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Searching for factors that may reduce the use of benzodiazepines in hospitals – a survey of hospital doctors and nurses

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Key words

benzodiazepines
– attitudes of health
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Abstract. A chart review at a mid-sized German general hospital found a high usage of benzodiazepines among older patients. Therefore, all doctors and nurses of this hospital were surveyed about the benefits and risks of benzodiazepines that they considered to be the strongest and their own overall assessment of the risk-benefit ratio for their patients. Response rate was 54% (63/116) for doctors and 30% (73/243) for nurses. “Reduced fear or agitation” was perceived by many doctors (71%) and nurses (49%) to be a strong benefit of benzodiazepines. With regards to the overall risk-benefit ratio, doctors who indicated that “falls” and/or “craving” often occur in combination with benzodiazepines were more likely to estimate that the risks of benzodiazepines outweigh the benefits. For nurses, “confusion” strongly influenced their overall assessment of the risk-benefit ratio. The results of this study will be incorporated into interventions for reducing benzodiazepine prescriptions.

Introduction

A hospital chart review found a high usage of benzodiazepines among older patients (28%), especially in those with sleeping problems, including many potentially-inappropriate prescriptions according to the German PRICSUS list [1]. From other studies, we know that hypnotics and sedatives, such as benzodiazepines, are still often administered in primary care, nursing homes, and hospital settings [2] – in spite of well-known safety concerns, such as craving, confusion, and increased falls [3].

Even though there have been calls to reduce the use of benzodiazepines in hospitals [4], there is a lack of evidence-based recommendations about how to reach this aim. In particular, little is known about the reasons for benzodiazepine use from the pre-

scriber perspective, especially in hospitals. Underlying beliefs and values, perceptions of innovation, and an individual’s overall assessment of a drug’s risk-benefit ratio all influence prescribing [5].

Therefore, it is important to know which benefits and risks of benzodiazepines doctors and nurses consider strongest and which of these factors are closely associated with their own individual overall assessment of the risk-benefit ratio of these drugs. This knowledge could help to tailor interventions to reduce the use of benzodiazepines in hospitals.

Materials and methods

Context

In a mixed-methods project, we strive to gain knowledge about the current use of sedatives and hypnotics in hospitals and primary-care settings [6]. The data reported here come from a survey performed between June and September 2014 of doctors and nurses about psychotropic drugs. The study was approved by the Ethics Committee of Göttingen University Medical Center (25/2/14). Parts of the survey results have already been analyzed [7].

Design, participants, and measures

In a cross-sectional survey, all physicians and nurses of a mid-sized to large-sized German general hospital received a paper questionnaire on risks and benefits of benzodiazepines. In order to raise the survey response rate, reminders were sent out, and the hospital staff were informed about the study and encouraged to participate during routine meetings.

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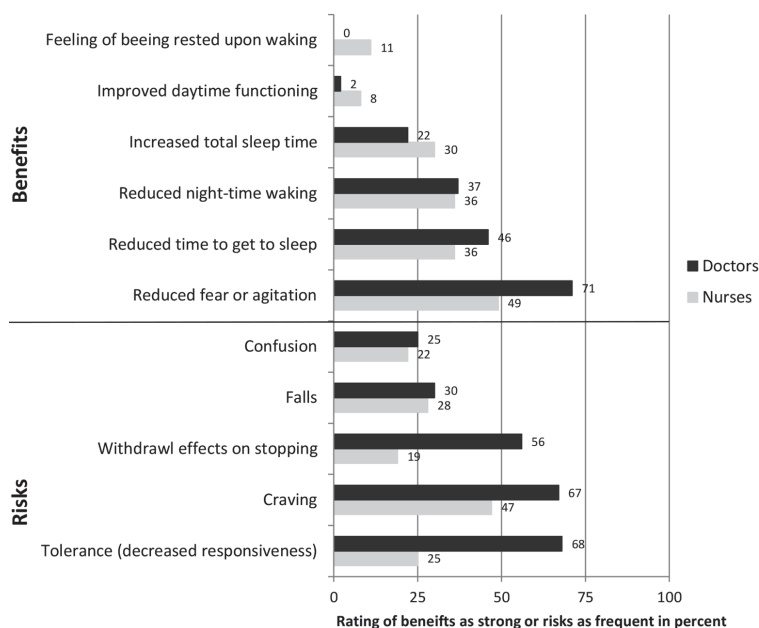


Figure 1. Percentage of hospital doctors and nurses who rated a benefit as strong or a risk as frequent.

The questionnaire was developed by Siriwardena et al. [8] to explore practitioners' beliefs about the benefits and risks of hypnotic prescribing. Hoffmann [9] translated the questionnaire into German for a survey of German general practitioners, and our study group adapted it to the hospital setting.

The questionnaire first requires the respondents to rate their overall assessment of risk-benefit ratio, i.e., whether in their view the benefits of benzodiazepines outweigh the risks or vice versa or whether risks and benefits are equal. Then, they are asked to rate the extent of different benefits ("very small" to "very strong") and the frequency of different risks ("never" to "always") on a 5-point scale.

Statistical analysis

We analyzed how many doctors and nurses rated the different benefits as "strong" or "very strong" and how many rated the frequency of different risks as "often" or "always" on a 5-point scale. Using multivariate logistic regressions, we then determined to what extent each individually-rated risk and benefit influenced the overall perception that the risks of benzodiazepines outweigh their benefits, with adjusted odds ratios (ORs) and their 95% confidence intervals (CI). All analyses were performed using SAS 9.4.

Results

More than half of the doctors (63/116) and approximately one-third of nurses (73/243) filled in and returned the study questionnaire. Many doctors (71%) and nurses (49%) rated "reduced fear or agitation" as a strong or very strong benefit (Figure 1). The majority of doctors perceived "tolerance" (68%), "craving" (67%), and "withdrawal" (56%) to be frequent risks of benzodiazepines. For nurses, the most frequently-perceived risk was "craving" (47%). Approximately one-quarter of participants from both professional groups considered "falls" and "confusion" to be frequent risks of benzodiazepines.

20 (27%) nurses and 30 (48%) doctors perceived the risks of benzodiazepines to outweigh the benefits, while 29 (40%) nurses and 12 (19%) doctors had the opposed perception. The remainder (24 nurses and 21 doctors) assessed that the risks and benefits were equal. In the following, we only compare those respondents who perceived the risks to outweigh the benefits versus all others.

The item "falls" most strongly predicted how an individual doctor assessed the overall risk-benefit ratio of benzodiazepines (Table 1). Of those doctors who rated "falls" as happening often or always, 79% (15/19) perceived the risks of benzodiazepines to outweigh the benefits. Vice versa, of those who did not rate "falls" as happening often or always, only 34% (15/44) did so. This strong association between "falls" and the overall risk-benefit ratio resulted in an adjusted OR of 12.04 (95% CI 1.72 – 84.54). "Craving", too, was a significant and strong predictor for a doctor's assessment that risks outweigh the benefits.

For nurses, "increased sleep time" predicted their individual overall assessment of risk-benefit ratio of benzodiazepines (Table 1). Of those nurses who rated "increased sleep time" a strong benefit, only 13% (3/22) perceived the risks of benzodiazepines to outweigh the benefits. Vice versa, of those who did not rate "increased sleep time" a strong benefit, one-third (17/51) did so. This resulted in a tremendously low OR of 0.08 that is easier to understand if we change the criterion – benefit instead of risk – and use the reciprocal value of the odds – 12.5 instead of 0.08. That means a nurse who rates "increased sleep time" to be a strong benefit

Table 1. Predictors for the global assessment that the risks of benzodiazepines outweigh the benefits.

Predictors	Nurses				Doctors			
	Risks outweigh the benefits				Risks outweigh the benefits			
	Yes (n = 20)		No (n = 53)		Yes (n = 30)		No (n = 33)	
	n	(%)	n	(%)	n	(%)	n	(%)
Benefits								
Reduced time to get to sleep								
Strong*	6	(23)	20	(77)	14	(48)	15	(52)
Not strong	14	(30)	33	(70)	16	(47)	18	(53)
Adjusted OR (95 % CI)**	2.55 (0.51 – 12.71)				1.33 (0.38 – 4.62)			
Reduced night-time waking								
Strong	9	(35)	17	(65)	11	(48)	12	(52)
Not strong	11	(23)	36	(77)	19	(48)	21	(53)
Adjusted OR (95 % CI)	3.45 (0.70 – 17.13)				0.71 (0.19 – 2.66)			
Increased total sleep time								
Strong	3	(14)	19	(86)	9	(64)	5	(36)
Not strong	17	(33)	34	(67)	21	(43)	28	(57)
Adjusted OR (95 % CI)	0.08 (0.01 – 0.72)				3.14 (0.63 – 15.69)			
Reduced fear or agitation								
Strong	7	(19)	29	(81)	20	(44)	25	(56)
Not strong	13	(35)	24	(65)	10	(56)	8	(44)
Adjusted OR (95 % CI)	0.24 (0.05 – 1.22)				0.71 (0.18 – 2.83)			
Risks								
Falls								
Frequent***	10	(50)	10	(50)	15	(79)	4	(21)
Not frequent	10	(19)	43	(81)	15	(34)	29	(66)
Adjusted OR (95 % CI)	1.94 (0.36 – 10.58)				12.04 (1.72 – 84.54)			
Confusion								
Frequent	11	(69)	5	(31)	11	(69)	5	(31)
Not frequent	9	(16)	48	(84)	19	(40)	28	(60)
Adjusted OR (95 % CI)	24.96 (3.40 – 183.00)				0.53 (0.07 – 3.91)			
Craving								
Frequent	13	(38)	21	(62)	24	(57)	18	(43)
Not frequent	7	(18)	32	(82)	6	(29)	15	(71)
Adjusted OR (95 % CI)	2.60 (0.51 – 13.32)				7.51 (1.32 – 42.72)			
Withdrawal effects on stopping								
Frequent	6	(43)	8	(57)	19	(54)	16	(45)
Not frequent	14	(24)	45	(76)	11	(39)	17	(61)
Adjusted OR (95 % CI)	2.36 (0.32 – 17.35)				0.53 (0.10 – 2.87)			
Tolerance (decreased responsiveness)								
Frequent	7	(39)	11	(61)	21	(49)	22	(51)
Not frequent	13	(24)	42	(76)	9	(45)	11	(55)
Adjusted OR (95 % CI)	1.06 (0.16 – 6.98)				0.46 (0.09 – 2.47)			

*„strong“ = those who rated the benefits to be strong or very strong; **OR = odds ratio; 95 % CI = 95 % confidence interval; ***„frequent“ = those who rated the risks to happen often or always; bold type = significant (0.05).

is ~ 12 times more likely than the remainder to perceive the benefits of benzodiazepines to outweigh the risks. “Confusion” was a further significant and strong predictor for a nurse’s assessment that risks outweigh benefits.

Discussion

Doctors rated benzodiazepines as strong drugs – both in benefits, such as “reduced fear or agitation”, and risks, such as “craving”. Nurses estimated the benefits and risks of benzodiazepines to be somewhat weaker

than doctors did. For many doctors, the risks of benzodiazepines outweighed the benefits if they rated “falls” or “craving” as a frequent risk; for nurses, it was “confusion” and if they did not consider “increased sleep” a benefit.

Up to now, hospital doctors and nurses have not been surveyed about their perception of risks and benefits of hypnotics using this instrument. A previous German study using this questionnaire [9] found that for most general practitioners (63%) the risks of benzodiazepines outweighed the benefits, whereas only some hospital doctors (48%) and nurses (27%) in our study shared this opinion.

The item “reduction of fear and agitation” was added to the original questionnaire in order to adapt it to the hospital setting. Some benzodiazepines, e.g., lorazepam, not only help induce sleep, but also have a strong effect in reducing anxiety. Indeed, most hospital doctors and nurses in our study perceived “reduction of fear and agitation” as a strong benefit of benzodiazepines. Only a few participants perceived that patients have a “feeling of being rested upon waking” or “improved daytime functioning”. These results are in line with results from studies surveying British [8] and German [9] general practitioners.

Most hospital doctors in our study perceived “craving”, “tolerance”, and “withdrawal” to be frequent risks of benzodiazepines, corresponding to the above-mentioned surveys with general practitioners in Great Britain [8] and Germany [9]. The nurses in our study did not share this view, however, and rated these risks to be less frequent than doctors did. Since only approximately one-quarter of our study participants perceived “confusion” and “falls” to be frequent risks of benzodiazepines, awareness of these serious effects, which directly reduce the patient’s quality of life, seems to be low.

A limitation of the study is the relatively small sample size, with consequently rather large confidence intervals for the multivariate logistic regression. The results of a single-hospital study are – of course – not generalizable for other settings. However, a strength of the study is that we were able to investigate more deeply within the setting of a single hospital, the prescription patterns in the patients’ charts alongside the beliefs and attitudes of the doctors and nurses who are

responsible for these charts. Also, more than half of the hospital’s doctors participated in the study, even though doctors’ willingness to participate in surveys is generally limited.

We first would like to discuss two topics as explanatory factors for our results 1) doctors’ and nurses’ perception of a strong anxiolytic effect of benzodiazepines and 2) the impact of benzodiazepines on professional workload. We will conclude with some implications for practice.

1) Most doctors and nurses considered “reduction of fear and agitation” as a strong benefit of benzodiazepines. Similarly, interview studies with primary care physicians in the USA [10] and Australia [11] found that primary care physicians appreciated benzodiazepines as a quick-acting, effective treatment for stress and anxiety. Since patients often experience anxiety in the hospital situation, hospital doctors and nurses are also in need of an effective solution for this problem, and benzodiazepines provide a quick – although not harmless – fix.

2) Benzodiazepines can affect the workload of doctors and nurses in different ways. Most doctors who answered that “falls” occur often or always when patients take benzodiazepines also indicated that the risks of benzodiazepines outweigh the benefits. Similarly, a Slovenian study with general practitioners showed that awareness of drug risks, including falls and consecutive hip fractures was associated with low benzodiazepine prescription rates [12]. Fewer falls mean less potential for patient harm and fewer sequelae to treat. Falls also create an additional workload and bureaucracy for hospital doctors, who are often required to examine the patient and fill out a standardized “fall protocol”.

For nurses, getting patients to sleep longer and “confusion” had the strongest impact on their overall assessment of risk-benefit ratio. Both items have a direct but opposing effect upon their workload. Patients who do not sleep ring the bell more often and require more nursing care. Giving a benzodiazepine can relieve this problem and reduce workload. However, patients who are confused and groggy due to hangover effects of benzodiazepines are less self-sufficient and require more attention and care the next day, which in turn increases nurses’ workload.

Conclusion and implications for practice

This study shows, exemplified in a single hospital, a strategy for pinpointing the source of high benzodiazepine prescriptions in a general hospital. Further studies with doctors and nurses in other hospitals are needed in order to see if the factors that we have found are generalizable or if each hospital has a different “culture” with regards to the risks and benefits of benzodiazepines.

For the hospital studied here, a strategy to reduce benzodiazepine use in the hospital should especially take two factors into account:

First, doctors and nurses perceive the reduction of fear or agitation to be the strongest benefit of benzodiazepines. If benzodiazepines are to be reduced, effective nonpharmacological alternatives to curb fear or agitation must in turn be made available and implemented in the hospital setting.

Second, educating healthcare professionals about the risks and benefits of benzodiazepines should focus upon the perception of “falls” and “craving” (in the case of doctors) or “confusion” and “sleep” (in the case of nurses) in order to have a strong impact on the overall assessment of risk-benefit ratio. Stressing other typical risks of benzodiazepines, such as “tolerance” and “withdrawal” would – according to our data – most likely be ineffective in altering benzodiazepine use because doctors already know this and neither they nor nurses are influenced in their overall assessment of risk-benefit ratio by this knowledge.

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Conflict of interest

The authors declare no conflict of interest.

References

- [1] Straube K, Arnold I, Himmel W, Weiss V, Karaus M, Hummers-Pradier E, Nau R. Verordnung von Psychopharmaka bei über 65-Jährigen in einem Krankenhaus der Grund- und Regelversorgung unter besonderer Berücksichtigung der geriatrischen Klinik. *Z Gerontol Geriatr*. 2015; 48 (Suppl 1): 47
- [2] Donoghue J, Lader M. Usage of benzodiazepines: A review. *Int J Psychiatry Clin Pract*. 2010; 14: 78-87.
- [3] Petrovic M, Mariman A, Warie H, Afschrift M, Pevernagie D. Is there a rationale for prescription of benzodiazepines in the elderly? Review of the literature. *Acta Clin Belg*. 2003; 58: 27-36.
- [4] Pimlott NJG, Hux JE, Wilson LM, Kahan M, Li C, Rosser WW. Educating physicians to reduce benzodiazepine use by elderly patients: a randomized controlled trial. *CMAJ*. 2003; 168: 835-839.
- [5] Raisch DW. Determinants of prescribing behavior. In: Smith MC, Wertheimer AI (eds). *Social and behavioral aspects of pharmaceutical care*. New York: Pharmaceutical Products Press; 1996. p. 149-184.
- [6] Heinemann S, Weiß V, Straube K, Nau R, Grimmshann T, Himmel W, Hummers-Pradier E. Understanding and reducing the prescription of hypnotics and sedatives at the interface of hospital care and general practice: a protocol for a mixed-methods study. *BMJ Open*. 2016; 6: e011908.
- [7] Weiß V, Heinemann S, Himmel W, Nau R, Hummers-Pradier E. [The use of benzodiazepines and Z-drugs for patients with sleeping problems – A survey among hospital doctors and nurses]. *Dtsch Med Wochenschr*. 2016; 141: e121-e126.
- [8] Siriwardena AN, Qureshi Z, Gibson S, Collier S, Latham M. GPs' attitudes to benzodiazepine and “Z-drug” prescribing: a barrier to implementation of evidence and guidance on hypnotics. *Br J Gen Pract*. 2006; 56: 964-967.
- [9] Hoffmann F. Perceptions of German GPs on benefits and risks of benzodiazepines and Z-drugs. *Swiss Med Wkly*. 2013; 143: w13745.
- [10] Cook JM, Marshall R, Masci C, Coyne JC. Physicians' perspectives on prescribing benzodiazepines for older adults: a qualitative study. *J Gen Intern Med*. 2007; 22: 303-307.
- [11] Parr JM, Kavanagh DJ, Young RM, McCafferty K. Views of general practitioners and benzodiazepine users on benzodiazepines: a qualitative analysis. *Soc Sci Med*. 2006; 62: 1237-1249.
- [12] Subelj M, Vidmar G, Svab V. Prescription of benzodiazepines in Slovenian family medicine: a qualitative study. *Wien Klin Wochenschr*. 2010; 122: 474-478.