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ORIGINAL RESEARCH

Pharmacological Prescribing and Satisfaction with Pain Treatment Among Non-Hispanic Black Men with Chronic Pain

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Introduction: Pharmacological strategies are often central to chronic pain management; however, pain treatment among non-Hispanic Black men may differ because of their disease profiles and healthcare interactions. However, less is known about pain medication prescribing and patients' satisfaction with pain treatment and management among non-Hispanic Black men with self-reported chronic pain.

Purpose: This study assessed factors associated with non-Hispanic Black men being prescribed/recommended narcotics/opioids for chronic pain and their satisfaction with pain treatment/management.

Methods: Data were analyzed from 286 non-Hispanic Black men with chronic pain who completed an internet-delivered questionnaire. Participants were recruited nationwide using a Qualtrics web-based panel. Logistic regression was used to identify factors associated with being prescribed/recommended narcotics/opioids for pain management treatment. Then, ordinary least squares regression was used to identify factors associated with their satisfaction level with the pain treatment/management received.

Results: On average, participants were 56.2 years old and 48.3% were prescribed/recommended narcotics/opioids for chronic pain. Men with more chronic conditions (Odds Ratio [OR] = 0.57, P = 0.043) and depression/anxiety disorders (OR = 0.53, P = 0.029) were less likely to be prescribed/recommended narcotics/opioids. Men who were more educated (OR = 2.09, P = 0.044), reported more frequent chronic pain (OR = 1.28, P = 0.007), and were allowed to participate more in decisions about their pain treatment/management (OR = 1.11, P = 0.029) were more likely to be prescribed/recommended narcotics/opioids. On average, men with more frequent chronic pain (B = −0.25, P = 0.015) and pain problems (B = −0.16, P = 0.009) were less satisfied with their pain treatment/management. Men who were allowed to participate more in decisions about their pain treatment/management reported higher satisfaction with their pain treatment/management (B = 0.55, P < 0.001).

Conclusion: Playing an active role in pain management can improve non-Hispanic Black men's satisfaction with pain treatment/management. This study illustrates the importance of patient-centered approaches and inclusive patient-provider interactions to improve chronic pain management.

Keywords: chronic pain, African American, non-Hispanic Black, men, prescription drugs, opioids, treatment satisfaction

Introduction

More than 50 million Americans are estimated to have chronic pain,[1,2] a condition defined as pain lasting for longer than three to six months.[3] The occurrence of chronic pain has been associated with certain chronic health conditions and comorbidities, increasing age, gender, race/ethnicity, and socioeconomic status.[4,5] Chronic pain can be mild to severe and manifest with physical, mental, or emotional symptomatology.[5,6] Studies have documented associations between chronic pain and psychological distress, anxiety and depression,[7–9] disability,[10] reduced quality of life,[1] loss of employment, and early retirement.[11,12]

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While chronic pain is reported less among men relative to their female counterparts,[4,13] the prevalence of chronic pain among men may be higher than reported.[14–16] Men underreporting chronic pain may be attributed to a combination of lower pain prevalence, lower sensitivity to pain,[17] and social norms, beliefs, and cultural values suggesting that men should show no signs of weakness or vulnerability.[18] Further, compared to non-Hispanic White men, non-Hispanic Black men are at higher risk for chronic pain[19,20] and often face disproportionate socioeconomic-related factors that hinder healthcare access and treatment for chronic pain.[21–23]

Chronic pain assessment and treatment often requires a multidisciplinary team of healthcare professionals.[24–26] However, in healthcare settings, pain among non-Hispanic Black patients is more frequently underestimated and undertreated relative to non-Hispanic White patients.[27–29] Specifically, non-Hispanic Black patients are less likely to receive prescription medications, including opioids and analgesics, to manage their chronic pain.[30–36] Studies have examined the sources of differential and/or undertreatment for pain by race/ethnicity and found that non-Hispanic Black patients received fewer medications because of lower income and insurance coverage[37] as well as the racial biases and stereotypes held by providers, which can influence patient-provider communication.[38,39]

Chronic pain management can take many forms, including over-the-counter medication, prescription medication, surgical procedures, and complementary alternative medicine therapies.[25,40,41] The effectiveness of chronic pain management is largely based on the ability to match the pain management strategy with the type of chronic pain being experienced (eg, location, severity, duration, symptomatology).[42–44] A study assessing the quality of chronic pain care received found that about 10% of patients referred to a pain unit received no analgesic treatment and about 88% received treatments using adjuvant drugs and opioids.[41] Non-Hispanic Black men are less likely to rate the effectiveness of pain treatment as "excellent" or "very good" compared to their non-Hispanic White male counterparts.[45] The satisfaction with chronic pain management is largely contingent on treatment effectiveness,[24,46] but it may also take into consideration the patients' pain management preferences and interactions with healthcare providers.[46]

While much focus is placed on prescribing and treating chronic pain, less attention is given to the patient's satisfaction with the pain treatment, management strategies, and involvement in their care. As such, the purposes of this study were to: 1) identify the factors associated with narcotic/opioid pain medications prescribed or recommended to non-Hispanic Black men with self-reported chronic pain; and 2) examine the factors associated with these men's satisfaction with the results of their pain treatment and management.

Methods

Participants and Procedures

Data were collected from a Qualtrics web-based panel using an internet-delivered questionnaire containing a variety of previously validated scales.[47] The larger study was developed to investigate the interrelationships of health status, preventive health behaviors, and health service utilization among Black and Hispanic men ages 40 years and older with one or more chronic conditions. Qualtrics web-based panels are opt-in research panels that offer access to previously identified research participants with known characteristics. Panel participants are recruited and compensated for their participation by Qualtrics. After being recruited through Qualtrics web-based panel methods, potential participants were directed to the programmed survey, which also included a brief study description and information sheet. Recruitment took place between September and October 2019. A sample of 2028 men meeting study inclusion criteria completed the instrument. All participants were required to review and acknowledge the information sheet prior to completing the online survey. This study was approved by the Institutional Review Board at Texas A&M University (#2018-1684). Additional information about the study and its methodology is reported elsewhere.[47–51]

Based on the specific purposes of this investigation related to chronic pain among non-Hispanic Black men, additional study inclusion criteria were applied. To be included in analyses, all study participants were required to self-identify as non-Hispanic Black or African American and self-report being told by a healthcare professional that they had chronic pain (n = 433). Further, to reduce bias associated with prescribing and treatment access, all study participants were required to self-report visiting their physician or a clinic to find relief from their pain. After applying these study-specific inclusion criteria, the final analytic sample for this study was 286 non-Hispanic Black men with chronic pain.

Measures

Dependent Variables

Two dependent variables were used in this study. First, participants were asked to indicate if their physician or a clinic prescribed or recommended "narcotics or opioids (eg, codeine, hydrocodone, oxycodone, or morphine)" for pain treatment or management. Response choices were "yes" and "no". Second, participants were asked to rate on a scale of 0–10, how satisfied they were with the results of their pain treatment or management. This variable was treated continuously.

Health Indicators

Participants were asked to self-report if a healthcare provider ever told them that they had chronic conditions. Participants were presented with a list of 17 chronic conditions such as asthma/emphysema/other chronic breathing or lung problems, arthritis/rheumatic disease, cancer, diabetes, heart disease, high cholesterol, hypertension, obesity, or a thyroid problem. Response choices were "yes" and "no" for each chronic condition. Responses were summed to generate a continuous variable for the number of self-reported chronic conditions. Self-reported chronic pain and depression or anxiety disorders were omitted from this sum score because they were included as an inclusion criterion or other independent variables of interest. One of the chronic conditions listed, "depression or anxiety disorders" was treated separately as a binary variable and included in the analyses because of these conditions' reciprocal relationship to somatic pain.[47,48]

Pain Indicators

Participants were asked "how frequently in the past six months have you experienced chronic pain (pain that typically lasts more than 12 weeks) that is not due to cancer?" Response choices were hardly ever, infrequently (once or twice over the past 6 months), 2–3 times per month, 1 time per week, 2–3 times per week, and daily. Based on the frequency distribution of these categories, this ordinal variable was treated as continuous. Participants were asked to rate, on a scale of 0–10, their pain in the past week. Higher scores indicated pain was a major problem or concern, and this variable was treated continuously. Participants were also asked "to what extent were you allowed to participate in decisions about your pain treatment/management as much as you wanted?" Responses ranged from 0 (no participation) to 10 (greatest participation possible). This variable was treated continuously.

Sociodemographics

Demographic characteristics of the men included age, education level (ie, high school or less, some college or 2-year degree, 4-year college degree or more), and marital/partner status (ie, married/partnered vs never married/separated/divorced/widowed). Participants were also asked to report if they had current insurance coverage. Response choices were "yes" and "no".

Statistical Analyses

All analyses were performed using SPSS (version 28). Descriptive statistics were calculated for all study variables, which were initially compared by whether participants were prescribed or recommended narcotics or opioid pain medications for their pain. To show descriptive differences, Pearson's chi-square tests were used for categorical variables, and independent sample t-tests were used for continuous variables. A binary logistic regression model was fitted to identify factors associated with being prescribed or recommended narcotics or opioid medications for pain (ie, not being prescribed or recommended narcotics or opioid pain medications served as the referent category). Then, an ordinary least squares regression model was fitted to identify factors associated with how satisfied participants were with the results of their pain treatment or management. Statistical significance was identified at $P < 0.05$.

Results

Table 1 provides details about the sample based on whether their physician or clinic prescribed or recommended narcotics or opioids to treat or manage their pain. On average (± standard deviation), participants were 56.21 (±9.33) years old and reported 3.98 (±1.86) chronic conditions. Approximately 45% of the participants were married or partnered, 23.4% had a high school education or less, and 26.9% had a 4-year college education or more. The majority of participants had health insurance coverage (90.6%) and 42.3% self-reported being told by a healthcare professional that they had depression or anxiety. About

Table 1 Sample Characteristics by Narcotic or Opioid Pain Medications Prescribed or Recommended for Pain

	Total (n = 286)	No (n = 148)	Yes (n = 138)	χ^2 or t	P
Age	56.21 (±9.33)	56.61 (±9.21)	55.78 (±9.47)	0.75	0.456
Education				5.66	0.059
High School or Less	23.4%	28.4%	18.1%		
Some College or 2-Year Degree	49.7%	49.3%	50.0%		
4-Year College Degree or More	26.9%	22.3%	31.9%		
Married/Partnered				0.03	0.857
No	54.9%	55.4%	54.3%		
Yes	45.1%	44.6%	45.7%		
Number of Chronic Conditions	3.98 (±1.86)	3.80 (±2.51)	4.21 (±2.97)	−1.26	0.213
Depression or Anxiety				3.13	0.077
No	57.7%	52.7%	63.0%		
Yes	42.3%	47.3%	37.0%		
Insurance Coverage				0.67	0.412
Has Insurance	90.6%	89.2%	92.0%		
No Insurance	9.4%	10.8%	8.0%		
Chronic Pain Frequency in Past Six Months	3.66 (±1.60)	3.39 (±1.70)	3.96 (±1.45)	−3.11	0.002
Pain Problem in Past Week	6.69 (±2.61)	6.47 (±2.70)	6.93 (±2.51)	−1.50	0.136
Extent Allowed to Participate in Decisions about Pain Treatment/Management	7.05 (±2.87)	6.61 (±3.05)	7.52 (±2.58)	−2.72	0.007

one-half of participants (48.3%) were prescribed or recommended narcotics or opioids to treat or manage their pain. On average, men who were prescribed or recommended narcotics or opioids to treat or manage their pain reported more frequent chronic pain (t = −3.11, P = 0.002) and being allowed to participate to a greater extent in decisions about their pain treatment and management (t = −2.72, P = 0.007).

Table 2 reports findings from the binary logistic regression model explaining factors associated with being prescribed or recommended narcotic or opioid medications for pain. Men with a 4-year college degree or more (Odds Ratio [OR] = 2.09, P = 0.044), those with increasingly frequent chronic pain (OR = 1.28, P = 0.007), and those allowed to participate to a greater extent in decisions about their pain treatment and management (OR = 1.11, P = 0.029) were more likely to be

Table 2 Factors Associated with Being Prescribed or Recommended Narcotic or Opioid Pain Medications for Pain

	B	S.E.	P	OR	95% CI	
					Lower	Upper
Age	−0.02	0.01	0.091	0.98	0.95	1.00
Education: High School or Less	–	–	–	1.00	–	–
Education: Some College or 2-Year Degree	0.46	0.32	0.148	1.59	0.85	2.96
Education: 4-Year College Degree or More	0.74	0.37	0.044	2.09	1.02	4.30
Married/Partnered: No	–	–	–	1.00	–	–
Married/Partnered: Yes	−0.07	0.25	0.790	0.93	0.57	1.54
Number of Chronic Conditions	−0.56	0.28	0.043	0.57	0.33	0.98
Depression or Anxiety: No	–	–	–	1.00	–	–
Depression or Anxiety: Yes	−0.64	0.29	0.029	0.53	0.30	0.94
Insurance Coverage: Has Insurance	–	–	–	1.00	–	–
Insurance Coverage: No Insurance	−0.13	0.46	0.785	0.88	0.36	2.18
Chronic Pain Frequency in Past Six Months	0.24	0.09	0.007	1.28	1.07	1.53
Pain Problem in Past Week	0.00	0.05	0.948	1.00	0.90	1.12
Extent Allowed to Participate in Decisions about Pain Treatment/Management	0.10	0.05	0.029	1.11	1.01	1.21

Note: Nagelkerke R Square = 0.128.

Table 3 Factors Associated with Satisfaction with the Results of Pain Treatment/Management

			t	P	95% CI	
	B	S.E.			Lower	Upper
Age	−0.01	0.02	−0.51	0.614	−0.04	0.02
Education	−0.35	0.21	−1.64	0.101	−0.76	0.07
Married/Partnered	0.25	0.29	0.87	0.386	−0.32	0.83
Number of Chronic Conditions	−0.02	0.06	−0.43	0.668	−0.13	0.09
Depression or Anxiety	−0.36	0.34	−1.07	0.285	−1.03	0.30
No Insurance Coverage	−0.71	0.52	−1.36	0.175	−1.73	0.32
Chronic Pain Frequency in Past Six Months	−0.25	0.10	−2.46	0.015	−0.46	−0.05
Pain Problem in Past Week	−0.16	0.06	−2.63	0.009	−0.29	−0.04
Extent Allowed to Participate in Decisions about Pain Treatment/Management	0.55	0.05	10.33	<0.001	0.44	0.65
Narcotic or Opioid Pain Medications Prescribed or Recommended for Pain	0.03	0.03	0.96	0.336	−0.03	0.09

Note: Adjusted R Square = 0.347.

prescribed or recommended narcotic or opioid pain medications. Men with depression or anxiety disorders (OR = 0.53, P = 0.029) and increasingly more chronic conditions (OR = 0.53, P = 0.043) were less likely to be prescribed or recommended narcotic or opioid pain medications.

Table 3 reports findings from the ordinary least squares regression model explaining factors associated with participants' level of satisfaction with the results of their pain treatment and management. On average, for every unit increase in chronic pain frequency, participants reported significantly lower satisfaction with the results of their pain treatment and management (B = −0.25, P = 0.015). On average, for every unit increase in pain problems in the past week, participants reported significantly lower satisfaction with the results of their pain treatment and management (B = −0.16, P = 0.009). Conversely, on average, for every unit increase in being allowed to participate in pain treatment and management decisions, participants reported significantly higher satisfaction with the results of their pain treatment and management (B = 0.55, P < 0.001).

Discussion

This study examined the pharmacological pain treatments provided to non-Hispanic Black men with self-reported chronic pain and their satisfaction with the pain treatment they received. About 48% of participants reported having narcotic or opioid pain medications prescribed or recommended for their chronic pain, and receiving these prescriptions/recommendations were associated with the patients' education, disease profile, depressive symptomatology, chronic pain frequency, and participation in treatment/management decisions. Further, satisfaction with pain treatment/management was associated with chronic pain frequency, recent pain problems, and participation in treatment/management decisions. Several study findings merit further attention.

In the current study, men with more chronic conditions were less likely to be prescribed narcotics/opioids. More generally, healthcare providers treating patients who have more chronic conditions may avoid providing them with narcotics/opioids to reduce potential drug interaction effects or complications.[52–54] Narcotics/opioids may also impact patients' appetite and ability to perform certain activities, including engaging in disease self-management (eg, proper nutrition, physical activity, sleep quality). Also observed in this study, men who reported depression/anxiety disorders were less likely to be prescribed narcotics/opioids. This could generally indicate that healthcare providers may recognize potential complications associated with providing additional medications to patients with depression. Professionals are encouraged to focus on treating depression rather than the pain; psychotropic medications to treat the depression may help to alleviate pain.[55,56]

In the current study, men with more education were more likely to be prescribed narcotics/opioids, which may create inequity for pain medication access among lesser educated men and those with lower affluence. However, these prescribing behaviors may be protective in that higher education has been associated with less prescription opioid misuse within non-Hispanic Black communities.[57] Further, compared to non-Hispanic Whites, non-Hispanic Black

individuals are less likely to be prescribed opioid medications and are given lower doses when these medications are prescribed.[58,59] Pain medication prescribing differences within the non-Hispanic Black population, and between races, may be attributed to factors such as social determinants of health, perceptions of healthcare providers, and treatment-seeking behavior in various settings. Higher education may also represent higher health literacy levels, which can facilitate a patient's participation in decisions about their pain treatment and management. Further, in the current study, being able to participate in decisions about pain treatment and management was strongly associated with being more satisfied about the treatment they received. Similar studies also reported a relationship between satisfaction with the care received and good healthcare provider-patient interactions, the opportunity for patients to ask healthcare providers questions and offer feedback, and shared decision-making.[60,61]

In the current study, those who experienced less frequent chronic pain in the past six months and reported less pain problems in the past week were more satisfied with the treatment they received. While these findings are intuitive, they could suggest that, through a patient-centered approach, healthcare providers may have listened to and valued their patients and their preferences, which resulted in providing adequate help and support through treatment and management, and ultimately made the patients feel more satisfied.[61–63] This study raises the important issue about appropriate narcotic/opioid prescribing practices for chronic pain. The results suggest that those with more frequent chronic pain over the past six months were prescribed narcotics/opioids. While considered an effective drug for pain management, providers should be generally conscious of the risks associated with their use for individuals of all races. Narcotics/opioids are intended for short-term pain relief;[64,65] longer-term prescribing and use require ongoing patient monitoring to prevent misuse and addiction.[66,67] As with many chronic conditions, the progression of chronic pain and related conditions may require the introduction of complementary, non-pharmacological alternatives for pain management. For example, studies have found that complementary alternative medicine such as yoga, meditation/mindfulness, Tai Chi, acupuncture, or massage[68] could be combined with prescription medication to manage chronic pain.[69,70] Further, to complement traditional pain management treatments, evidence-based programs such as the Chronic Pain Self-Management Program are widely available nationwide in clinical and community settings[71] and have shown to effectively reduce self-reported pain.[72,73]

This study was not without limitations. First, the cross-sectional study design limits possible assessment of causality between variables. Second, the Qualtrics panel used to deliver this online questionnaire may have introduced biases based on affluence and educational attainment, limiting the study's generalizability to other samples of non-Hispanic Black men. Third, all men including in these analyses self-reported being diagnosed with chronic pain and being prescribed narcotics/opioids; however, this diagnosis and medication use was not assessed nor confirmed. Future research should consider using electronic health record data to confirm diagnoses and prescription medications. Further, men were not asked to report the length of time since their chronic pain diagnosis, the duration of their medication use, nor all treatment types they have participated in over time (or the effectiveness of such treatments). Such variables should be considered in future studies. Finally, this study did not assess the possible effect of racial biases on non-Hispanic Black men's satisfaction with the pain management care received.

Conclusion

This study provides a unique glimpse into the chronic pain management experience of non-Hispanic Black men with at least one chronic condition. Our results indicate a complex association between chronic conditions and being prescribed narcotic/opioid medications and satisfaction of pain treatment and management. Specifically, non-Hispanic men with more frequent chronic pain were more likely to be prescribed narcotics/opioids, but men with more chronic conditions and/or depression/anxiety disorders were less likely to be prescribed narcotics/opioids. While allowing non-Hispanic Black men to have shared healthcare decision-making increased their overall satisfaction about pain treatment and management, it should be noted that men with increased decision-making also had increased likelihood of being recommended/prescribed narcotic/opioid pain medications. Generally, healthcare providers should create individualized and closely monitored treatment and management plans to prevent the misuse of these medications, especially since pain tolerance levels vary between patients.[74] For non-Hispanic Black male patients who are ineligible for medication use due to varying factors (eg, mental health disorders), it is important to have other pain treatment and management options readily available (eg, complementary alternative medicine solutions, pain self-management programming). In summary, the findings provide insight into the importance of patient-provider interactions for pain treatment and management and the role men can play in their healthcare decision-making.

Ethical Consideration

Our study was approved by the Texas A&M University Institutional Review Board (#2018-1684). All participants provided consent prior to completing the online survey. The study also complies with the Declaration of Helsinki.

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Disclosure

The authors have no conflicts of interest to disclose.

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