispanic African American women and white women had similarly high percentages of total cholesterol levels of 200 mg/dL or higher (40.7% and 45.9%, respectively) and bad low-density lipoprotein (LDL) cholesterol levels of 130 mg/dL or higher (33.6% and 32%, respectively).<sup>2</sup> Likewise, the percentage of non-Hispanic African American and white women with low levels (<40 mg/dL) of the good high-density lipoprotein (HDL) cholesterol was similar (10.3% and 10.2%, respectively). Data from NHANES 2009–2010 for African American men and women combined (the only way reported) showed that they were similar to white men and women on awareness of having hypercholesterolemia (64.2% vs 65.3%), but fewer African Americans with hypercholesterolemia were treated (63.8% vs 70.2%) or controlled (45.3% vs 67.2%).<sup>3</sup>

Additional health and behavior risk factors that contribute to the burden of CVD in African American women include smoking, diabetes, and obesity. National Health Interview Survey 2013 data showed that 15.0% of non-Hispanic African American women smoked cigarettes, significantly fewer than non-Hispanic white women at 18.7%.<sup>4</sup> Data from NHANES showed that 14.6% of non-Hispanic African American women had physician-diagnosed diabetes mellitus, significantly more than white women at 6.1%.<sup>2</sup> Moreover, NHANES 2009–2012 showed that approximately 81.9% of African American were overweight or obese, compared with 61.2% of white women.<sup>2</sup>

Herein, we report the baseline data pertinent to the above CVD risks in a sample of women we recruited for a physical activity intervention: The Women's Lifestyle Physical Activity Program for African American women.<sup>5</sup> Physical activity is well established as a heart-healthy

behavior for the prevention of myocardial infarctions and strokes<sup>6,7</sup> and for managing hypertension,<sup>8–13</sup> diabetes,<sup>12,14,15</sup> and, to a lesser extent, hypercholesterolemia.<sup>11,16,17</sup> Engaging in regular physical activity results in a cardioprotective effect, lowering BP and improving cholesterol levels through multiple mechanisms, including neurohormonal changes, structural adaptations, and release of fatty acids to be used by skeletal muscle.<sup>18–20</sup> Furthermore, physical activity helps to maintain weight and prevent the gradual creep of 1 lb of weight per year, resulting in overweight or obesity over time.<sup>21,22</sup> Given these benefits, regular physical activity is an important priority for non-Hispanic African American women; however, in 2010, only 31.7% of them, compared with 47.4% of white women, met the 2008 physical activity guidelines for adults (at least 150 minutes of moderate or 75 minutes of vigorous aerobic leisure-time physical activity per week or combination).<sup>4</sup> Thus, we designed and implemented The Women's Lifestyle Physical Activity Program for African American women.

It is essential that physical activity interventions are not only informed by but also tested with participants whose CVD risk factors match what is known about those of the target population. The Women's Lifestyle Physical Activity Program for African American women<sup>5</sup> was informed by work done in an earlier women's walking program for African American women.<sup>23</sup> The women's walking program was initially developed after 6 focus groups conducted with African American women.<sup>24</sup> After completion of the program, postintervention focus groups were held with the participants to learn what they liked and did not like and to make recommendations for additional development.<sup>25</sup>

The aims of this article are to describe the CVD risk factors (hypertension, hypercholesterolemia, smoking, diabetes, and obesity) in a cohort of community-based inactive midlife African American women who were eligible for the new Women's Lifestyle Physical Activity program, as well as their awareness, treatment, and control of hypertension and hypercholesterolemia.<sup>2,3</sup> No one-to-one comparisons or contrasts are possible, but to put our data in context, we present them against the backdrop of 1 the largest most referenced databases: the NHANES.<sup>2</sup>

## Methods

### Study Design

Cross-sectional baseline findings are examined herein. The baseline data were collected for a controlled clinical trial testing 3 study conditions designed to increase adherence to lifestyle physical activity and improve cardiovascular health in midlife African American women that is described in detail elsewhere.<sup>5</sup>

## Sample and Setting

Participants were sedentary (not involved in routine exercise  $\geq 2$  times per week in the past 6 months), urban-dwelling, midlife African American women aged 40 to 65 years. Because the average age of menopause for African American women is 49.6 years,<sup>26</sup> this age range included women with changing risk for CVD due to loss of the natural cardioprotective ovarian hormones at menopause.<sup>27,28</sup> Exclusion criteria included only risks for exercise-related adverse events: (1) major signs or symptoms of pulmonary disease or CVD, (2) history of myocardial infarction or stroke, and (3) BP 160 mm Hg or greater systolic or 100 mm Hg or greater diastolic.<sup>29</sup> Women with diabetes had to have a A1C less than 9%.<sup>30</sup>

After institutional review board approval was received, recruitment was concentrated within the 6 Chicago communities where the study sites were located, including 3 community hospitals and 3 health centers.<sup>31</sup> The sites were in or bordering communities that were predominantly African American (>90%) and had 30% of household incomes below the poverty level.<sup>32</sup>

A total of 609 women responded to the recruitment strategies, which included using key contacts in the community to distribute informative flyers.<sup>31</sup> Furthermore, participants used their social networks to encourage participation of other women. Briefly, of the 514 women who completed an initial telephone screening, 105 were ineligible and 409 were scheduled for a health assessment screening at their respective community site with a study nurse practitioner. After providing written informed consent, participants had a health history and physical examination emphasizing CVD risk factors. Of the 337 women who completed the screening health assessment (72 did not come to the health assessment), 40 were ineligible. The remaining 297 were not at risk for exercise-related adverse events. The reasons for ineligibility at telephone screening or health assessment included too active (55), did not meet age or race criteria (29), major signs of CVD or history of myocardial infarction or stroke (20), hypertension (18), electrocardiogram abnormality (9), elevated A1C (5), or other health problems (9).

## Measures

### Demographics and Aerobic Fitness

Demographics included age, marital status, number of children younger than 18 years, education, employment, and family income; women were also asked if they had a regular healthcare provider. Physical activity was assessed indirectly at baseline by aerobic fitness. A practical estimate of aerobic fitness was determined with the 2-minute step test, a part of the Senior Fitness Test recommended for use in low-fit older adults.<sup>33</sup> Scores are classified into 6 age-adjusted rankings of fitness (<10th, 10th–24th, 25th–49th, 50th–74th, 75th–90th, >90th). The cut points were extrapolated from normative scores for community-residing adults aged 60 to 94 years.<sup>33</sup>

### Cardiovascular Risk Factors

Hypertension was identified by responding yes to the question “Are you currently taking prescribed medication for your blood pressure?” Hypertension was also identified as having a mean systolic BP 140 mm Hg or greater or mean diastolic BP 90 mm Hg or greater. This is consistent with the hypertension definitions of NHANES, whose findings we list to provide context.<sup>2</sup> The equipment used and procedures for measuring hypertension are listed in Table 1.

Hypercholesterolemia was identified by responding yes to the treatment question “Are you currently taking prescribed medication for your blood cholesterol?”<sup>2</sup> In addition, hypercholesterolemia was identified by having an LDL level of 130 mg/dL or greater.<sup>2</sup> This definition varies somewhat from NHANES comparative data,<sup>3</sup> which set LDL thresholds for hypercholesterolemia based on an algorithm of the person’s history of hypercholesterolemia, number of CVD risk factors, and Framingham risk equation.<sup>2</sup> The cut-points we set for high total cholesterol ( $\geq 200$  mg/dL) and low HDL cholesterol (<40 mg/dL) were consistent with NHANES. The equipment used and procedures for measuring BP and cholesterol are listed in Table 1.

Additional questions related to CVD risk factors included current smoking and presence of diabetes. Women were considered a current smoker if they responded yes to the question “Have you smoked in the past

**TABLE 1** Equipment and Procedure for Measuring Cardiovascular Risk Factors

Measure	Equipment	Procedure
Blood pressure	Omron HEM-907XL automated BP machine (Omron, n.d.) Validated by mercury sphygmomanometer comparisons <sup>49</sup>	Seated at rest for 15–30 min Confirmed no ingestion of caffeine or smoking within 15 min 3 recorded from the arm with the highest blood pressure <sup>50</sup>
Cholesterol	Cholestech LDX machine <sup>51</sup> Quality control samples analyzed with each new shipment and lot of reagents	Fasting fingerstick blood samples Confirmed fasting for 4 h
Body composition	Weight using Seca Robusta 813 High-Capacity Digital Scale <sup>52</sup> Standing height using a stadiometer	Light clothing and no shoes Reported to the nearest 0.20 lb

12 months?” They were considered diabetic if they responded yes to the question “Do you have diabetes?” Body composition was assessed by measuring body mass index (BMI). Consistent with NHANES, overweight was a BMI of 25 kg/m<sup>2</sup> or greater to less than 30 kg/m<sup>2</sup> and obesity was a BMI of 30 kg/m<sup>2</sup> or greater. The equipment used and procedures for measuring body composition are provided in Table 1.

### **Awareness, Treatment, and Control of Hypertension and Hypercholesterolemia**

All women identified as having hypertension were classified into subgroups based on awareness, treatment, and control—defined the same as in NHANES.<sup>2</sup> Awareness of hypertension was defined as responding yes to the question “Have you ever been told by a healthcare professional that your blood pressure was high?” Treatment of hypertension was based on a yes response to currently taking medication for their BP. Overall hypertension control was defined as a systolic BP less than 140 mm Hg and a diastolic BP less than 90 mm Hg. On the basis of having hypertension, we looked at the percentage who were aware (total number aware/total number with hypertension), treated (total number treated/total number with hypertension), and controlled (total number controlled/total number with hypertension). Furthermore, on the basis of a yes response to awareness, we looked at the percentage of aware women who were treated for hypertension (number treated/number aware); and on the basis of a yes response to treatment, we looked at the percentage of treated women whose BP was controlled (number controlled/number treated).

All women identified as having hypercholesterolemia were also classified into subgroups based on awareness, treatment, and control. Consistent with NHANES,<sup>3</sup> awareness of the presence of hypercholesterolemia was defined by a yes response to the question “Have you ever been told by a healthcare professional that your blood cholesterol was high?” Treatment of hypercholesterolemia was based on a yes response to currently taking cholesterol-lowering medication.<sup>2</sup> Cholesterol control was defined as an LDL level of less than 130 mg/dL,<sup>2</sup> which varies somewhat from NHANES definitions (as noted above).<sup>3</sup> On the basis of having hypercholesterolemia, we looked at the percentage who were aware (total number aware/total number with hypercholesterolemia), treated (total number treated/total number with hypercholesterolemia), and controlled (total number controlled/total number with hypercholesterolemia). Furthermore, on the basis of a yes response to awareness, we looked at the percentage of aware women who were treated for hypercholesterolemia (number treated/number aware); and on the basis of yes response to treatment, we looked at the percentage of treated women whose hypercholesterolemia was controlled (number controlled/number treated).

The specific name, dosage, and frequency of antihypertensive and/or cholesterol-lowering medication were obtained by asking the women to bring all medications to the baseline health assessment. Antihypertensive agents were classified as diuretic, renin-angiotensin system blocker, calcium channel blocker,  $\beta$ -adrenergic blocking agent,  $\alpha$ -adrenergic blocking agent, central acting agent, or vasodilator. Cholesterol-lowering medications were classified as a statin, fibrate, or ezetimibe.

### **National Data Samples**

Every year, the American Heart Association, along with government agencies such as the Centers for Disease Control and Prevention and the National Institutes of Health, compile the most recent statistics on heart disease, stroke, and other vascular diseases and their risk factors.<sup>2</sup> Much of the data come from NHANES,<sup>2</sup> which, each year, assesses the health and nutritional status of about 5000 persons located in counties across the United States. Prevalence data are given for adults 18 years or older by race/ethnicity and sex, providing a standard against which to consider our study sample in terms of CVD risk. Prevalence data in the document also come from the National Health Interview Survey (eg, smoking), which monitors the health and behavior of the US population.

We present our sample of African American women baseline CVD risk data against the backdrop of national data on the following risk factors in African American women: BP, cholesterol, smoking, diabetes, and body composition.<sup>2</sup> In addition, our data on awareness, treatment, and control of hypertension for African American women are presented along with a look at national data for hypertension for African American women<sup>2</sup> and hypercholesterolemia for African American men and women combined (because this measure is aggregated between both sexes in national reporting).<sup>3</sup>

### **Analyses**

Frequencies, means, and standard deviations were used to describe the sample demographic characteristics; CVD risks; and awareness, treatment, and control of hypertension and hypercholesterolemia.  $\chi^2$  Goodness-of-fit analyses were conducted with the dichotomous CVD risk variables; awareness, treatment, and control findings; and proportions reported by national samples.<sup>3,34</sup> One-sample *t* tests were conducted for the continuous risk factor variables, such as hypertension and hypercholesterolemia.

### **Results**

The mean age of participants eligible for the Women’s Lifestyle Physical Activity program was 53 years (range,

40–65 years). About one-third were married (32.8%), and 36.4% had at least 1 child younger than 18 years. Nearly half of the women had a college degree (49.0%). Three-fourths were employed (74.0%). Family income was as follows: 13.1% less than \$20 000, 26.3% \$20 000 to \$39 999, 22.3% \$40 000 to \$59 999, 17.0% \$60 000 to \$79 999, and 21.2% \$80 000 or greater. Thirteen percent of the women had no healthcare provider. Aerobic fitness based on the 2-minute step test revealed the following rankings: 32.6% lower than 25th percentile, 38.7% 25th to 49th percentile, 22.6% 50th to 74th percentile, and 6.1% 75th percentile or higher.

### Cardiovascular Risk Factors

Of the 297 women eligible for the Women's Lifestyle Physical Activity Program, 173 (58.2%) had hypertension, 101 (38.3%) had hypercholesterolemia, and 30 (10.1%) were currently smoking (Table 2). Almost 14% had diabetes, and most (88.5%) were obese (BMI  $\geq 30$  kg/m<sup>2</sup> or waist circumference  $>35$  in. or both), indicating high or very high risk for CVD.<sup>35</sup> A total of 282 (94.9%) women had 1 or more CVD risk factors, 205 (69.1%) women had 2 or more CVD risk factors, and 94 (31.7%) women had 3 or more CVD risk factors.

Examination of the CVD risk factors for the women eligible for this study versus national data for African American women older than 18 years revealed that they

were significantly more likely to have hypertension and to be overweight or obese (Table 2). They were also significantly more likely to have an HDL cholesterol level less than 40 mg/dL. However, fewer women had a total cholesterol level of 200 mg/dL or greater and LDL cholesterol level of 130 mg/dL or greater than the African American women in the NHANES data. Their risk for hypercholesterolemia, however, mirrored that for women in NHANES, as did their risk for diabetes. Smoking rates were lower in our sample than in national data for African American women.

### Awareness, Treatment, and Control of Hypertension and Hypercholesterolemia

The profiles of women in our study with hypertension mirrored those for African American women in NHANES for hypertension awareness, treatment, and control (Table 3). Most women in both the study sample and NHANES who were aware of having hypertension were being treated (96.3% and 93%, respectively). In both the study sample and NHANES, the percentage of women treated for hypertension for whom it was controlled was under 70%. In our study sample, of the 147 women on antihypertensive medication, 146 (99.3%) brought their medications to the health assessment. Most were taking diuretics (64.4%), followed by renin-angiotensin system blockers (52.7%), calcium channel

**TABLE 2** Cardiovascular Risk Factors and Awareness, Treatment, and Control of Hypertension and High Low-Density Lipoprotein Cholesterol by the Study Sample (N = 297) and National Data for African American Women or Men and Women Combined

	Study Sample		National Data <sup>a</sup>	P
	n	Data		
Cardiovascular risk factors				
Blood pressure, mean (SD), mm Hg				
Systolic blood pressure	297	126.8 (15.1)	NA	
Diastolic blood pressure	297	80.2 (9.1)	NA	
Hypertension, n (%)	297	173 (58.2)	46.1%	<.001
Cholesterol, mg/dL				
Total cholesterol $\geq 200$ mg/dL, n (%)	296	88 (29.7)	40.7%	<.001
HDL, mean (SD), mg/dL	297	52.4 (16.1)	M = 57.4	<.001
HDL $<40$ mg/dL, n (%)	295	74 (25.1)	10.3%	<.001
LDL, mean (SD), mg/dL	264	107.1 (34.8)	M = 115.5	<.001
LDL $\geq 130$ mg/dL, n (%)	264	66 (25.0)	33.6%	<.01
Hypercholesterolemia <sup>b</sup> , n (%)	264	101 (38.3)	34.2% <sup>c</sup>	NS
Current smoking, n (%)	296	30 (10.1)	15.4% <sup>d</sup>	<.05
Diabetes, n (%)	297	41 (13.8)	14.6%	NS
Body composition				
BMI, mean (SD), kg/m <sup>2</sup>	297	35.5 (7.6)	NA	
Overweight and obesity ( $\geq 25$ kg/m <sup>2</sup> ), n (%)	297	281 (94.6)	81.9%	<.001
Obese ( $\geq 30$ kg/m <sup>2</sup> ), n (%)	297	222 (74.7)	57.5%	<.001

Abbreviations: LDL, low-density lipoprotein; HDL, high-density lipoprotein; NA, not available; NHANES, National Health and Nutrition Examination Survey; NS, not significant.

<sup>a</sup>National data are from NHANES 2009–2012 unless identified otherwise.

<sup>b</sup>Definitions vary slightly between data sets.

<sup>c</sup>NHANES 2009–2010 for African American women and men.

<sup>d</sup>National Health Interview Survey 2010–2012.

**TABLE 3** Awareness, Treatment, and Control of Hypertension and Hypercholesterolemia

Risk Factor	n	Percentage of Those With Risk Factor		Percentage of Those Aware/Treated <sup>a</sup>	
		Study Sample	National Data	Study Sample	National Data
Hypertension <sup>b</sup> (n = 173)					
Aware	153	88.4	88.5		
Treated	147	84.9	82.3	96.1	93.0
Controlled	89	51.4	55.9	60.5	67.9
Hypercholesterolemia <sup>c</sup> (n = 101)					
Aware	74	73.2	64.2		
Treated	34	33.0 <sup>d</sup>	63.8	45.9 <sup>d</sup>	99.4
Controlled	25	24.8 <sup>d</sup>	45.3	73.5	71.0

Abbreviation: NHANES, National Health and Nutrition Examination Survey.

<sup>a</sup>Percentage of aware who were treated and percentage of treated who were controlled.

<sup>b</sup>National Data from NHANES 2007–2012.

<sup>c</sup>National Data from NHANES 2009–2010 for African American women and men combined.

<sup>d</sup> $P < .001$ .

blockers (34.2%), and  $\beta$ -blockers (17.1%). The number of different drug classes the women were prescribed ranged from 1 to 3 (mean, 1.7). Of the 58 women with treated but uncontrolled hypertension, 31 (53%) were on medications from 2 or more drug classes.

Examination of awareness, treatment, and control of hypercholesterolemia for the women in this study compared with the NHANES data for African Americans (men and women combined) revealed that they mirrored one another for awareness (see Table 3). Compared with NHANES, significantly fewer women in this study were being treated for elevated cholesterol, and significantly fewer had controlled hypercholesterolemia. Fewer than half of the women who were aware of having hypercholesterolemia were being treated, which differs significantly from NHANES (men and women combined), where nearly all of those aware of having hypercholesterolemia were treated. However, across both samples, approximately 70% of those treated for hypercholesterolemia were controlled. Of the 34 women taking medication for hypercholesterolemia, all brought their medications with them. The most frequent medication taken for hypercholesterolemia was a statin (94.1%).

## Discussion

Of the 297 women in this sample, all of whom were recruited from community settings, 95% represent individuals in need of CVD risk reduction. Of the 5 key CVD risk factors examined in this study, 2 showed similarity between our sample and the national sample (hypercholesterolemia and diabetes), 2 showed our sample to have higher risk (hypertension and obesity), and 1 showed a lower risk (smoking). Overweight and obesity were found in 94.5% of the sample; these are associated

with downstream sequelae of hypertension, hypercholesterolemia, and diabetes.

Our sample, despite having higher prevalence of hypertension, was similar to NHANES findings in awareness, treatment, and control of hypertension. In both samples, most women with hypertension were aware that they had the condition and were being treated, consistent also with findings from the Jackson Heart Study of urban African Americans.<sup>36</sup> Strikingly, fewer than 70% of the women in both samples receiving treatment for hypertension had adequately controlled BP. Consistent with Joint National Committee 7 guidelines,<sup>37</sup> most women with hypertension in our sample were prescribed 2 or more medications for BP control. We speculate that most women took their medications on the day of their baseline examination because they received a reminder call to do so. The women in our sample with inadequately controlled BPs may have required more medication.

Our sample had lower HDL cholesterol levels (which confers higher CVD risk) but lower levels of LDL cholesterol (which confers lower CVD risk). Despite these mixed results, most CVD risk indicators reported here were the same or worse for our sample compared with national samples, indicating a high level of CVD risk in this sample of inactive, urban, midlife African American women. The percentage of women having 2 or more CVD risk factors was close to the level of risk found in African American women who had already sustained a cardiovascular event (69.1% vs 80.5%, respectively).<sup>38</sup> Although the prevalence of hypercholesterolemia in our sample was similar to that in NHANES, treatment was significantly lower than in NHANES, which may explain the lower percentage of participants with controlled hypercholesterolemia in our sample.<sup>3</sup>

We reviewed 11 previous studies for CVD risk factors of participants in physical activity intervention studies that included primarily African American women.<sup>23,39–48</sup> Although not looking for one-to-one correlations, we were interested in the sample characteristics because these studies were similar to ours. Although those studies did not measure the exact set of CVD risk factors that we did, the women in our sample seem to be at somewhat higher CVD risk. Ten earlier studies that included baseline BMI reported a mean range of 27.9 to 34.7 kg/m<sup>2</sup>,<sup>23,40–48</sup> whereas the baseline mean BMI for our participants was 35.5 kg/m<sup>2</sup>. Mean baseline systolic and diastolic BPs in our sample were in the prehypertensive stage (126.8 and 80.2 mm Hg, respectively), similar to the earlier studies reporting this information (overall median, 128.6 and 78 mm Hg, respectively). However, the percentage of women in our study with hypertension (58%) was slightly above the median percentage of the 5 studies reporting hypertension (median, 53%; range, 34%–72%).<sup>23,40,42,43,45</sup> This happened despite our exclusion of women who had a

### What's New and Important

- Urban, community-dwelling, inactive midlife African American women may have greater CVD risk than national samples.
- In this population, hypertension is not always controlled even when treated, and despite awareness of hypercholesterolemia, it is not always treated.
- Healthcare professionals need to be aware of the high incidence of CVD risk factors in this population and focus on CVD risk reduction interventions for them.

systolic BP of 160 mm Hg or higher or a diastolic BP of 100 mm Hg or higher. We believe our sample having higher CVD risk (therefore most in need of intervention) was a result of exclusion of only women with very high levels of CVD risk factors or known CVD that could cause an adverse event during physical activity.

This report has limitations. No direct statistical comparisons were done between our exact study sample baseline data and those of others. This is because our study sample and measures did not correlate exactly with other studies. Our comparison NHANES data were for adults 18 years or older rather than the more specific characteristics of women in our study. Unlike the national data on heart disease, stroke, and CVD risk, our study included only sedentary women and not women who routinely participate in PA. This was verified by the low aerobic fitness levels of the women (71.3 % below the 50th percentile) before beginning the Women's Lifestyle Physical Activity program. Thus, this may contribute to the women having higher risk factor profiles than reported in the national data for African American women. However, we expect some useful perspective is achieved by showing our findings against the backdrop of other databases, such as NHANES. For example, most NHANES participants who screened positive for hypertension and hypercholesterolemia would likely be in the same age range as our participants.

### Implications for Practice

Our findings show high CVD risk affecting community-dwelling, urban, midlife African American women and reveal the high prevalence of poor control of hypertension and treatment of hypercholesterolemia in this sample. These women are at particularly high risk for stroke and premature CVD. These data show that healthcare professionals need to be aware of the high incidence of CVD risk in this population and focus on CVD risk reduction interventions for them. Opportunities exist in traditional healthcare settings, health fairs, and other community events, churches, and through community-based research programs. Once identified, high-risk women have an urgent need for pharmacological and lifestyle interventions. Healthcare practitioners must deliver guideline-recommended care to ensure control

of hypertension and hypercholesterolemia, while addressing lifestyle-related risk factors through targeted lifestyle interventions such as physical activity. Opportunities must be taken to educate African American women about their heightened risk for CVD and stroke and to encourage them to engage in prevention strategies. As our study suggests, given the opportunity, many community-dwelling African American women at elevated risk for CVD and stroke are willing to participate in a physical activity intervention.

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