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Prevalence of Non-Pharmacologic and Pharmacologic Therapies among Non-Cancer Chronic Pain Associated Ambulatory Care Visits, 2016

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Introduction

An estimated 20.4% of US adults had chronic pain in 2016.¹ Opioids are often prescribed for treating chronic pain, but evidence suggests that benefits may be limited, while harms may include addiction, overdose, and death.^{2,3} The 2016 *CDC Guideline for Prescribing Opioids for Chronic Pain* (CDC Guideline) recommends non-pharmacologic and non-opioid pharmacologic therapies as the preferred therapies for chronic pain.³ Prior research has examined opioid and non-opioid pharmacologic therapies,⁴ little is known about how non-pharmacologic therapies are utilized for chronic pain. This study examined the prevalence of non-pharmacologic and pharmacologic (opioid and non-opioid) therapies among ambulatory care visits with a non-cancer chronic pain associated primary diagnosis.

Methods

Data from the 2016 National Ambulatory Medical Care Survey (NAMCS), a national survey of patient visits to non-federal office-based physicians providing primary care,⁵ were used. Visits by adults (>18 years) with a primary diagnosis associated with chronic

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pain were identified using International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) codes (Appendix Table 1) and an indication of “major reason for this visit” as “chronic problem” (routine or flare-up).

The prevalence of opioid, non-opioid, and/or non-pharmacologic therapies commonly used to treat chronic pain were calculated. Prescriptions were classified using Multum drug codes for generic medications (Appendix Table 2). Opioid cold and cough products and buprenorphine formulations typically used to treat opioid use disorder were excluded. Non-opioid prescriptions included nonsteroidal anti-inflammatory drugs (NSAIDs), analgesics/antipyretics, certain anticonvulsant and antidepressant medications used to treat pain, and prophylactics for gout and migraines. Three types of non-pharmacologic therapies used to ameliorate chronic pain that were either ordered or provided during the visit were examined: 1) exercise counseling; 2) physical therapy; and 3) lifestyle modification counseling (including diabetes education, diet/nutrition, and weight reduction).³ Analyses were conducted in 2019 using Stata version 15 and survey weights to account for complex sampling design. Outcomes for chronic pain associated and all other visits were compared; visits with an indication of cancer were excluded from both categories.

Results

Of the 51.5 million chronic pain associated visits, 29.6% involved non-pharmacologic therapy (alone or in combination with other therapies) (Table 1). Opioids were prescribed in 26.3% of chronic pain associated visits (5.2% involved opioids only, 21.1% involved opioid and non-opioid therapies), while non-opioids were prescribed in 53.0% of such visits. Among chronic pain associated visits, 11.9% involved non-opioid and opioid prescriptions together, while 10.4% involved non-opioids combined with non-pharmacologic therapy. Approximately one-quarter of chronic pain associated visits (28.0%) did not have a therapy outcome assessed in this study. Except for non-pharmacologic therapy alone, all therapies were more commonly utilized for chronic pain associated visits than other visits. Among chronic pain associated visits, 13.7% of visits involved exercise counseling, 8.6% involved physical therapy, and 19.0% involved lifestyle modification counseling.

Discussion

While non-pharmacologic therapy is used in combination with pharmacologic therapy among chronic pain associated primary care visits, opportunities remain to increase utilization in-line with the CDC Guideline recommendations.³ Overall, 29.6% of visits associated with chronic pain received non-pharmacologic therapy, while 26.3% received an opioid prescription, alone or in combination with other therapies. Barriers to greater use of non-pharmacologic therapies may include patient difficulty accessing services, low reimbursement for non-pharmacologic therapies, and patient demand for pharmacologic as opposed to non-pharmacologic therapies.⁶ Broader insurance reimbursement and more patient education about different treatment strategies for pain could increase the use of non-pharmacologic and non-opioid therapies for chronic pain.

Limitations of this study include the inability to identify prescriptions filled or services received after referral. Prescriptions are not linked to diagnosis, precluding differentiation between medications prescribed for chronic pain versus other conditions. Over-estimation of use of non-opioid pharmacologic therapies for chronic pain is possible, particularly for medications such as antidepressants and anticonvulsants with multiple approved indications and off-label uses. Patients experiencing chronic pain not assigned an identified primary diagnosis ICD-10-CM code, as well as use of over-the-counter medications, are not captured. Further sub-group analysis was limited by small sample size; earlier years of data were not included due to the 2015 ICD-10-CM transition. Despite these limitations, this study is one of the first to provide important insights into how primary care providers are utilizing non-pharmacologic therapies in treatment plans for chronic pain associated diagnoses.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Table 1.

Non-Pharmacologic and Pharmacologic Therapy Prevalence among Chronic Pain Associated Diagnosis and All Other Visits, 2016

	Chronic Pain Associated		All Other	
	Visits, <i>n</i>	% (95% CI)	Visits, <i>n</i>	% (95% CI)
Total	51,513,881	8.1% (6.5, 10.1)	582,585,702	91.9 (89.9, 93.5)
Therapy Category				
Non-Pharmacologic Only	5,209,805	10.1 (6.2, 16.1)	52,617,941	9.0 (7.2, 11.4)
Opioid Only	2,696,752	5.2 (3.4, 7.9)	17,378,550	2.9 (2.3, 3.6)
Non-Opioid Pharmacologic Only	13,053,900	25.3 (18.3, 34.0)	110,007,338	14.4 (12.5, 16.4)
Non-Pharmacologic and Non-Opioid Pharmacologic	5,334,735	10.4 (6.9, 15.2)	35,108,307	4.6 (3.6, 5.8)
Non-Pharmacologic and Opioid	1,907,222	3.7^a (1.8, 7.5)	3,760,222	0.5 (0.3, 0.8)
Opioid and Non-Opioid Pharmacologic	6,104,637	11.9 (7.6, 18.1)	25,058,901	3.3 (2.7, 3.9)
Non-Pharmacologic, Opioid, and Non-Opioid Pharmacologic	2,805,168	5.5^a (3.4, 8.7)	9,734,795	1.3 (0.9, 1.9)
No Treatment	14,401,662	28.0 (20.8, 36.4)	354,997,683	60.9 (57.5, 64.3)
Any Non-Pharmacologic or Pharmacologic Therapy				
Any Opioid (Alone or in Combination with Other Therapies)	13,513,779	26.3 (20.8, 32.5)	55,932,468	7.3 (6.3, 8.4)
Any Non-Opioid Pharmacologic (Alone or in Combination with Other Therapies)	27,298,439	53.0 (43.4, 62.4)	179,909,341	23.5 (21.1, 26.1)
Any Non-Pharmacologic (Alone or in Combination with Other Therapies)	15,256,930	29.6 (21.7, 38.9)	137,302,965	17.9 (15.1, 21.1)
Prevalence of Non-Pharmacologic Therapy by Type				
Exercise Counseling	7,048,404	13.7 (9.0, 20.4)	63,876,269	8.3 (6.5, 10.6)
Physical Therapy	4,431,030	8.6 (5.5, 13.1)	16,768,517	2.2 (1.3, 3.6)
Lifestyle Modification Counseling	9,784,612	19.0 (13.4, 26.2)	113,022,317	14.7 (12.1, 17.8)

^aEstimates based on fewer than 30 unweighted observations and/or with a relative standard error > 0.30 are considered unreliable by the standards of the National Center for Health Statistics.

Notes: Authors' analysis of the 2016 National Ambulatory Medical Care Survey data. Boldface indicates statistical significance ($p < 0.05$) comparing prevalence among chronic pain associated visits to all other visits. Number of visits ($n = 634,099,583$; unweighted $n = 10,023$) and percentages are weighted to represent visits to nonfederally employed office-based physicians in the U.S.