

# Blood Pressure Measurement and Antihypertensive Treatment in a Low-Income African-American Population

## ABSTRACT

**Objectives.** The purpose of this study was to describe blood pressure measurement and hypertension treatment in an inner-city African-American community.

**Methods.** A random-digit dialing telephone survey of adults more than 18 years of age was carried out in 12 predominantly African-American zip code areas in Houston, Texas.

**Results.** More than 90% of subjects reported a blood pressure measurement within the past 2 years, and 87% of known hypertensives reported current medication use.

**Conclusions.** Further improvements in hypertension control among African Americans in this country are likely to depend primarily on changes in diagnosis and management practices of health care providers and on maintaining primary care access for all socioeconomic groups. (*Am J Public Health*. 1998;88:292-294)

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## Introduction

Hypertension is more prevalent in African Americans than in Whites or Hispanics.<sup>1</sup> Consistent with the increased prevalence of this risk factor, African Americans have an approximately 50% greater risk of heart disease mortality than Whites, along with a 100% greater risk of stroke mortality.<sup>2,3</sup> Although both African Americans and Whites have shown great improvements in awareness and control of hypertension over the last 30 years, the prevalence of hypertension and associated morbidity and mortality remain significantly higher in African Americans.<sup>1,4</sup> Therefore, there is an ongoing need to monitor awareness and control and to improve hypertension-related health outcomes in this group.

Socioeconomic factors associated with race have been proposed as barriers to hypertension control, especially among inner-city African Americans.<sup>5</sup> Not having a regular source of primary care has been consistently found to be associated with untreated and uncontrolled hypertension among inner-city minorities.<sup>6,7</sup> Failure to remain under treatment has also been cited as an obstacle to adequate blood pressure control.<sup>8-10</sup>

In order to determine the distribution of factors related to hypertension control in a population of African Americans of low socioeconomic status in Houston, Tex, we carried out a random-digit dialing telephone survey that elicited prevalence of self-reported hypertension and current treatment, health care access, and blood pressure measurement patterns in a geographically defined inner-city area. The random-digit dialing method has been shown to be an efficient and reliable way to collect health information.<sup>11,12</sup> Since approximately 89% of households in the target population had telephones, this method was selected to provide data for the general African-American community. However, to obtain estimates of

the phone survey parameters in persons likely to be underrepresented using random-digit dialing, we administered the same telephone survey questions to a sample of African-American patients 18 years old or older in the emergency center of a large public hospital.

## Methods

The target population for the phone survey resided in 12 inner-city zip code areas in Houston, Tex. The adult African-American population was estimated to be 149 190 in 1990 (77% of the total adult population). The median household income of the survey area was \$19 900, as compared with \$30 970 for the city as a whole.<sup>13</sup> Details of the random-digit dialing methodology and response rates have been reported elsewhere.<sup>14</sup>

Self-reported hypertension was assessed with two items from the Behavioral Risk Factor Surveillance System questionnaire: "Have you ever been told you have hypertension, sometimes called high blood pressure?" and "Have you been told two or more times by a health professional that you have hypertension?" Respondents who had ever been told they were hypertensive were also asked whether they had ever taken medication prescribed by a doctor for

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hypertension, whether they were presently taking medicine prescribed by a doctor for hypertension, and the interval since their last visit to a physician for hypertension treatment. All respondents were asked (1) the interval since their last blood pressure measurement by a health professional, (2) the type of health care facility used for non-emergency health problems, (3) type of health insurance, (4) employment status, and (5) educational level.

The same questions regarding hypertension awareness and treatment, blood pressure screening, and sociodemographic data included in the random-digit dialing phone survey were administered by an interviewer to a consecutive sample of patients from the phone survey zip code areas who presented to the emergency center of the 580-bed public hospital that serves the community covered by the survey. All medical and surgical patients from the target zip code areas who presented to the emergency center over a 3-month period and met enrollment criteria ( $n = 493$ ) were invited to participate, but the analysis was restricted to the 263 patients who completed the interview and identified themselves as African American.

Consistent with national survey methods, hypertensives were defined as persons who had been told two or more times that they were hypertensive.<sup>15</sup> Being under treatment for hypertension was defined as currently taking antihypertensive medication and/or having seen a physician within the past year for hypertension. The proportions meeting this definition were calculated for the following age groups: 18 to 34 years, 35 to 49 years, 50 to 64 years, and 65 years or more.

Analyses, which included only individuals who identified themselves as Black/African American, were carried out with the STATA package for personal computers.<sup>16</sup>

## Results

Ninety-two percent of 4 081 household phone contacts resulted in a completed interview.<sup>14</sup> Of those persons who completed the phone interview, 3 273 (87%) identified themselves as African American.

The distribution of responses to the survey questions is shown in Table 1. High levels of recent blood pressure measurement were reported. Persons who had never been told they were hypertensive were less likely to have had a blood pressure check within the past year (79% of those never told vs 87% of those told at least once;  $P <$

**TABLE 1—Distribution of Sociodemographic, Health Care Use, and Hypertension Awareness Variables in Telephone Survey and Emergency Center Respondents: Houston, Tex, 1994**

	Telephone Survey Sample ( $n = 3273$ ), %	Emergency Center Sample ( $n = 263$ ), %
<b>Sociodemographic variables</b>		
Age group, y		
18–34	30	39
35–49	27	34
50–64	23	19
65 +	14	6
Missing/unknown	6	2
Gender		
Male	33	53
Female	66	47
Education		
Less than high school	23	34
High school graduate	60	61
College graduate	16	2
Missing/unknown	1	5
Employment		
Full time	45	22
Part time or unemployed	54	74
Missing/unknown	1	4
Telephone coverage <sup>1</sup>		
Yes	...	73
No	...	23
Missing/unknown	...	4
<b>Health care access and use</b>		
Health insurance		
None	23	48
Private	48	8
Public	28	44
Missing/unknown	1	0
Primary Care Use		
Yes	79	53
No	20	46
Missing/unknown	1	1
<b>Hypertension awareness</b>		
Years since last blood pressure check		
<1	80	79
1–2	12	11
>2	7	2
Missing/don't remember	1	7
Self-reported hypertension		
Told once		
Yes	34	35
No	65	65
Missing/don't remember	1	0
Told twice		
Yes	27	28
No	73	72

<sup>a</sup> By definition, 100% of phone survey respondents had telephones. Based on 1990 census estimates, 89% of households in the phone survey target area had telephones.

.01) but no less likely to have been measured within the past 2 years (93% vs 95%;  $P > .05$ ). In persons with definite hypertension, very high levels of medication use and physician monitoring were reported. More than 90% of respondents in each age and sex group examined reported currently

being under treatment (i.e., taking medication or having had a hypertension-related doctor visit within the past year). The lowest reported treatment rate was 91% in Black men 35 to 49 years old.

Only 8% of hypertensives had not seen a physician in the past year for a

hypertension-related visit. Ninety-one percent of definite hypertensives had been prescribed medication at some time, and, of these individuals, 87% were currently taking medication. Only 6.6% had self-discontinued their medications, and an equal percentage reported being taken off medications by a physician. Persons told only once they were hypertensive, who could represent dropouts or underusers of health care, also reported high levels of blood pressure monitoring and treatment.

The emergency center sample had a younger age distribution and a greater proportion of males than the random-digit dialing sample (Table 1). As expected, these individuals were less likely to have a telephone, be employed, have completed high school, and have private health insurance than those in the general community sample. Although they reported similar blood pressure measurement frequencies similar to those of the random-digit dialing sample, aware hypertensives in the emergency center sample were less likely to report being under drug treatment than those in the phone survey sample (69% and 87%, respectively). Likewise, fewer aware emergency center hypertensives reported a physician visit within the past year (83% vs 91%). Approximately 15% of the emergency center aware hypertensives could be labeled as "treatment dropouts" (individuals who were not currently taking antihypertensive medication and had not seen a physician for hypertension in more than 1 year). Seventy percent of these dropouts were female, and 89% were less than 50 years old.

## Discussion

This random-digit dialing telephone survey of an African-American community in a large southwestern city found high rates of blood pressure measurement across all subcategories of respondents. Among aware hypertensives, high levels of medication prescription and compliance were reported. Only 5% of those who had ever been prescribed antihypertensive medications had dropped out of care. In all age-sex groups, including men 18 to 34 years old, the proportion of individuals taking action to control their blood pressure was greater than that reported in an analysis of National Health Interview Survey data<sup>4</sup>

and met the year 2000 health objectives for blood pressure control.<sup>17</sup> If hypertension screening efforts are still required, it appears that they should be restricted to specific high-risk groups such as those included in the public hospital emergency center sample.

Although the random-digit dialing phone survey methodology yields only self-report data and excludes persons without telephones, the response rate in our study was high, and the sample of public hospital emergency center users provided an assessment of the distribution of study variables in a subpopulation underrepresented through the telephone survey. Furthermore, in a subset of 60 subjects included by chance in the random-digit dialing survey who receive their clinical care in the health system in which the investigators work, self-reported medication use was verified in 86% of the cases through examination of clinic pharmacy records. Thus, we believe our results are a valid reflection of current hypertension awareness and treatment patterns in this inner-city African-American community.

Many clinicians trained in inner-city hospitals with large African-American populations recall patients such as those described in a study by Bennett and Shea: persons aware of hypertension, with multiple hospital visits for severe hypertension, and likely not to be followed in primary care settings.<sup>18</sup> Our study suggests that this stereotype of the inner-city African-American hypertensive represents the exception rather than the rule. However, public hospital emergency center users still represent a group at excess risk for undertreatment of hypertension. □

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