

PATIENT ATTITUDES REGARDING HEALTHCARE UTILIZATION AND REFERRAL: A DESCRIPTIVE COMPARISON IN AFRICAN- AND CAUCASIAN AMERICANS WITH CHRONIC PAIN

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The purpose of this study was to evaluate healthcare utilization and referral patterns for pain management services in a racially and ethnically diverse population. A study-specific mail survey was directed at African- (N=324) and Caucasian Americans (N=300) receiving chronic pain treatment at a tertiary care pain center to address their healthcare access, referral, and utilization patterns. Overall, 46% (N=286) responded, with the majority of respondents being Caucasian Americans (57%) and women (68%). The majority (58%) reported asking their physicians to refer them to a pain physician. African Americans were more likely to report that chronic pain was a major reason for financial problems. They made significantly more visits to the emergency room for pain care. African Americans agreed more that ethnicity and culture affected access to healthcare and pain management. They also tended to agree more than Caucasian Americans that pain medication could not control pain. These results demonstrate significant differences in healthcare utilization, access, and attitudes amongst African- and Caucasian Americans receiving chronic pain management. In light of the socioeconomic and health consequences of chronic pain, these results suggest the need for further studies addressing variability in pain care access and utilization in diverse populations. (*J Natl Med Assoc.* 2004;96:31-42.)

Key words: healthcare utilization ♦
referral patterns ♦ patient attitudes ♦
chronic pain ♦ race and ethnicity

INTRODUCTION

Significant advances have been made in facilitating health and in preventing disease.^{1,2} Despite medical advances that have resulted in increased longevity for Americans, there are data that contin-

ue to suggest that the overall health for racial and ethnic minorities is poorer than that for Caucasian Americans.²⁻⁶ Emerging studies continue to document disturbing differences in health, disease severity, quality of life, and quality of medical care received based upon the patient's gender, race, ethnicity, and social stratification.⁷⁻¹¹ Racial disparities in healthcare have been attributed to biological and historical factors (e.g., segregation, discrimination, lack of trust in the healthcare delivery system) as well as socioeconomic and cultural factors.¹²⁻¹⁵ Differences have also been attributed to variability in physician attitudes and knowledge as well as in healthcare insurance coverage, access, and utilization.^{8,16-23} Ineffective communication also remains an important contributing factor to poor-quality healthcare.²⁴⁻²⁷ These patient, healthcare system, and healthcare provider factors contribute to vari-

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ability in treatment response. However, the implications of these factors in a chronic pain population have not been well elucidated.²⁸

There is increasing concern that racial and ethnic minorities receive lower-quality healthcare services when compared to Caucasian Americans.^{6,29-32} Racial and ethnic disparities in healthcare services have largely been studied in cardiovascular, HIV, cancer, diabetes, surgical, and mental healthcare.^{8,33} Although chronic pain (i.e., non-cancer, chronic nonmalignant, chronic benign pain) impacts the overall health and well-being of greater than 65 million Americans and is the most frequent reason for consultation with a physician, few studies have attempted to examine healthcare disparities in a racially and ethnically diverse chronic pain population.³⁴ African Americans may receive lesser acute, chronic, and cancer pain care than Caucasian Americans.^{18,33,35-39} Clear differences in the ability to access progressive medical procedures have been demonstrated by race and ethnicity.^{3,40,41} Differential healthcare utilization may be due to differential access and quality of care.

African Americans are more likely to be diagnosed at a younger age with a medical condition (e.g., osteoarthritis, diabetes, hypertension) than Caucasian Americans.⁴² They are also disproportionately diagnosed with more severe and debilitating forms of these conditions.^{2,43,44} The high likelihood of manual labor jobs in African Americans makes them more susceptible to knee trauma and osteoarthritis.⁴² The literature shows that African Americans underutilize medical services, even when formal healthcare services are available.⁴⁵ The first National Health and Nutrition Examination (NHANES) from 1984 to 1988 revealed that African-American men were three times less likely to receive a total knee arthroplasty compared to Caucasian American men—which does not reflect the high prevalence or increased severity of knee osteoarthritis in this population.²⁸ Many studies have shown that racial and ethnic minority Americans have fewer visits to primary healthcare providers, are referred less often for specialty care, and have lower rates of diagnostic and screening tests as well as less preventive care for illnesses when compared to Caucasian Americans.^{23,45-51}

Healthcare utilization is also related to patient satisfaction and patient-physician communication. Cleeland found that racial and ethnic minority persons were at risk for the undertreatment of cancer

pain and speculated that communication problems contributed to their problems.¹⁸ Wilson reported that many African Americans are dissatisfied with their healthcare providers.²⁸ Furthermore, African-American patients reported that their healthcare providers did not inquire about their pain experience, provide information on how long it would take for pain medications to work, discuss test or examination findings, or explain the seriousness of the illness or injury. Similarly, Bernabei showed that the pain assessment and treatment provided for elderly African Americans living in nursing homes was less when compared to elderly Caucasian Americans.³⁶

Financial access, health insurance coverage, and physical access directly impact healthcare utilization. The differential use of health services based upon race may be due to differential access. Previous studies have reported that poor and uninsured African Americans were less likely to seek emergency room care even when in pain. Longer delays in seeking healthcare result in poorer outcomes.⁵² A study by Todd, et al. revealed that African Americans were less likely to receive analgesics for long-bone fractures in emergency rooms than similarly injured Caucasian-American patients.⁵³ Lower healthcare utilization rates among African Americans may reflect the emotional and physical attachment some may have with informal institutions (e.g., church) for their mental and physical health needs.⁵⁴ However, no study has previously examined healthcare access and utilization patterns in a racially and ethnically diverse chronic pain population.^{55,56}

New evidence suggests that chronic pain may differentially affect the overall health of African Americans when compared to Caucasian Americans.^{57,58} Healthcare access, utilization, and referral patterns in chronic pain patients from diverse ethnic backgrounds are poorly understood.⁵⁹ We hypothesized that the attitudes as well as the chronic pain and healthcare experiences among African Americans differed from Caucasian Americans. More specifically, we speculated that African Americans have less access and different utilization patterns for pain management services when compared to Caucasian Americans. This study was designed to determine whether African Americans differ from Caucasian Americans in their: 1) healthcare utilization, 2) sources of healthcare, 3) access to pain treatment, 4) attitudes and perceptions regarding pain management, and 5) referral patterns.

Table 1. Demographic and Socioeconomic Characteristics for the Population

Variables	African Americans (N=101)	Caucasian Americans (N=136)	p-value
Age (mean years±SD)	47±13	53±15	0.00
Gender (% F)	68.0	68.4	0.095
Number of People in Household (mean±SD)	2.7+1.6	2.3+1.1	0.04
<i>Marital Status</i>			
Single (% yes)	25.0	14.3	0.09
Married (% yes)	36.7	61.5	0.00
Divorced (% yes)	31.7	8.8	0.00
Separated (% yes)	5.0	2.2	0.34
Significant other (% yes)	8.3	3.3	0.17
Widowed (% yes)	1.7	9.9	0.04
<i>Education</i>			
< High school (%)	29.1	36.7	0.03
High school graduates (%)	39.8	26.0	
College graduates (%)	31.1	37.3	
<i>Household Income (%)</i>			
≤\$19,999 (%)	57.2	33.3	0.02
\$20,000–\$34,999 (%)	13.2	19.7	
\$35,000–\$69,999 (%)	22.0	28.2	
\$70,000–\$99,999 (%)	3.3	6.8	
\$100,000 plus (%)	4.4	12.0	
Employment (% yes)	28.3	40.9	0.04

METHODS

The University of Michigan Health System Institutional Review Board (IRB) provided human subjects approval for this study. A prospective cross-sectional design with survey methodology was used to compare the healthcare experiences of African- and Caucasian Americans with chronic pain presenting to the Multidisciplinary Pain Center (MPC) at the University of Michigan.

MEASURES

A four-page, 50-item questionnaire was developed to evaluate healthcare access and utilization patterns in patients receiving treatment for chronic pain. The multi-item questionnaire consisted of items addressing: 1) demographic variables (e.g., age, race, ethnicity, gender), 2) healthcare services utilization, 3) healthcare sources, 4) physical and financial access to pain treatment, 5) attitudes and perceptions regarding pain management, and 6) attitudes and perceptions regarding healthcare access. The 13 items directed at healthcare utilization included questions, such as the total number of

days spent in an inpatient unit, number of emergency room visits, and number of specialty healthcare provider visits. Response choices were coded as the total number of days/visits at each facility. Potential healthcare sources included emergency room and healthcare clinics. Response choices and questions were treated as a dichotomous variable (“yes” versus “no”). Financial access was determined using a five-item subscale and focused on the participant’s medical insurance and difficulties paying for healthcare. Physical access questions focused on the participant’s means of transportation to their appointments. Subjects also rated their agreement level for 13 items regarding the importance of sociodemographic factors on pain management and healthcare using a five-point Likert scale (0=completely disagree, 4=completely agree).

The investigators and faculty members from the University of Michigan’s Department of Anesthesiology were enlisted to critique an early draft of the survey to improve its internal validity. Questions that were ambiguous or lacked clarity were revised, and content areas that were overlooked were added.

Table 2. Health Services Utilization Frequency by Race

Variable	N	Number of Visits (%)					p-value
		None	1-4	5-8	9-12	13+	
<i>Number of inpatient days</i>	231						0.53
African Americans		61.6	26.3	5.1	1.0	6.1	
Caucasian Americans		69.7	17.4	3.8	1.5	7.6	
<i>Number of visits to primary care physician</i>	220						0.99
African Americans		11.8	32.3	18.3	15.1	22.6	
Caucasian Americans		12.6	33.1	18.9	15.0	20.5	
<i>Number of emergency room visits (ER)</i>	223						0.06
African Americans		53.0	34.0	9.0	2.0	2.0	
Caucasian Americans		70.7	22.6	3.8	2.3	0.8	
<i>Number of visits to company clinic</i>	150						0.10
African Americans		76.6	9.4	6.3	7.8	---	
Caucasian Americans		88.4	8.1	1.2	2.3	---	
<i>Number of visits to specialist</i>	203						0.84
African Americans		23.3	29.1	15.1	12.8	19.8	
Caucasian Americans		29.9	24.8	16.2	12.0	17.1	
<i>Number of non-ER visits</i>	229						0.14
African Americans		36.4	33.3	19.2	5.1	6.1	
Caucasian Americans		47.7	31.5	8.5	4.6	2.7	
<i>Number of mental health visits</i>	227						0.37
African Americans		57.3	24.0	8.3	5.2	5.2	
Caucasian Americans		71.0	15.3	6.9	3.1	3.8	
<i>Number of other ER visits</i>	233						0.04
African Americans		56.6	29.3	9.1	5.1	---	
Caucasian Americans		64.9	31.3	2.2	1.5	---	

Participant Recruitment and Survey Distribution

A database was queried to identify people who attended the pain center for a two-year period. black/African Americans (n=324) and white/Caucasian Americans (n=300) who were currently seen at the MPC were selected. Potential study participants were recruited via two mechanisms: 1) at their MPC visit or 2) via U.S. mail. Participants recruited at the MPC were given the study materials during their clinic visit. A package which contained the survey instrument and an accompanying cover letter describing the study was provided to potential subjects. The cover letter encouraged participation but informed subjects that their participation was entirely voluntary and their responses confidential. Attached to the survey was a postcard that was used to document the subject's willingness to participate and informed consent. Subjects who wished to par-

ticipate separated the postcard from the survey and returned the completed questionnaire via U.S. mail in the enclosed postage-paid envelopes or to a locked box inside the MPC. The postcard and survey (which had no identifying marks) were returned separately to prevent any linking of participants to their confidential survey responses.

Subjects who were recruited during their clinic visit were sent the same information packet by U.S. mail. Consent was obtained when a subject returned their informed-consent document and survey using the previously described methodology. To obtain an optimal response, follow-up of nonresponders used the Total Design Method (i.e., three follow-up mailings of the survey with reminder postcards and letters within a two-month period).⁶⁰ No incentives were offered to encourage study participation. An abbreviated nonresponse questionnaire was sent to those persons who did not respond to the mailings

to elicit their reasons for nonparticipation.

Data Analysis

Descriptive statistics (e.g., frequency distribution) were calculated to establish sample sociodemographic characteristics and performance on the measures included in the study (i.e., healthcare utilization, healthcare source, financial and physical access to healthcare, and attitudes regarding healthcare). T-tests or Mann-Whitney U tests were performed for continuous data when applicable. For categorical data, a Chi-square test was used to compare the two groups. Measures of association (odds ratios) were calculated to compare patterns of healthcare accessibility and utilization, healthcare source, financial access, physical access, and attitudes regarding pain management and treatment between African- and Caucasian Americans. All statistical analyses were performed using the Statistical Package for Social Sciences (SPSS) version 10.0.⁶¹ Statistical significance for all analyses were determined using two-tailed tests, with the probability of Type I error, $p < 0.05$.

RESULTS

Demographic Characteristics

Complete responses were obtained from 46% of the sample ($N=286$). Data obtained from racial and ethnic persons who did not identify themselves as either African American or Caucasian American ($n=8$) and those subjects who did not provide racial or ethnic information ($N=41$) were not analyzed. The final sample analyzed included self-identified African- or Caucasian Americans, ($N=237$). The majority of the sample (57%) was Caucasian American ($n=136$). Women (68.3%) were equally distributed between African- (68.0%) and Caucasian Americans (68.4%). The African Americans were significantly younger than the Caucasian Americans (mean years \pm SD; 47 ± 13 versus 53 ± 15 ; $p < 0.001$). As shown in Table 1, when other socio-demographic variables were analyzed, Caucasian Americans reported significantly ($p < 0.05$) higher annual household income, employment, and education when compared to the African Americans. A minority of the sample (3%) was involved in litigation. The duration of pain prior to treatment at the MPC was not different between the two groups. However, when comparing the respondents who had waited years prior to seeking pain treatment to those who waited a few months, African Americans

were more likely to wait years than Caucasian Americans (18.5% versus 9.2%; $p=0.02$).

Data from the 33 nonrespondents, revealed that the majority were African Americans (54%) and women (70%). The most common reasons non-respondents cited for not completing the survey included being: 1) too busy (33%), 2) too ill (22%), and 3) in too much pain (22%). Table 1 provides further demographic characteristics of the sample population.

Referral Patterns

The majority (58%) of the participants asked their physician to refer them to a pain physician, which was not different based upon the subject's race or ethnicity. Figure 1 provides further information regarding the main reasons why the participants did not ask to be referred. Overall, most subjects (61%) felt that they should have been referred earlier for pain treatment, although African Americans seem to feel that they should have been referred earlier more frequently when compared to Caucasian Americans (68.1% versus 55.6%; $p=0.06$). Most of the respondents (78%) reported that they had never been to a pain center before. Respondents that were previously seen in another pain center prior to coming to the MPC were more likely to be African American (OR=1.98, 95% CI=1.06–3.69; $p=0.03$). No differences were found in referral patterns to the pain center based upon the physicians' race for the sample. However, African Americans were more likely to have been referred by a woman physician when compared to Caucasian Americans (9.8% versus 21.5%; OR=0.34; CI=0.18–0.85; $p=0.01$).

Healthcare Access

Financial Access to Pain Management: The majority of respondents (90%) reported having healthcare insurance. African Americans were more likely to have Medicaid than Caucasian Americans (33.3% versus 11.9%; $p < 0.001$). No significant differences were found between the groups in the distribution for other types of healthcare insurance coverage. Caucasian Americans reported less difficulty paying for healthcare within the last 12 months (OR=0.44; 95% CI; 0.25–0.75; $p < 0.001$) as well as less problems affording medical care (OR=0.51; 95% CI: 0.30–0.88; $p=0.01$). African Americans were more likely to report that chronic pain was a major reason for financial problems when compared to Caucasian Americans (OR=0.39; 95% CI; 0.21–0.72, $p < 0.001$).

Physical Access to Pain Treatment: Although

Table 3. Study Population's Attitudes Regarding Chronic Pain and Healthcare by Race

Variable	N	Level of Agreement					p-value
		Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	
<i>Gender affects healthcare</i>	215						0.00
African Americans		29.3	12.0	16.3	28.3	14.1	
Caucasian Americans		48.8	12.2	22.8	13.0	3.3	
<i>Gender affects access to pain management</i>	215						0.18
African Americans		35.2	15.4	22.0	17.6	9.9	
Caucasian Americans		47.6	12.9	24.2	10.5	4.8	
<i>Ethnicity/culture affects access to healthcare</i>	220						0.00
African Americans		17.9	13.7	23.2	25.3	20.0	
Caucasian Americans		39.2	10.4	28.0	16.8	5.6	
<i>Ethnicity/culture affects access to pain management</i>	219						0.00
African Americans		25.0	7.6	18.5	30.4	18.5	
Caucasian Americans		47.6	12.9	24.2	10.5	4.8	
<i>Complaints of pain distract physicians</i>	219						0.61
African Americans		35.5	18.3	21.5	17.2	7.5	
Caucasian Americans		27.8	19.0	29.4	18.3	5.6	
<i>Pain medication should be saved</i>	223						0.69
African Americans		46.8	20.2	12.8	12.8	7.4	
Caucasian Americans		43.4	18.6	14.7	18.6	4.7	
<i>Pain is sign that things are worse</i>	217	0.08					
African Americans		26.1	21.7	21.7	18.5	12.0	
Caucasian Americans		13.6	29.6	24.0	25.6	7.2	
<i>People do not get addicted easily</i>	219						0.90
African Americans		29.5	23.2	25.3	13.7	8.4	
Caucasian Americans		26.6	28.2	24.2	14.5	6.5	

not significant, Caucasian Americans traveled longer distances to the pain center than African Americans (mean miles±SD; 65±15 versus 50±10), respectively. Most subjects (>53%) reported driving themselves to the MPC. Other primary sources of transportation included being driven to the appointment (Caucasians vs. African Americans; 49% versus 46%) and taking a taxi (3% versus 5%).

Healthcare Utilization

Healthcare Sources: The majority of the participants (89%) reported having a primary care physician. Although not significant, African Americans were less likely to have a regular primary care physician compared to Caucasian Americans (87% versus 91%). The African Americans were more

likely to use the emergency room as a regular source for healthcare than the Caucasian Americans (11.5% versus 3.0%, $p<0.01$; OR=0.24, $p<0.05$).

Utilization of Healthcare Services: As shown in Table 2, African Americans with chronic pain reported significantly more visits to the emergency room for pain care in the last 12 months than the Caucasian Americans (1.7±0.9 versus 1.4±0.7, $p<0.001$), although there were no differences in the number of visits made to the emergency room for nonpain care. They were also more likely to wait longer to see a healthcare provider after the onset of their pain than Caucasian Americans ($p<0.05$). Use of diagnostic tests (e.g., x-rays, CAT scans, MRIs) was not statistically different between the

groups. Figure 2 shows that the number of surgeries during their lifetime was not significantly different, but Caucasian Americans tended to have a higher number of surgeries.

Patient Perceptions and Attitudes

Caucasian Americans were less likely to agree that gender affects healthcare when compared to African Americans (26.3% versus 42.2%; $p < 0.05$), although there were no differences between the two groups in their belief that gender affects access to pain management (27.5% versus 15.3%). When compared to Caucasian Americans, African Americans agreed more that ethnicity and culture affects access to healthcare (OR=0.12, 95% CI=0.04–0.35; $p < 0.001$) and pain management (OR=0.15; 95% CI=0.05–0.43; $p < 0.001$). Although not significant, the trend shows that African Americans tended to agree with the statements that pain medications cannot control pain and that good patients avoid talking about pain more than Caucasian Americans. Table 3 shows the subjects' opinions regarding other aspects of pain and healthcare.

Perceptions and Attitudes by Gender: There were significant differences in the perception that gender affects access to healthcare between African- and Caucasian Americans regardless of gender (men: $p < 0.05$, women: $p < 0.001$). When gender was controlled, this difference remained significant only among women (i.e., African-American and Caucasian -American women (13% versus 42%, $p < 0.01$). African-American women were more likely to agree that ethnicity/culture affected access to pain treatment than Caucasian-American women (21% versus 2%, $p < 0.05$). When the perception that ethnicity/culture affected access to healthcare was tested in both African- and Caucasian Americans, African-American women were more likely than Caucasian American women (27% versus 5%, $p < 0.001$) to agree. Throughout the entire study sample, there were no racial differences in the belief among the respondents that pain medication can control pain. Yet when stratified by gender, African-American men agreed more than Caucasian-American men with this statement ($p < 0.05$). There were no differences in the response among African- and Caucasian-American women.

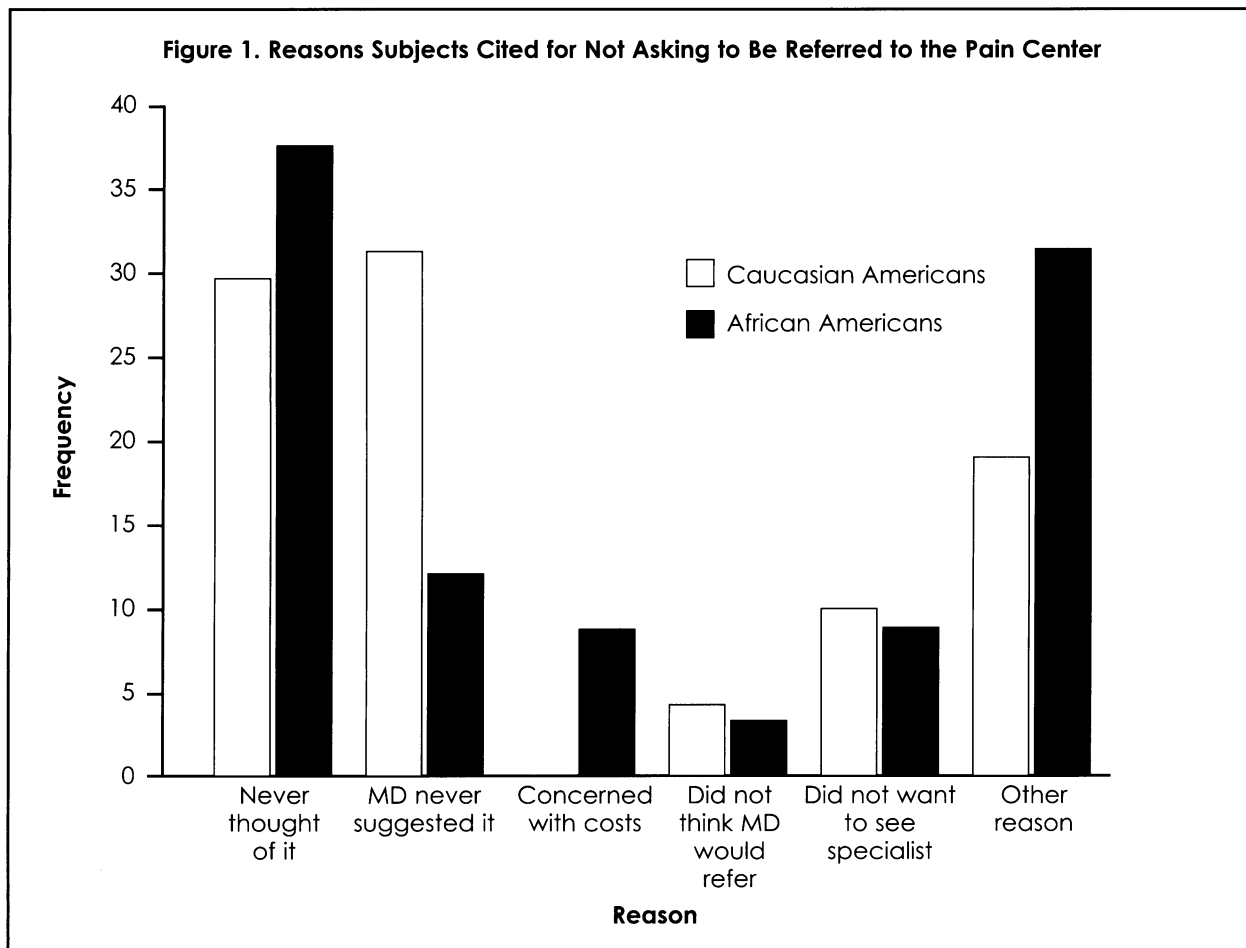
DISCUSSION

Pain is the major reason for healthcare utilization, significantly affecting health and well-being.⁶²

Yet, stark differences in the healthcare experiences (e.g., healthcare access, referral, and utilization) based upon gender, race, ethnicity, and social stratification are well described.^{8,63-65} In their studies on physician pain management, Green et al. demonstrated physician variability in pain management decision-making based upon patient demographic factors and type of pain.⁶⁶⁻⁷⁰ Most studies that have focused on healthcare access and utilization have not examined a racially and ethnically diverse chronic pain population. In this study, we report on the experiences and perceptions of African- and Caucasian Americans who received chronic pain treatment in a tertiary-care academic pain center. Potential factors that affect healthcare access and utilization in general, as well as access and utilization to a tertiary-pain care center in particular, were evaluated. This study provides new insights into the attitudes and perceptions regarding pain and healthcare services in a diverse patient population that is experiencing chronic pain.

Social stratification, ethnicity, and race influence insurance coverage as well as the ability to pay for healthcare services.^{3,64} Health insurance and prescription coverage were evenly distributed among both groups (i.e., African- and Caucasian Americans) in this study. However, African Americans were less likely to afford medical care and experienced more difficulty paying for healthcare, suggesting that copays may constitute a major financial barrier to healthcare among African Americans who have chronic pain—although other yet-to-be-determined factors may also contribute to these differences in attitude. These results confirm Crystal's work, where the out-of-pocket cost burden was higher among individuals with chronic health conditions and who had Medicaid insurance.⁷¹ Kiefe also found that increases in copay over time was higher amongst African Americans when compared to Caucasian Americans.⁷² Copays are not the only factor limiting access to care. Keife found that despite the use of vouchers in low-income inner-city women, their access to mammography was further limited by transportation difficulties.⁶³

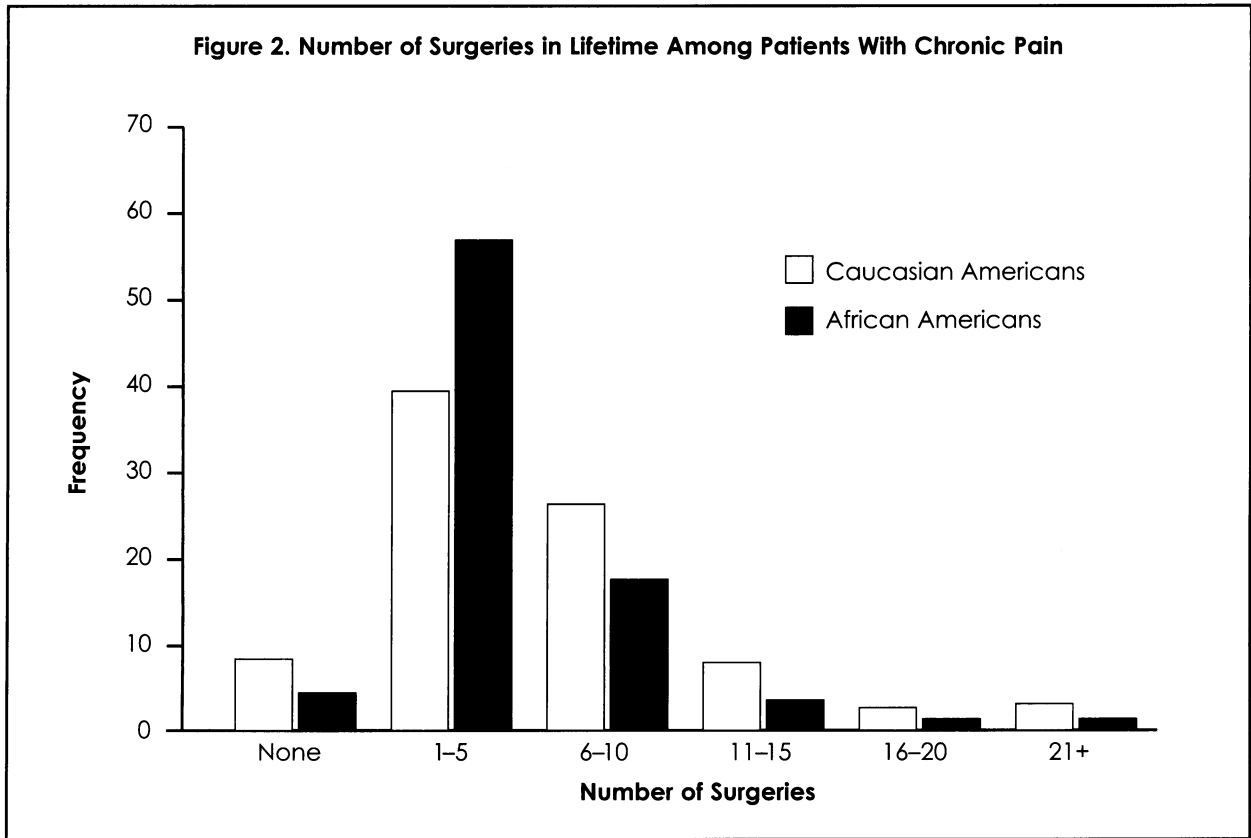
For the poorest Americans, Medicaid provides a safety net which allows access to medical care.⁷³ However, Medicaid often limits the healthcare choices and services available to the patient. Our results in a chronic-pain population revealed that African Americans were more likely to have Med-



icaid and, thus, may be more likely to be underinsured than Caucasian Americans. Miller and Seib's observed that African Americans experienced difficulties in receiving quality care, even when they are covered by insurance.²⁴ Since many pain-management modalities are often not covered or covered less by Medicaid, it follows that the quality of chronic-pain treatment may be affected. This may also reflect differences in access as well as differences in outcomes that may be gender- or race based. In a study of cancer screening services used among women, Krakauer showed that the patient-provider relationship and satisfaction with the healthcare provider was a determinant in continuity of care.⁷⁴ In this study, we identified significant differences that affect chronic-pain management access and utilization, which may differentially affect racial and ethnic minorities. How these differences affect pain management outcomes is unclear and deserves further study.

Pain is the chief complaint for 35 million new

physician office visits and accounts for over 70 million total physician visits annually.^{56,75} The literature suggests that racial and ethnic minorities were at risk for the undertreatment of all types of pain.³⁶ Cleeland showed that physicians tended to underestimate the pain severity of minority patients.³⁸ Consistent with previous research on healthcare utilization patterns, we found significant differences in the source of healthcare for African Americans when compared to Caucasian Americans.¹¹ Although all subjects in this study had access to pain care, African Americans were less likely to have a primary care physician and were also more likely to use the emergency room for pain care than Caucasian Americans. This is an important finding, since others have shown that African Americans as well as other racial and ethnic minorities receive lesser pain care in the emergency room than Caucasian Americans.^{53,76} Husaini showed that older men covered by Medicaid and who had a psychiatric diagnosis tend to use less



outpatient services and more emergency room services than women.⁶³ African Americans with Medicaid insurance had different healthcare service utilization patterns as demonstrated by more emergency room visits. A particularly important finding is that African Americans waited longer to be seen in the pain center but believed that they should have been referred sooner for specialty pain care. Our results also revealed that African Americans used the emergency room more frequently for pain care. Once referred to the pain center, African Americans were more likely to be referred by a female physician. Overall, these findings, which deserve further study, suggest variability prior to treatment and referral to a pain center.

Depression, anxiety, post-traumatic-stress disorder, and other psychological morbidities commonly are present as comorbidities in chronic pain.^{33,57,58} These comorbidities may directly impact healthcare services use in chronic-pain patients. However, some racial and ethnic minority groups may not readily accept services provided through formal agencies. This is consistent with previous research that suggests that African Americans may use alternative

resources and informal sources for mental healthcare.⁷⁷ Ruiz provided information to suggest higher mental health morbidity in African Americans as well as the complexities in providing high-quality mental healthcare to this population.⁷⁸ The studies suggesting that African Americans with chronic pain have increased psychological and physical morbidity make these findings particularly important.^{33,78} Yet, contrary to the findings of others regarding the reluctance of African Americans to seek mental healthcare, our results did not reveal differences in utilization.^{57,58} Further studies directed at cultural differences and insurance issues that may affect access to mental healthcare in a racially and ethnically diverse chronic pain population are necessary.

Important gender and racial differences in attitudes towards pain, health, and healthcare exist.⁷⁹⁻⁸² We also found significant racial and gender differences in attitudes and perceptions regarding healthcare and pain management experiences in this study. Regardless of the subject's gender, there were significant differences in the belief that the patient's gender affected access to healthcare when stratified by gender—with women agreeing more than men.

Significant differences were also found in the perception that ethnicity affects access to pain treatment after stratifying by gender, where African Americans agreed more than Caucasian Americans. When stratified by gender, African-American women believed more that gender affects access to pain treatment and that ethnicity affects access to healthcare. These results are consistent with research by Chin who found that African Americans, especially African-American women with diabetes, were less satisfied with the ease in obtaining a physician.⁶⁵ These perceptions are important considerations, since there is data to suggest that African Americans have less trust in the healthcare system.⁸³ However, differences in attitudes may be only part of the healthcare disparities story. In general, differences in refusal rates for treatment (believed to be higher among African Americans), overuse of clinical services by Caucasian Americans (for which is rarely accounted), and biological differences in clinical presentation or response to treatment may contribute to racial differences in healthcare.¹¹ These contradictory results suggest a need to improve healthcare access measurements as well as identifying potential confounding factors.

Morrison provided convincing data that African Americans may have less access to certain pain medications in their neighborhood pharmacies, despite similar health insurance coverage and similar socioeconomic stratification.⁵⁹ We did not specifically inquire about the respondents' pharmacies or the availability of medication, nor did we collect information on current medications, pain severity, or the quality of chronic-pain management. These additional factors may influence healthcare utilization. Future studies directed at the availability of quality pain management as well as treatment modalities are necessary.

Although we acknowledge several limitations, this study raises important questions regarding healthcare utilization by patients with chronic pain. First, all participants received pain care. Our results may reflect referral patterns to an academic tertiary-care pain center, which may limit the generalizability of our results to other settings. It is possible that healthcare utilization patterns for chronic-pain patients seeking treatment in the community or other pain centers may differ. Second, recall bias is an inherent limitation of all survey research. However, to minimize this potential bias, we limited the time frame to the 12 months prior to study participation. In addition, subjects were

encouraged to complete their responses in a confidential manner to enhance truthful responses. Third, incentives were not used, since they have not been shown to reliably improve response rates in African Americans and may also introduce a response bias. Fourth, the data collection instrument developed for this study was critiqued by faculty members for internal validity, but it was not pretested in patients or subjects. Lastly, to ensure that respondents did not differ from the nonrespondents, a survey was conducted among nonrespondents. It is also important to note that the nonresponse survey revealed no demographic differences between responders and nonresponders.

This study highlights several differences in healthcare utilization, referral, and access that impact the chronic-pain experiences in African Americans when compared to Caucasian Americans. Given the personal distress and economic consequences of chronic pain, this problem deserves further study. Future studies should examine how pain severity and specific psychological problems (e.g., depression, anxiety) influence healthcare referral, utilization, and cost in a racially and ethnically diverse chronic-pain population. We have demonstrated that patient attitudes regarding healthcare access differ based on the patient's race and gender and may influence their willingness to request and accept pain treatment. Healthcare delivery system and trust issues are important to understand in racially and ethnically diverse populations if quality pain care service is to be ensured. Beyond racial and ethnic differences in healthcare access, utilization, and the referral process, future studies must be directed at evaluating the role of gender, aging, and social stratification on the ability to access and utilize pain-management services.

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