

CORRESPONDENCE

Research Letter

The Role of Private Prescriptions in Benzodiazepine and Z-Drug Use

A Secondary Analysis of Office-Based Prescription Data

The use of benzodiazepines and so-called Z-drugs remains high in many countries, despite warnings and restrictions on prescription (1). They are often indicated for the treatment of insomnia, but the benefits are marginal and there are risks of tolerance, dependence, and an increased danger of falling (2).

For those with statutory health insurance (SHI), the SHI providers cover the cost of these medications, but physicians can also issue private prescriptions to persons with SHI at the latter's own expense. One motive for this could be the masking of long-term prescription of benzodiazepines in order to comply with the requirement for only short-term use. On the other hand—especially in the case of prescription on demand—physicians may issue private prescriptions, with the associated costs, to make patients aware of their own responsibility.

Private prescriptions are not recorded by the SHI providers. Therefore, reports of a decline in benzodiazepine and Z-drug prescriptions that are based on SHI statistics (3) could be misleading and underestimate the dangers of these drugs, e.g., dependency. This study set out to analyze how many private prescriptions for benzodiazepines and Z-drugs had been issued to persons with SHI over the previous 6 years.

Methods

This secondary analysis used anonymized prescription data obtained from office-based physicians, as provided by the Disease Analyzer database (4). This database embraces around 2500 practices from across the whole of Germany selected by region, speciality, and physician age. The database's good agreement with

representative German health data in terms of the incidence and prevalence of major chronic disorders (4) renders it suitable for use in pharmacoepidemiology studies.

We included all SHI patients who received a benzodiazepine or Z-drug prescription between 1 January 2014 and 31 August 2020. The drugs were benzodiazepine anxiolytics (Anatomic Therapeutic Chemical code [ATC code] N05BA), benzodiazepine hypnotics/sedatives (N05CD), or Z-drugs (N05CF). Prescriptions were classified as SHI prescriptions or private prescriptions (paid for by the patient).

Results

Between 2014 and August 2020, 267 260 persons with SHI received prescriptions for a benzodiazepine or a Z-drug; of these, 160 243 patients received a benzodiazepine anxiolytic, 17 302 a benzodiazepine hypnotic/sedative, and 122 884 a Z-drug. Nearly 61% (1 337 696/2 200 446) of the prescriptions were SHI prescriptions, 38.2% (841 591/2 200 446) were private, and < 1% could not be classified.

Patients with private prescriptions were on average 4 years older than those with SHI prescriptions (68.6 vs. 64.5 years); the sex distribution was almost identical, with 65% female patients for private prescriptions and 63.9% for SHI prescriptions (63.9%). Private prescriptions were issued particularly often for Z-drugs (48.1%), followed by benzodiazepine hypnotics/sedatives (45.0%) and anxiolytics (25.2%).

The SHI prescriptions of benzodiazepines and Z-drugs decreased by a total of 10% between 2014 and 2019 (Table).

TABLE

Prescriptions of benzodiazepines and Z-drugs in the period 2014–2020

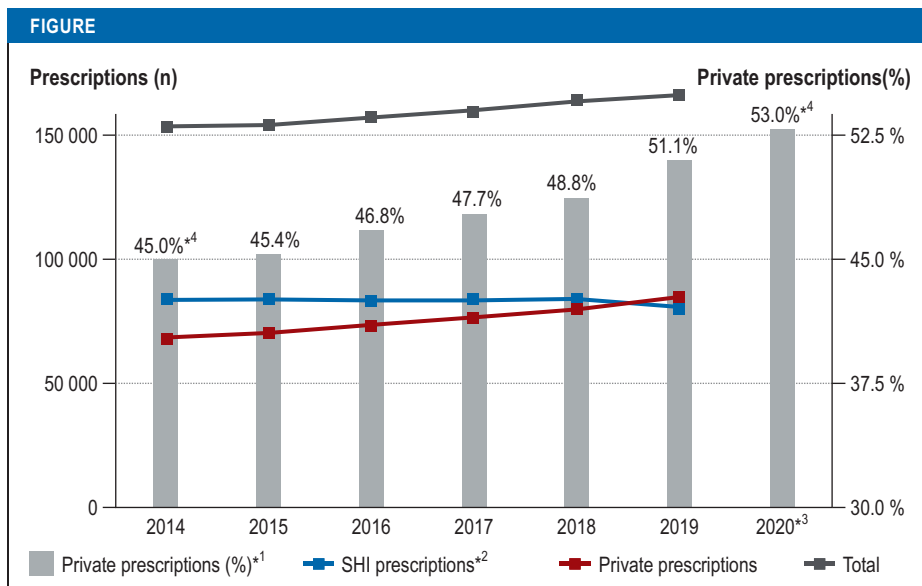
	Total prescriptions	SHI prescriptions *1	Private prescriptions *2	
	(n)	(n)	(n)	%
2014	341 621	212 438	124 244	36.4%
2015	335 826	208 274	123 054	36.6%
2016	332 347	203 970	124 144	37.4%
2017	326 545	199 421	124 229	38.0%
2018	326 119	197 078	126 888	38.9%
2019	323 785	191 719	130 523	40.3%
2020 *3	214 203	124 796	88 509	41.3%
Sum	2 200 446	1 337 696	841 591	38.2%
Change *4	-5%	-10%	5%	

*1 Prescriptions covered by statutory health insurance (SHI)

*2 Only for SHI patients

*3 January to August 2020

*4 Change between 2014 (= 100%) and 2019



Prescription of Z-drugs in the period 2014–2020

The columns show the proportion of private prescriptions in percent; the curves, the absolute number of prescriptions

- *¹ Only for SHI patients
- *² Prescriptions covered by statutory health insurance (SHI)
- *³ January to August 2020
- *⁴ The results are nearly identical if one takes the defined daily doses (DDD) instead of the number of prescriptions: the proportion of DDD for private prescriptions increased from 45.9% (2014) to 53.6% (2020).

Simultaneously, the number of private prescriptions increased by 5%, thus halving the overall decrease in prescriptions from 10% to 5%. The rise in the number of private prescriptions went along with an increase of their proportion from 36% of all benzodiazepines and Z-drugs (2014) to 41% (2020).

While the proportion of private prescriptions for anxiolytics remained stable at 25%, for Z-drugs it increased from 45% (2014) to 53% (2020) (Figure). Based on SHI prescriptions alone, Z-drug use fell by 4% from 2014 (n = 84 131) to 2019 (n = 81 015), although there was actually a rise of 8% overall (from 153 526 to 166 210) because of a marked increase in private prescriptions by 23% (from 69 069 to 84 944).

Discussion

The proportion of private prescriptions for benzodiazepines and Z-drugs issued to persons with SHI has increased from 36% to over 40% in the past 6 years. An older study (5) found that private prescriptions made up 40% of all prescriptions for benzodiazepines and Z-drugs filled by pharmacists in the years preceding 2012. However, the study was based on aggregated data and overestimated the proportion of the prescriptions for SHI patients that were private, because the (private) prescriptions for the approximately 11% of patients insured privately were included in the data. Although the findings were alarming, the proportion of private prescriptions did not decline; in contrast, our results show a further increase. In the case of Z-drugs there has even been a rise in total prescriptions, i.e., the sum of SHI and private prescriptions, from 2014 onwards.

The German Drug Prescription Report (*Arzneiverordnungs-Report*) has regularly announced a decrease in benzodiazepine SHI prescriptions during the past decades, and in Z-drugs since 2010 (3). Our results raise doubts about the magnitude of this decrease—or whether it has really happened at all—particularly for Z-drugs. The almost 23% increase in the number of private

prescriptions issued between 2014 and 2019 led to a net increase of 8% for Z-drug prescribing, contradicting the alleged reduction in these medications. Our findings leave little room for hope and optimism regarding the use of benzodiazepines and Z-drugs. The use of private prescriptions for benzodiazepines and Z-drugs should be discussed openly without attaching blame to doctors or patients. More information is needed to improve understanding of the role of patients and the motives of physicians leading to the frequent issuing of private prescriptions for these drugs.

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Conflict of interest statement

The authors declare that no conflict of interest exists.

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