

Preventive Services for Rural and Urban African American Adults

William J. Hueston, MD; Elizabeth T. Hubbard, BA

Background: Studies have shown that African Americans and rural patients receive fewer preventive services than other patients.

Objective: To compare the use of preventive services by African Americans in urban and rural settings to determine if race and rural residence were additive risks for not obtaining preventive services.

Methods: Three hundred African American patients seeking care in family practices in South Carolina were surveyed about preventive health care.

Results: Rural and urban African Americans were equally likely to know about preventive services and be up-to-

date on receiving these services. In both practices, those with lower incomes were less likely to be up-to-date. Patients seen in the urban setting were more likely to receive counseling regarding exercise and smoking than those in the rural practice (87% vs 71%, $P = .003$).

Conclusions: For both urban and rural African American patients with access to primary care physicians, preventive service use is high. The best predictor of poor compliance with preventive service recommendations was low income, suggesting that a lack of access to care is the primary reason why rural and African American populations do not receive adequate preventive health care.

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DESPITE physician and patient acknowledgments that health promotion and disease prevention are important aspects of primary care, rates of compliance with health screening and detection protocols remain disappointing.¹⁻⁴ While suboptimal rates of preventive services have been reported for all populations, the underuse of preventive services is especially problematic for minority and other underserved populations.⁵⁻¹⁰ Poor access to health care providers, more severe comorbid conditions that compete with prevention for patient and physician attention, and possible cultural or attitudinal factors may contribute to the observed differences in preventive services use.

Preventive services are also a challenge to rural health care providers.^{11,12} Rural residents are less affluent, older, and tend to report less access to health care providers,^{11,13} all of which may contribute to difficulty in obtaining preventive services. Participation in preventive services by rural elderly was discouraged by Medicare payment rules.¹⁴ Until 1997, physicians were not compensated for provid-

ing preventive services for Medicare recipients and older patients had to pay for the services themselves. Second, until recently, Medicare payment was not aligned with recommended guidelines for screening frequency that have been adopted by others. These policies made preventive services expensive for elderly patients. Cost is a major issue for poor and older patients. For rural Appalachian patients, cost was a major consideration in the failure to receive preventive health services, as was a lack of knowledge of which services were indicated.¹² For rural African American patients, these difficulties may be even more pronounced.

The aim of this study is to explore disease prevention practices of African American patients in South Carolina who have access to health care. Because cultural differences, availability of services, and the knowledge about preventive services may vary between urban and rural populations, we will also explore whether any differences exist between urban and rural patients in perceived availability of services, compliance with preventive guidelines, and attitudes about early detection and screening.

From the Department of Family Medicine, Medical University of South Carolina, Charleston.

SUBJECTS AND METHODS

We recruited patients from 2 primary care centers in urban (Charleston) and rural (Denmark) South Carolina. The sites were more than 100 miles apart to ensure that little crossover would occur between patients. According to 1997 US Census Bureau estimates, Charleston County (urban sites) has 316 500 residents, 40% of whom are African American. Two tertiary care centers and 3 additional community hospitals serve the city and surrounding suburbs. Denmark is located in Bamberg County, which had a 1997 estimated total population of 16 500, 61% of whom are African American. There is 1 community hospital in Bamberg County, located 7 miles from Denmark. In 1997, both Charleston (51%) and Bamberg (53%) counties had slightly more women than men.

The rural practice was staffed by 2 physicians and a physician assistant. The urban clinic was staffed by 12 physician faculty members, 24 residents, a nurse practitioner, and a physician assistant from the Medical University of South Carolina, Department of Family Medicine, Charleston. At these practices, a random sample of patients who sought care during a 1-month period in the summer of 1998 were approached and invited to participate in a brief survey about their health care. The sample was chosen by randomly selecting 10 patients from the health care providers' schedules every day using a different random number sequence for each day of the week. Using the schedule available at the beginning of the day also avoided selecting patients who had acute problems (chest pain, laceration, etc) for which a survey would not be appropriate.

Three African American college students and a medical student who had been trained by one of the investigators administered the survey. Interviewers first identified whether a patient was African American and between the ages of 18 and 70. If the patient met these eligibility criteria, the survey was administered following the defined

format for asking questions and offering prompts. Each question included 4 to 7 options for response or other if none of these responses was appropriate. The survey contained 35 items and focused on knowledge of health prevention tests, personal use of the test, other factors related to health use (reason for visit, frequency of seeing the physician, time to wait for the physician, etc), and demographics. Because the waiting time before patient visits was limited, rather than ask about every possible preventive service appropriate for a particular age, we focused on one sentinel preventive service for each of the following sex and age categories: women aged 50 years and older (Papanicolaou smear in the last 3 years), women younger than 50 years (Papanicolaou smear in the last 3 years), men aged 45 years and older (cholesterol in the last 5 years), and men younger than 45 years (tetanus shot in last 10 years). If a patient had received this service, they were considered up-to-date; all others were considered not up-to-date. We also asked whether patients exercised (defined as regular exercise a minimum of 3 times a week) or smoked and, as a measure of health risk counseling, whether smoking or exercise ever had been discussed by their health care provider.

At each site, recruitment continued until a sample size of 150 was obtained. This required 6 weeks at the urban site and 3 weeks at the rural site. The sample size was based on estimates that 25% of urban respondents and 50% of rural respondents lack at least 1 preventive service. In this case, a sample of 150 at each site would achieve a power of 80% with an α of .05. In the rural site, 100% of patients agreed to participate. At the urban site, 33 (18%) of the 183 patients who were approached declined to participate. The patients who did not participate were not statistically different in sex or age than those who did participate.

Data were analyzed using commercial software (Epi-Info Software version 6.0; Centers for Disease Control and Prevention, Atlanta, Ga). χ^2 Was used for all comparisons of discrete variables and *t* test was used for continuous variables such as age. Statistical significance was set at $P < .05$.

RESULTS

The samples at the 2 study sites differed in several respects. Patients from the rural setting were more likely to be male, unmarried, have fewer children, and have attained lower educational levels than those from the urban setting (**Table 1**). Patients in the rural setting also appeared to have longer relationships with their physician and were less likely to seek care at another health care facility.

When we inquired about preventive care services offered at the sites and patients' understanding of the services, we found that almost all patients (92% at each site) stated that their physicians discussed preventive services with them. When we asked about specific services, we found that between 93% and 100% of patients stated that they understood the meaning of a breast examination, mammogram, Papanicolaou smear, cholesterol check, blood pressure check, and tetanus shot when asked about the tests that were appropriate for their age and sex.

In addition to expressing knowledge about preventive services, patients were very likely to have received all of the sentinel tests in the appropriate period recommended for their age and sex. Overall, there was no difference between the rural and urban sites in the percentage of patients who were up-to-date (95% for urban patients vs 93% for rural patients, $P = .45$). Additionally, the use of services was not associated with age ($P = .90$), sex ($P = .24$), insurance status ($P = .34$), marital status ($P = .48$), or educational level attained ($P = .35$) by patients. Patients with chronic diseases were just as likely as those without chronic diseases to be up-to-date (93% vs 95%, $P = .59$), as were those who had the same physician for 5 years or less (95% vs 93%, $P = .59$), 6 to 10 years (94% vs 93%, $P = .83$), or more than 10 years (92% vs 93%, $P = .81$). The only variable that was associated with differences in the use of preventive services was annual family income. Patients whose income was less than \$10 000 were less likely to be up-to-date compared with all others (86% vs 98%, $P = .004$).

Table 1. Description of the Study Populations at the Urban and Rural Sites*

	Urban Site (N = 150)	Rural Site (N = 150)	P
Male sex	33 (22)	63 (42)	.003
Age, mean (SD), y	45 (17)	45 (19)	.90
Married	71 (47)	53 (35)	.05
Insurance			
Private	88 (59)	67 (45)	.004
Medicare/Medicaid	48 (32)	75 (50)	
None/do not know	14 (9)	8 (5)	
Children, mean (SD)	2.8 (1.9)	2.3 (2.1)	.009
Education level			
<High school	32 (21)	50 (33)	.003
High school diploma	60 (40)	44 (29)	
Some college	58 (39)	56 (38)	
Care from regular provider, y			
1-5	88 (59)	58 (39)	.009
6-10	34 (23)	72 (48)	
>10	28 (19)	20 (12)	
Patients with chronic disease	71 (47)	64 (43)	.42
Annual family income, \$			
<10 000	50 (33)	65 (43)	.04
10 000-19 999	42 (28)	31 (20)	
20 000-29 999	32 (21)	29 (19)	
30 000-39 999	14 (9)	19 (13)	
≥40 000	12 (8)	5 (3)	

*All data are presented as number (percentage) unless otherwise indicated.

Table 3. Healthy Behaviors and Counseling by Providers at Rural and Urban Sites*

	Urban Site (N = 150)	Rural Site (N = 150)	P
Current smokers	34 (23)	28 (19)	.50
Exercise frequency			
Every day	55 (37)	51 (34)	.06
3 Times a week	24 (16)	39 (26)	
Once a week	16 (10)	23 (15)	
Once a month	20 (13)	10 (7)	
Do not exercise	35 (23)	27 (18)	
Received exercise or smoking counseling	131 (87)	106 (71)	.003

*All data are presented as number (percentage).

We also asked patients what barriers they perceived that may have kept them from obtaining any of the preventive services they thought they should have had (**Table 2**). Only a quarter of the patients thought that any barriers existed in obtaining preventive services. Interestingly, the most common reason cited by those who had failed to receive a screening test was “no specific reason.”

Finally, we looked at smoking and exercise counseling by physicians at both practices. Most patients stated that they were not smokers and that they exercised at least 3 times a week. A greater percentage of patients at the urban clinic, however, stated that their health care provider had addressed these 2 issues with them (**Table 3**).

Table 2. Uses of Preventive Tests and Reasons Cited by Patients for Failing to Receive Screening Tests in African American Patients*

	Urban Site (N = 150)	Rural Site (N = 150)	P
Patient receiving sentinel tests			
Papanicolaou smear in last 3 y (women <age 50 y)	68 (93)	41 (89)	.41
Mammogram in last y (women >age 50 y)	40 (93)	35 (85)	.31
Cholesterol screening in last 5 y (men >age 45 y)	16 (94)	27 (84)	.51
Tetanus shot in last 10 y (all respondents)	123 (82)	119 (79)	.46
Satisfaction with preventive services			
Satisfied with preventive services obtained	137 (91)	138 (92)	.99
Felt they had received tests appropriately	132 (88)	131 (87)	.99
Reason why any preventive test not received			
No specific reason for not getting a test	28 (19)	33 (22)	.47
Did not think test was necessary	3 (2)	4 (3)	.99
Was not aware test was needed	3 (2)	2 (1)	.99
Did not have transportation to get a test	1 (1)	2 (1)	.99
All others	2 (1)	2 (1)	.99

*All data are presented as number (percentage) unless otherwise indicated.

COMMENT

In contrast to other studies that have shown disappointing rates of use of preventive services by African Americans, this study suggests that in some settings, African American patients are knowledgeable of preventive services and interested in obtaining them. The observation that minority patients in these 2 clinics support preventive services and desire health maintenance supports previous work with middle-income African American women that suggested that many study participants already participate in activities that they perceive as healthful.⁶ When given adequate access to care, as was the case for participants at the 2 sites in this study, it appears that African American patients in both urban and rural settings and across most socioeconomic strata will obtain recommended preventive services. Quite surprisingly, use of preventive services was not related to educational level attained, marital status, or insurance status. This suggests that in both the rural and urban setting, preventive services were widely available and accepted by patients.

As noted above, this study only included patients who appeared to have access to care. The fact that our sample was composed of patients who were waiting for an appointment with a physician suggests that access was not an insurmountable barrier for them. Previous studies suggest that access to care is a major factor contributing to underuse of preventive services in rural¹⁵ and minority populations.¹⁶ Lack of access to care can lead to dependence on public sector support for basic health services including prevention, which has been associ-

ated with reductions in achieving optimal preventive service use.¹⁷ The fact that patients in this study who had access to private physicians' care had excellent preventive service use suggests that increasing access to care may be an important factor if preventive services for minority and rural populations are to increase to recommended levels.⁵

For those participants who did obtain preventive services but whose compliance was suboptimal, we found no specific cause that would be amenable to interventions. Most patients acknowledged that preventive services were important, but when asked why they did not obtain services that they thought they should have, almost 75% could not come up with a reason. This suggests that addressing the barriers to increasing compliance with preventive service recommendations in patients who do have access will be difficult and may require constant vigilance by health care providers to stress the importance of these services.

These conclusions must be interpreted in light of the limitations of the study design. Because these data were generated from a self-report survey without verification from patient records or other sources, patient responses could not be validated. Patients could have answered in the manner in which they felt was desired by the interviewers. Additionally, although assured confidentiality, patients might have worried that interviewers would alert the patient's health care provider that he or she was not up-to-date, which could have precipitated the health care provider recommending a test or a procedure. Second, the 2 practices involved in this study might have been unique. One was a residency training program in which each patient was reviewed by an attending physician, offering the opportunity for a second chance to remember preventive services. The second practice was run by 2 African American family physicians, which is not typical in a rural Southern county. The medical staff of this practice could attract patients who were more likely to comply with their physicians' advice than other practices.

Another limitation of this research is that we have no way of knowing whether and to what degree patient (as opposed to physician) attitudes, behaviors, and motivation about preventive services contribute to the underuse of such services. This study suggests that when the services are available, African American patients will take advantage of them. However, it may be that physicians in this study attracted a patient population that shared their attitudes toward prevention. More research in this area would be useful so that interventions in populations with lower preventive service use can be directed appropriately.

In summary, we found that in selected rural and urban practices in South Carolina, African American patients with access to medical care obtain preventive

services at a very high rate. This was true for both urban and rural patients. Because all patients in this study had some access to a health care provider, further research examining the effect of access to care on preventive service use may be helpful in uncovering the reasons for previous reports of underuse of preventive services in African American and rural patients.

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Corresponding author: William J. Hueston, MD, Department of Family Medicine, Medical University of South Carolina, 295 Calhoun St, PO Box 250192, Charleston, SC 29525 (e-mail: huestowj@muscc.edu).

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