Association Among Opioid Use, Treatment Preferences, and Perceptions of Physician Treatment Recommendations in Patients With Neck and Back Pain

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ABSTRACT

Objective: The purpose of this study was to explore the relationship between self-reported use of opioids by patients with neck and back pain and their demographics, pain characteristics, treatment preferences, and recollections of their physicians' opinions regarding treatment options.

Methods: We analyzed 2017 Gallup Poll survey data from 1680 US adults who had substantial spine pain in the past year and used logistic regression to explore the aforementioned relationships.

Results: Our multiple regression analysis indicated that adults with neck or back pain severe enough to have sought health care within the last year were more likely to have used opioids in the last year if they (in descending order of marginal impact) had pain that had lasted 1 year or less (adjusted odds ratio [OR] = 34.35, 90% confidence interval [CI] 17.56-74.32); concurrently used benzodiazepines (OR = 6.02, 90% CI 2.95-12.33); had Medicaid as an insurance source (OR = 3.29, 90% CI 1.40-7.48); indicated that they preferred to use pain medications prescribed by a doctor to treat physical pain (OR = 3.24, 90% CI 1.88-5.60); or were not college educated (OR = 1.83, 90% CI 1.05-3.25). Compared with patients aged 65 years and older, those aged 18 to 34 years were less likely to have used opioids in the past year (OR = 0.09, 90% CI 0.01-0.40, 0.50 for 95% CI). Respondents' perceptions of medical doctors' positive or negative opinions regarding a variety of neck and back pain treatment options were not significantly associated with opioid use.

Conclusions: Patients with neck and back pain who use opioids differ from those who do not use opioids in that they are more likely to have pain that is of shorter duration, to use benzodiazepines, to have Medicaid as an insurance source, and to prefer to use pain medications. Those characteristics should be considered when developing opioid use prevention strategies. (J Manipulative Physiol Ther 2018;xx:1-6)

Key Indexing Terms: *Back Pain; Analgesics, Opioids; Patient Preference; Spine*

INTRODUCTION

In the United States, back and neck pain substantially contribute to disability[1] and are expensive to treat.[2] In the management of these common musculoskeletal conditions, there is great concern regarding the overuse of opioids and the ramifications. Studies have indicated that opioid prescribing varies considerably across geographic locations in the United States,[3] varies across providers in the same geographic location,[4,5] and is common for patients with back pain (where longer-term opioid use was associated with higher psychological distress, unhealthy lifestyles, and health services use).[6] Patients who initiate opioid use with long-acting agents are more likely to use opioids chronically,[7] and patients with more subjective pain, low pain tolerance, comorbid psychopathologic conditions, and substance use disorders who are young and white are more likely to become addicted to prescription opioids.[8]

Therefore, strategies to avoid prescription opioid addiction include avoiding initial use of opioids.[9] Contrasting characteristics and preferences of patients who use opioids to control pain with those who do not could provide insights into patient-level drivers of opioid use and might inform ways to avoid initial use. Although 2 studies have identified predictors of postoperative opioid use—including

the relationship between "thermal pain and unpleasantness" and patient expectations immediately after cesarean section[10] and the relationship among preoperative tobacco use, diagnosis of alcohol and substance use disorder, mood disorders, and pain syndromes (including neck and back pain) and persistent postoperative opioid use after surgical procedures[11] —we found no studies that explicitly identified patient characteristics that predicted opioid use among back pain patients.

We sought to identify such patient characteristics. A recent nationally representative survey of US adults conducted by the Gallup Organization in the spring of 2017 found that 78% of US adults would prefer to use nondrug therapies before turning to prescription medication.[12] The purpose of this study was, using data from the Gallup survey, to explore the relationship between self-reported use of opioids by patients with neck and back pain and their demographic characteristics, pain characteristics, treatment preferences, and recollection of their physicians' opinions regarding treatment options.

METHODS

The methods used to conduct the survey were similar to those described previously.[13] Briefly, Gallup randomly invited 12 998 members from the Gallup Panel (a probability-based, longitudinal, demographically representative panel of more than 100 000 US adults who do not receive incentives for participation) to participate in the survey; 6305 (48.5% response rate) completed it. Of those, 1680 (27.7%) reported that they had had "neck or back pain that was significant enough that [they] saw a healthcare professional" within the last year. These respondents were asked about duration of pain, personal preferences and history regarding pain medications, recall of their physician's opinions about different treatments for pain, and use of opioids for pain relief. Before conducting the analysis, we used respondents' survey answers to define 2 categories of educational attainment level (less than college educated and college educated or more) and pain duration (1 year or less, or more than 1 year), and we combined their continuous age variable into 4 categorical variables (18-34, 35-49, 50-64, and 65 and older). Palmer College of Chiropractic funded the study and Palmer's Institutional Review Board found the study exempt from further review (number X-2017-6-12-M).

We used SAS (Version 9.4; SAS Institute Inc., Cary, North Carolina) to conduct data analyses. We first conducted bivariate, binary logistic regressions to model of the use of opioids for pain relief with participants' survey responses, wherein we examined 1 patient characteristic at a time, generating unadjusted odds ratios (ORs) with 90% confidence intervals (CIs; presented in parentheses). Then we used likelihood ratio tests and a manual stepwise

Table 1. Demographic Characteristics, Pain Characteristics, and Patient Treatment Preferences of Survey Respondents Who Had Neck or Back Pain Severe Enough to Have Sought Health Care Within the Past Year (n = 1680)

Variables	n	%
Demographic characteristics		
Male sex	789	47.0
Married	1107	66.1
White race	1411	90.7
Aged 18-34 y	127	7.6
Aged 35-49 y	324	19.3
Aged 50-64 y	683	40.7
Aged 65 y or older	543	32.4
Less than college education	942	56.6
Unemployed (including retired)	681	47.7
Underweight body mass index	9	0.6
Normal body mass index	374	23.5
Overweight body mass index	507	31.8
Obese body mass index	705	44.2
Has Medicaid for insurance	115	7.4
Income <$35 000 per year	342	22.0
Pain characteristics		
Duration of 1 y or less	366	22.0
Pain occurred more than half of days in the last 6 mo [a]	73	29.4
Patient treatment preferences		
"I prefer to take pain medications prescribed by a doctor to treat physical pain" (vs "I prefer to try other ways to treat physical pain before taking pain medications prescribed by a doctor")	443	26.5
Used opioids for pain control	82	4.9
Also took benzodiazepines for pain relief	46	2.7
Has never been to a chiropractor	386	23.1

[a] Variable only available for 248 respondents; other variables missing from 0 to 132 respondents.

approach considering all explanatory variables with P values ≤ .10 in the bivariate results to produce a single multiple logistic regression model that retained all explanatory variables that had P values ≤ .10. We used profile-likelihood confidence intervals because they are robust to