Benzodiazepines Prescribed With and Without Opioids:

A Cross-Sectional Study of Data From the National Ambulatory Medical Care Survey 2018–2019

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he number of annual ambulatory visits with a prescription of benzodiazepine increased from 27.6 million in 2003 to 65.9 million in 2016.^{1,2} Despite the majority of benzodiazepine-related overdose deaths also involving opioids, coprescription of benzodiazepines and opioids increased from 0.5% of physician office visits in 2003% to 2% in 2015.1,3 The objective of this study was to analyze the National Ambulatory Medical Care Survey (NAMCS) data from 2018 to 2019 to calculate the more recent changes in rates and percentages of benzodiazepine prescription after the release of the Centers for **Disease Control and Prevention** (CDC) guidelines for prescribing opioids for chronic pain in response to the opioid epidemic in 2016.4

Methods

We performed a secondary analysis of publicly available de-identified data for 2018-2019 obtained from NAMCS, a national sample of office-based physician visits.⁵ The methodology of NAMCS is reported elsewhere.6 Opioids were defined using the Cerner Multum third-level therapeutic category codes for narcotic analgesics (code 60) and narcotic analgesic combinations (code 191). In contrast, benzodiazepines were defined using the category code for anxiolytics, sedatives, and hypnotics (code 69) and category code benzodiazepine anticonvulsant (code 203).

We analyzed data using the sampled visit weight, adjusted to yield an unbiased national estimate, and examined all 30 medications listed in the survey. Estimates were determined using IBM SPSS statistics version 28 with a complex sampling module, which considers the clustered nature of the sample. Data for adult visits (aged ≥18 years) and elderly visits (aged ≥60 years) were also analyzed. The groups included in this analysis were visits with benzodiazepines prescribed, visits with opioids prescribed, and visits with both benzodiazepines and opioids prescribed.

Population-based rates (visits per 100 adults) were calculated using estimates from the US Census Bureau.⁷ Annual visits were calculated as a mean of the visits made in 2018 and 2019. All estimates were based on over 30 unweighted samples with a relative standard error < 30%. The study was exempt from institutional review due to the use of publicly available data.

Results

Benzodiazepines were prescribed in 6.8% of all adult visits, comprising 56 million annual visits to the physician's office (22 per 100 adults) between 2018 and 2019. Thirty million annual visits involved elderly adults (40.5 visits per 100 elderly adults) (Table 1). Opioids were prescribed in 76 million adult yearly visits, of which 39.5 million involved elderly adults (Table 1).

Fifteen million adult annual visits involved a coprescription of opioids and benzodiazepines (5.9 visits per 100 adults/1.9% of adult visits). Also, 27% of adult patient visits that involved benzodiazepines also had at least 1 opioid prescription.

Table 1.

Benzodiazepine and Opioid Visits in the US Ambulatory Setting (2018–2019 combined visits)^a

Unweighted	Weighted (in thousands)	95% CI (in thousands)	
		Lower	Upper
15,885	1,631,168	1,514,846	1,747,491
8,387	820,026	751,821	888,232
1,266	152,389	136,920	167,857
648	78,811	70,485	87,138
1,005	111,657	98,271	125,043
534	59,805	52,698	66,912
229	30,496	25,101	35,892
118	15,444	13,844	17,043
	Unweighted 15,885 8,387 1,266 648 1,005 534 229 118	Weighted (in thousands)15,8851,631,1688,387820,0261,266152,38964878,8111,005111,65753459,80522930,49611815,444	Weighted (in thousands) 95% Cl (in Lower 15,885 1,631,168 1,514,846 8,387 820,026 751,821 1,266 152,389 136,920 648 78,811 70,485 1,005 111,657 98,271 534 59,805 52,698 229 30,496 25,101 118 15,444 13,844

^aData from National Ambulatory Medical Care Survey 2018 and 2019. ^bAged ≥18 years. ^cAged ≥60 years. Further, 7.5 million annual visits involved elderly adults coprescribed benzodiazepines and opioids (Table 1).

Discussion

The annual physician office visits involving benzodiazepine prescriptions decreased from 65.9 million (2014–2016)⁷ to 56 million (2018–2019). Coprescriptions of benzodiazepines and opioids decreased from 23 million to 15 million adult annual visits. The percentage of benzodiazepine visits with coprescriptions of opioids decreased from 35% to 27% in 2018–2019. Additionally, 1.9% of all adult visits involved the coprescription of benzodiazepines and opioids in 2018–2019.

These findings indicate a decreasing trend in prescribing benzodiazepines, both with and without opioids, during physician office visits. Our study results align with previous research conducted by Marwitz and Noureldin⁸ and Zhang et al,9 albeit with methodological differences. While Marwitz and Noureldin⁸ relied on the National Health and Nutrition Examination Survey, which is subject to recall bias, Zhang et al⁹ utilized the IQVIA Longitudinal Prescription (LRx) database, which is unweighted and not nationally representative. The strength of our study lies in using the NAMCS dataset, which is based on chart review and provides nationally representative data.

These studies also reported a decline in the simultaneous prescription of opioids and benzodiazepines after 2016, likely due to policy and regulatory changes, including recommendations against their concurrent use, boxed warnings issued by the US Food and Drug Administration regarding the risk of an opioid overdose when used with benzodiazepines, and prescribing restrictions on first-time opioid prescriptions by certain states.¹⁰

However, there are some limitations to consider. The NAMCS dataset represents visits rather than individual patients and lacks information on dosage, adherence, and the number of refills provided. A parallel increase in refill prescriptions may have accompanied the decrease in benzodiazepine visits. Additionally, the results can only be generalized to nonfederal office-based physician practices.

Conclusion

Benzodiazepine visits decreased in 2018–2019, both with and without opioids, in the nonfederal physician's office. Although this finding is encouraging, a deeper analysis is needed to understand the associated factors.

Article Information

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