Healthcare Practices among Blacks and Whites with Urinary Tract Symptoms

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Context: The reasons for African-American men to seek care for lower urinary care symptoms has not been determined due to sparse population-based data.

Objective: Our study examines the solicitation and receipt of medical care for urinary symptoms among racially oversampled elderly urban and rural cohort of African Americans and whites.

Design: Longitudinal analyses were conducted on five North Carolina counties through the Piedmont Health Survey of the Elderly Established Populations for the Epidemiological Study of the Elderly. In 1994, the analytic cohort included 482 African Americans and 407 whites; by 1998, 249 and 222, respectively.

Results: In 1994, 49.4% of African Americans presented with lower urinary tract symptoms compared to 56.8% of whites. By 1998, these percentages increased to 60.6% and 70.3%, respectively. African Americans reported more interference with activities of daily living than whites. African Americans were less likely than whites to have regular digital rectal exams (DRE) and were more likely to have never received a DRE at all. Additionally, elders with less educational attainment, those who smoked, those who delayed care quite often and those who used less-experienced physicians were less likely to receive regular DREs.

Conclusion: Poor health behavior has the greatest impact on healthcare seeking for lower urinary tract symptoms. These health behavior risk factors are systemic of a lack of health education. Increases in health education among African Americans regarding lower urinary tract symptoms may close the racial disparity in healthcare-seeking behaviors.

Key words: African Americans ■ healthcare ■ LUTS

INTRODUCTION

Lower urinary tract symptoms (LUTS) are exceedingly common in aging men and have a major impact on health-related quality of life and healthcare costs.[1,2] However, few population-based studies of LUTS in men have been performed. And, most studies have been restricted to predominately white populations. Thus, observations may not be generalizable to African-American men.[1]

The Olmsted County, MN study of urinary symptoms among white men has provided some of the most important and fundamental information on LUTS and prostate pathophysiology.[1,3] This study reports that approximately 33% of their sample has moderate-to-severe obstructive urinary symptoms. Moreover, the solicitation of medical care for urinary symptoms among white males has been demonstrated to be a function of symptom severity.[4]

In contrast, one of the first large studies of LUTS in a sample of African-American men [Genesee County, (Flint) MI] observed that 39.6% of participants had moderate-to-severe LUTS, and almost 35% reported being significantly bothered by these symptoms.[1] Despite these rates, few African-American men in the Flint study sought healthcare for urinary complaints.[1] While the findings of the Flint study provide insight into the magnitude of LUTS in African-American men, they also suggest that many African-American men with LUTS remain undiagnosed and untreated for clinically significant symptoms. Thus, the catalyst for LUTS healthcare seeking among African-American men has not been determined.[1]

Our study will examine the healthcare-seeking behavior for LUTS among a racially oversampled,

mixed urban/rural, elderly cohort of African Americans and whites. Community- and population-based studies of LUTS that include both African-American and white men may provide the basis for a better understanding of potential racial differences in the diagnosis and treatment of this condition. As a result, healthcare providers may be able to better interpret symptoms and improve the management of LUTS in African-American men.

Table 1. Distribution of elder and physician characteristics by elder race and year

Elder Characteristics	1994 (N=889) AA Elder N (%)	1994 (N=889) White Elder N (%)	1998 (N=471) AA Elder N (%)	1998 (N=471) White Elder N (%)	1994[a] P Value	1998[b] P Value	P Value[c]
N	482	407	249	222			
Mean Age	78.0	76.9	80.7	80.0	0.004	0.103	0.005
Mean Years of Education	7.0	10.1	7.4	10.2	<0.001	<0.001	<0.001
Married	243 (50.4)	263 (64.6)	141 (56.6)	155 (69.8)	<0.001	0.005	<0.001
Income							
$0–3,999	23 (4.8)	5 (1.2)	7 (2.8)	4 (1.8)	<0.001	<0.001	<0.001
$5,000–6,999	97 (20.1)	28 (6.9)	49 (19.7)	15 (6.8)			
$7,000–14,999	166 (34.4)	99 (24.3)	102 (41.0)	43 (19.4)			
≥$15,000	69 (14.3)	184 (45.2)	52 (20.9)	126 (56.8)			
Self-Health							
Excellent or good	208 (43.2)	216 (53.1)	121 (48.6)	140 (63.1)	0.051	0.024	0.003
Fair	126 (26.1)	92 (22.6)	70 (28.1)	59 (26.6)			
Poor	30 (6.2)	19 (4.7)	23 (9.2)	10 (4.5)			
Heart Condition	87 (18.0)	101 (24.8)	46 (18.5)	46 (20.7)	0.017	0.562	0.023
Diabetes	106 (22.0)	84 (20.6)	76 (30.5)	43 (19.4)	0.681	0.006	0.290
Stroke	54 (11.2)	60 (14.7)	39 (15.7)	31 (14.0)	0.131	0.697	0.227
Cancer	42 (8.7)	105 (25.8)	42 (16.9)	73 (32.9)	<0.001	<0.001	<0.001
Hypertension	193 (40.0)	169 (41.5)	108 (43.4)	114 (51.4)	0.769	0.050	0.269
LUTS							
% elders with urinary symptoms	238 (49.4)	231 (56.8)	151 (60.6)	156 (70.3)	0.003	0.032	<0.001
Mildly symptomatic (1–7)	292 (60.6)	212 (52.1)	164 (65.9)	135 (60.8)	0.046	0.445	0.024
Moderately symptomatic(8–13)	117 (24.3)	114 (28.0)	73 (29.3)	77 (34.7)			
Severely symptomatic(14–25)	14 (2.9)	20 (4.9)	11 (4.4)	9 (4.1)			
≥1 ADL Limitation	80 (16.6)	44 (10.8)	72 (28.9)	37 (16.7)	0.018	0.002	0.001
Mean Body Mass Index	26.4	25.7	26.4	25.8	0.057	0.220	0.065
Drinker	89 (18.5)	101 (24.8)	39 (15.7)	57 (25.7)	0.061	0.028	0.020
Smoker	83 (17.2)	50 (12.3)	31 (12.4)	24 (10.8)	0.069	0.667	0.086
Puts Off Care Quite Often	27 (5.6)	19 (4.7)	13 (5.2)	10 (4.5)	0.448	0.669	0.370
Respondent Lives in Rural Area	291 (60.4)	198 (48.6)	163 (65.5)	114 (51.4)	<0.001	0.002	<0.001
Medicaid Insurance	88 (18.3)	20 (4.9)	60 (24.1)	12 (5.4)	<0.001	<0.001	<0.001
Medigap Insurance	140 (29.0)	263 (64.6)	80 (32.1)	174 (78.4)	<0.001	<0.001	<0.001
Physician Characteristics							
Male Physician	250 (51.9)	283 (69.5)	161 (64.7)	173 (77.9)	<0.001	0.146	<0.001
Mean Physician Age	51.8	50.8	53.5	50.5	0.293	0.007	0.059
Mean Years Since Medical School Graduation	24.2	24.4	26.2	24.1	0.845	0.061	[d]
Specialty FP, GP, IM, geriatrics	275 (57.1)	251 (61.7)	154 (61.8)	149 (67.1)	0.363	0.366	0.324
Ever Board Certified	212 (44.0)	217 (53.3)	119 (47.8)	111 (50.0)	0.008	0.645	0.021
Provides Care In Public Clinic/ Hospital or ER	152 (31.5)	36 (8.8)	60 (24.1)	17 (7.7)	<0.001	<0.001	<0.001
No Named Physician In 1994 or 1998 or Both Years	141 (29.3)	89 (21.9)	44 (17.7)	23 (10.4)	0.014	0.025	0.004

AA: African American; a: P values from differences between African-American elder and white elder characteristics in 1994 are obtained from Fisher's exact tests; b: P values from differences between African-American elder and white elder characteristics in 1998 are obtained from Fisher's exact tests; c: P values from differences between African-American elder and white elder characteristics over time are obtained from generalized estimating equations; d: P values indicate that there is a differential effect over time (significant interaction between race and time) (Mean Years Since Medical School, p=0.049); e: FP: family practice, GP: general practice, IM: internal medicine

METHODS

Sample

This study uses a data set that profiles a racially diverse sample cohort of community dwelling elders and their physicians over a 12-year period in a multicounty area of North Carolina. These data were developed from two sources: 1) the Piedmont Health Survey of the Elderly (PHSE), a series of four in-person community surveys conducted in 1986, 1990, 1994 and 1998 on a random sample of elders living in five North Carolina counties as part of a National Institute of Aging-sponsored multisite study—Established Populations for the Epidemiological Study of the Elderly (EPESE); and 2) the North Carolina Health Professions Data System, yearly physician relicensure surveys from the North Carolina Medical Board from 1986–1998. Physicians named by respondents in the first survey were matched to North Carolina license numbers, and corresponding information from an anonymous licensure file was appended to the survey data.

The PHSE assessed health and well-being of 5,226 eligible elderly persons to identify predictors of mortality and morbidity in a community-dwelling population of persons >65 years of age.[5] Baseline surveys conducted by trained personnel collected data on 4,162 elders (about 80% response) who received 90-minute in-home interviews during 1986 and 1987. No additional persons were added to this initial cohort, but the initial cohort was followed up with three in-person surveys at approximately four-year intervals, (1990, 1994, 1998) and contact was maintained with the sample through brief annual telephone surveys in the intermittent years. Subjects

were not followed if they moved to a community sufficiently distant from the five-county study area as to preclude in-person surveys.

Only the male respondents from the 1994 (n=889) and 1998 (n=471) waves of the PHSE/EPESE data will be used as these waves contain the relevant variables pertaining to LUTS. In 1994, the analytic cohort included 482 African Americans and 407 whites; by 1998, 249 African Americans and 222 whites.

MEASURES

Independent Variables

Physician characteristics. A usual physician identified by elders at the time of the interview was matched to data obtained from the North Carolina Health Professions Data System files and rosters of physicians employed in local settings. Sociodemographic data (age and gender) and professional characteristics (self-reported primary care specialty, board certification status, years since medical school graduation and type of practice setting) were coded for physicians.

Elder characteristics. Sociodemographic characteristics obtained on interview included race, age, gender, education, marital status, annual income, and Medicaid and Medi-gap insurance, whether seen in a public or private facility, whether resided in a rural area and whether or not the elder had a named physician. Indicators of health behavior included whether the elder used alcohol, smoked or delayed seeking healthcare. Self-reported health status—"overall, how would you rate your health?"—was coded (1 = excellent/good, 2 = fair, 3 =

Figure 1. Conceptual model of the etiology of LUTS and process of care
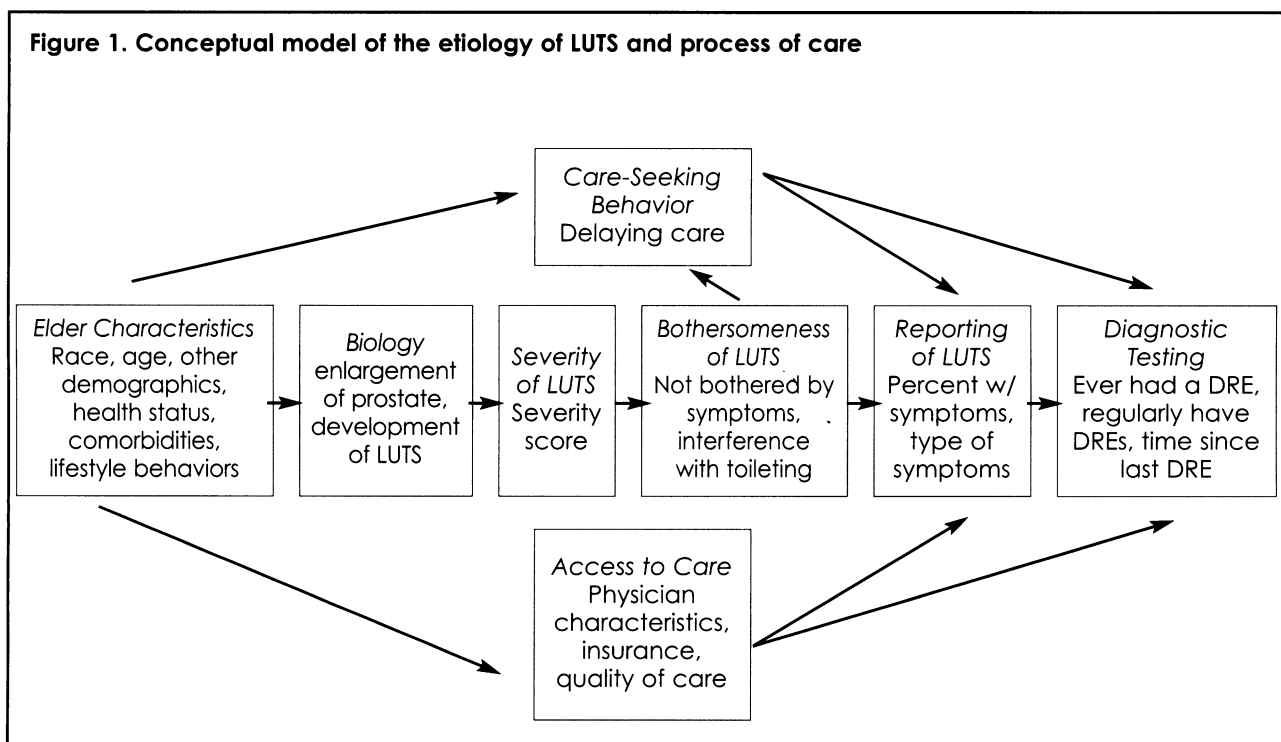
poor). The presence and severity of chronic illnesses including hypertension, diabetes, heart disease, stroke and cancer was measured.[6] Body mass index (BMI) and activities of daily living (ADL) were also measured.[7]

A modified AUA Symptom Index, which indicates problems with urination and urinary blockage, was used to determine LUTS.[2] The index was modified because our data set did not include all components of the scale (excluded nocturia and incomplete emptying). Our index included: 1) "urinated again shortly after finished urinating (frequency)," and 2) "difficulty holding urine (urgency), which denote irritative symptoms; and 3) "push or strain to urinate (straining)," 4) "stopped and started again several times when urinating (intermittency)," and 5) "dribbled urine after initial urination period (weak stream)," which denote obstructive symptoms. Severity level is based on a five-point Likert scale, where 1 = "not at all," 2 = "a few times," 3 = "fairly often," 4 = "usually," and 5 = "always," for each of the symptoms. A severity index score was calculated as the sum of the severity levels of the five symptoms. The symptom levels were then categorized as mild (1–7), moderate (8–13) and severe (14–25) symptoms. The presence of urinary symptoms (yes/no) was defined as whether an elder presented a severity score >5 or not.

Dependent Variables

The Interference with ADL Index represents another indicator of the burden of illness and an additional dimension of symptoms.[3] The index is based on a three-point Likert scale where 1 = "no help," 2 = "help" and 3 = "unable to do" for each of the seven ADL.[3] This index was calculated as the sum of each of the seven ADL. The interference index was then categorized as mild (7–8), moderate (9–12) and severe (13–21). The level of

bother with LUTS experienced by the elders was based on the answer "have not had a problem" to the question, "What is the most important reason why you have not had a rectal exam by a doctor within the past 24 months?"

The administration of a DRE was assessed using a series of questions addressing the need for a DRE and the regularity for which the DRE was used in screening for BPH.[1] Responses to the question "Do you regularly have a rectal exam by a doctor and how often?" measured DRE administration and regularity. With regard to the DRE, for the both 1994 and 1998 data, the response was scored 0 if the elder answered "no" to the question, "Do you regularly have a rectal exam by a doctor?" and "never" to the question "When was the last time that you had a rectal exam by a doctor?" Otherwise, the response was categorized as occurring either up to 1 year or >1 year. American Cancer Society guidelines recommend an annual DRE.[8]

ANALYSIS

The most important analyses sought to estimate relationships between LUTS among an elderly urban and rural cohort of oversampled African Americans and whites. Of interest is whether there are racial differences in the solicitation and receipt of medical care for LUTS, and in associated risk factors (Figure 1). Fisher's exact tests, generalized estimating equations (GEEs) to determine effects over time and t tests were used for comparisons between African-American and white elders. For each repeated binary outcome, a multivariable linear model was fit using GEEs, allowing assessment of the impact of race across time for each analysis.[9]

For each GEE analysis, an initial model tested associations between each dependent variable and race,

Table 2. Distribution of dependent variables by elder race and year

Characteristics	1994 (N=889)		1998 (N=471)		1994 P Value[a]	1998 P Value[b]	P Value[c]
	AA Elder	White Elder	AA Elder	White Elder			
N	482	407	249	222			
Interference with ADL (mean)	8.0	7.6	8.3	7.8	0.019	0.010	0.003
Mild ADL Interference	360 (74.7)	321 (78.9)	188 (75.5)	191 (86.0)	0.039	0.017	<0.001
Moderate ADL Interference	26 (5.4)	10 (2.5)	35 (14.1)	18 (8.1)			
Severe ADL Interference	20 (4.1)	11 (2.7)	26 (10.4)	13 (5.9)			
Regularly Has Rectal Exam by Doctor	203 (42.1)	222 (54.5)	142 (57.0)	162 (73.0)	0.008	<0.001	d
Never Had DRE	43 (8.9)	6 (1.5)	9 (3.6)	6 (2.7)	<0.001	0.079	<0.001
1 Year	33 (6.8)	21 (5.2)	51 (20.5)	31 (14.0)			
>1 Year	319 (66.2)	306 (75.2)	165 (66.3)	176 (79.3)			
Does Not Get Regular Rectal Exam— Not Bothered by Symptoms	23 (4.8)	8 (2.0)	12 (4.8)	7 (3.2)	0.027	0.349	0.018

AA: African American; a: P values from differences between African-American elder and white elder characteristics in 1994 are obtained from Fisher's exact tests; b: P values from differences between African-American elder and white elder characteristics in 1998 are obtained from Fisher's exact tests; c: P values from differences between African-American elder and white elder characteristics over time are obtained from generalized estimating equations; d: P values indicate that there is a differential effect over time (significant interaction between race and time) (Regular Rectal Exam, p=0.024).

time, and time by race interaction. A significant interaction term was interpreted as possibly supporting a differential effect of race across time. If the interaction was insignificant, then the interaction was removed and a reduced model was fit with the aim of assessing the main effect of race across time. A backward model selection for the GEE models was employed with a conservative selection level to stay of p=0.20. Race and year were forced in the model. All those characteristics with a p value of ≤0.20 are reported. Only results from the final reduced models are reported here. SAS® software was employed for all analyses.

RESULTS

Table 1 displays the distribution of elder and physician characteristics by race and year. Overall, the cohort declined from 889 in 1994 to 471 in 1998. Four-hundred-eighty-two African-American and 407 white elders were in the 1994 cohort, while 249 and 222 remained in 1998 cohort, respectively. In 1994, African-American elders in comparison to white elders, on average, were older (p=0.004), less educated (p<0.001) and less likely to be married (p<0.001); had less income (p<0.001); lived in a rural area (p<0.001); and were more likely to utilize Medicaid insurance (p<0.001) rather than Medigap insurance (p<0.001). African-American elders were more likely to have ≥1 ADL limitations (p=0.018) and mild or moderate urinary symptoms (p=0.046), but were less likely to have cancer (p<0.001) and heart con-

ditions (p=0.017). African-American elders were less likely to have a male physician (p<0.001) and a board-certified physician (p=0.008). Finally, African-American elders were more likely to receive care in a public clinic/hospital or ER (p<0.001) and to not have a physician providing care in either 1994 or 1998, or in both years (p=0.014).

By 1998, much of the racial differences in elder characteristics within the 1994 cohort remained the same except for the severity of urinary symptoms and heart conditions, elder age, male physician and board-certified physician, which were no longer significant. Several new racial differences emerged within the cohort in 1998. African-American elders were more likely to give a poorer self-report of health status (p=0.024), to have diabetes (p=0.006), to not drink alcohol (p=0.028) and to have older physicians (p=0.007). Most of the differences in elder characteristics persisted over time between African Americans and whites, except for diabetes and physician age. A significant interaction between race and time existed for physician experience (p=0.049).

Table 2 summarizes the dependent variables by race and year. In 1994, African-American elders had a higher interference with ADL score (8.0 vs. 7.6, respectively, p=0.019). African-American elders were less likely than white elders to indicate that they were regularly given DREs by physicians (p=0.008) and were more likely to not have had DREs (p<0.001). African Americans were

Table 3. Final[1] generalized estimating equation models

Characteristics	Regularly Has Rectal Exam by Physician		Interference with ADL	
	P Value	Odds Ratio (95% CI)	P Value	Odds Ratio (95% CI)
Year[2]	0.019	1.134 (1.021, 1.260)	<0.001	1.172 (1.119, 1.227)
African American[2]	0.066	0.659 (0.423, 1.028)	0.584	1.070 (0.841, 1.361)
Age			0.002	1.045 (1.017, 1.074)
Years of Education	0.037	0.565 (0.331, 0.967)		
Medicaid Insurance			0.007	1.824 (1.180, 2.818)
Poor Self-Reported Health Status			<0.001	2.610 (1.539, 4.427)
Diabetes	0.020	0.582 (0.369, 0.918)		
Cancer	0.060	1.643 (0.979, 2.758)		
Stroke	0.187	0.674 (0.374, 1.212)	0.001	2.002 (1.314, 3.050)
Hypertension			0.036	0.773 (0.608, 0.983)
Drinker	0.055	0.647 (0.415, 1.009)	<0.001	0.720 (0.602, 0.861)
Smoker	0.013	0.532 (0.323, 0.876)		
Physician Age 35–65			0.036	0.601 (0.373, 0.966)
Physician Age >65			0.029	0.724 (0.541, 0.968)
Years of Medical School	0.025	0.978 (0.959, 0.997)		
Board-Certified MD	0.127	1.487 (0.894, 2.475)		
Had No Physician	0.018	0.389 (0.178, 0.848)		
Lives in Rural Area	0.002	0.495 (0.314, 0.780)		
Puts Off Care Quite Often	0.006	0.387 (0.198, 0.757)		
Male Physician			0.142	1.300 (0.916, 1.844)

1: Estimates from a generalized estimating equations model with a selection to stay (SLS) of p=0.20. Initial model has all elder and physician characteristics (race, gender, age, years of education, marital status, income, Medicaid, Medigap, self-reported health, stroke, heart disease, cancer, diabetes, hypertension, severity of illness, body mass index, disable, put off care, reside in rural area, smoker, drinker, male physician, received care in public facility, presented with urinary symptoms, MD specialty, physician age, years since medical school training, board certified); 2: Year and race were forced into the model.

more likely to indicate that they were not bothered by the symptoms (p=0.027) as the reason for not getting a DRE.

By 1998, African Americans continued to experience more interference with ADL than whites (p=0.010) and experienced higher levels of moderate-to-severe interference with ADL (p=0.017). African-American elders continued to indicate that they were less likely than white elders to be regularly given DREs (p<0.001). However, a racial difference no longer existed in "never receiving a DRE" or in "not being bothered by symptoms." Most of the differences in the dependent variables persisted over time between African Americans and whites, except for regularly having a DRE. A significant interaction between race and time existed for receiving DREs (p=0.024).

The first column of Table 3 is the final GEE model of regularly having a DRE by a physician and shows that elders were more likely to regularly receive DREs over time (OR=1.134, 95% CI (1.021, 1.260); p=0.019). Elders who were less likely to receive regular DREs had fewer years of education (OR=0.565, 95% CI (0.331, 0.967); p=0.037), diabetes (OR=0.582, 95% CI (0.369, 0.918); p=0.020), smoked (OR=0.532, 95% CI (0.323, 0.876); p=0.013), lived in a rural area (OR=0.495, 95% CI (0.314, 0.780); p=0.002), delayed care quite often (OR=0.387, 95% CI (0.198, 0.757); p=0.006), had less-experienced physicians (OR=0.978, 95% CI (0.959, 0.997); p=0.025), or had no named physician at all (OR=0.389, 95% CI (0.178, 0.848); p=0.018). No other variables are significantly predictive (p<0.05) of receiving regular DREs. However, regular DREs were marginally more likely (p<0.10) to occur for elders with cancer and marginally less likely (p<0.10) for African Americans and elders who used alcohol.

The second column of Table 3 indicates that the mean interference with ADL score increases over time (OR=1.172, 95% CI (1.119, 1.227); p<0.001). Furthermore, elders with higher interference with ADL were more likely to be older (OR=1.045, 95% CI (1.017, 1.361); p=0.002), have Medicaid insurance (OR=1.824, 95% CI (1.180, 2.818); p=0.007), have poorer self-reported health (OR=2.610, 95% CI (1.539, 4.427); p<0.001), and have had strokes (OR=2.002, 95% CI (1.314, 3.050); p=0.001). Conversely, elders with higher interference with ADL were less likely to have hypertension (OR=0.773, 95% CI (0.608, 0.983); p=0.036), use alcohol (OR=0.720, 95% CI (0.602, 0.861); p<0.001), and have an older physician (OR=0.724, 95% CI (0.541, 0.968); p=0.029). No other variables are significantly predictive (p<0.05) of a higher interference with ADL score.

DISCUSSION

This study examined the healthcare-seeking behavior for LUTS among a racially oversampled, mixed urban/rural, elderly cohort of African Americans and whites. The analysis controlled for elder and physician

characteristics as well as indicators of health status, lifestyle behavior and quality of care over time. No study has examined longitudinally the reporting of urinary symptoms among African Americans in the south. As such, the findings will complement the only other community-based studies of urinary symptoms and African-American men—the Genesee County, MI Study and the Detroit Education and Early Detection Study—which were conducted in the north.[1,10] Of particular interest was whether there were racial differences in the seeking of healthcare for urinary symptoms and in associated risk factors.

The findings of this study should be interpreted with the understanding that there are limitations in analyzing repeated measures data. The EPESE survey was designed to capture information about this study population at two consecutive time points over four years. This means that data between waves are not available; hence, assumptions must be made about symptom presentation for periods when survey measurements were not collected. However, the sample size is robust enough to confidently make inferences about these data over time.

Further, there was attrition in the EPESE survey over the four-year period of this study. However, the end-of-study sample size nonetheless allowed for useful and important information to be extracted from the data. Attrition and missing data introduce bias in estimation and inference, particularly if they happen nonrandomly. We assumed that missing data were completely at random. Statistical methods for addressing attrition and data that were not missing at random in repeated measures studies are very complex and beyond the scope of this paper.

According to Wei et al., the catalyst for the solicitation of medical care for LUTS among African-American men has not been determined.[1] Our study does provide some illumination even though it is, in part, hypothesis generating. African Americans appear to have fewer symptoms indicative of LUTS. Results indicate that in 1994, 49.4% of African Americans presented with LUTS, compared to 56.8% of whites. By 1998, these percentages increased to 60.6% and 70.3%, respectively. These percentages are higher than what was reported in the DEED study, in which 43% self-reported urinary symptoms.[10,11] Of the LUTS reported in our study, 27.2% and 33.7% of African Americans in 1994 and 1998, respectively, presented moderate and severe LUTS, compared to 32.9% and 38.8% of whites. The percentages of moderate and severe LUTS in our study are comparable to results indicated in the Flint study, which observed that 39.6% had moderate-to-severe LUTS, and the Olmsted County study of white men, which reported that approximately 33% had moderate-to-severe LUTS.[1,4]

There is no reason to think that the biology of the

prostate is different among ethnic groups. The differential symptom reporting may represent a difference in subjective threshold at which a symptom becomes a perceived problem. More African Americans than whites reported interference with ADL. This measure represents an indication of the burden of illness as well as a dimension of symptoms.[4] However, African Americans were not as bothered by LUTS as whites. This result is consistent with Sarma et al., who found that African Americans reported less "bother" at all levels of LUTS severity.[12]

Other study results reveal that the occurrence of urinary symptoms among African-American men does not necessarily result in the receipt of further diagnostic care. African-American elders were less likely than white elders to have regular DREs by physicians. Moreover, African Americans were more likely to not receive DREs at all. In contrast, whites were more likely to receive a DRE every year as recommended by the American Cancer Society guidelines.[8] This result is consistent with the Flint study that indicates that few African-American men sought and received healthcare for urinary complaints.[1] In contrast, the solicitation of medical care for urinary symptoms among white men has been demonstrated to be a function of symptom severity, according to the Olmsted study, as nearly one in four men aged ≥70 years old who received treatment experienced moderate or severe LUTS.[4]

Reasons for less utilization of DRE by African Americans may be due to multiple factors. Since African Americans report fewer urinary symptoms indicative of prostate hypertrophy or obstruction,[13] their physicians may be less prompted to perform the relevant examination. Or, perhaps, DREs may be one of the many screening tests that medical providers do not give to members of minority groups for historical reasons, similar to occurrences in studies of utilization of mammography or cholesterol screening.[14] Finally, we are unable to determine from our limited data whether patient refusal of DREs account for the observed disparity.[15]

In our study, access to care and poor health behavior had the greatest impact on the healthcare seeking and receipt of diagnostic care for LUTS. Our data indicate that regular DREs occurred less for elders who lived in rural areas, who used alcohol, smoked and delayed care quite often. The health behavior risk factors are systemic of a lack of health education. As such, increases in health education among African Americans regarding LUTS may close the racial disparity in the solicitation and receipt of diagnostic care. As a correlate, Wolf found that African-American males respond positively to health education regarding prostate cancer.[16] In order to gauge interest in PSA screening, the authors found that among African-American patients who had been informed of PSA screening and the increased risk of prostate cancer among African Americans, perceived susceptibility to prostate cancer was correlated significantly with interest in PSA screening. This correlation did not exist for uninformed African Americans.

Finally, our study results indicate that the gender and experience level of the physician impacts the receipt of DREs. Sommer et al. conducted a survey on voiding patterns and found that one of the reasons men do not present symptoms to their doctors is a reluctance to discuss symptoms with a female family practitioner.[17] Further, Edlefsen stated that physicians who graduated before 1974, were of male gender and worked for "fee service" were more likely to order PSA tests and perform DRE.[18] Thus, male physicians may also be more sensitive to the disposition and prognosis of this condition, which may impact diagnosis and treatment.

Future research studies should clarify how much access-to-care issues, socioeconomic or cultural differences, or problems with physician–patient interactions lead to disproportionate undertreatment of LUTS among elder African Americans.

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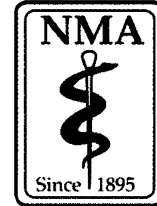
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