ORIGINAL ARTICLE

EVALUATION OF MEDICAL RECORDS AS A SCREENING TOOL FOR DEPRESCRIPTION OF BENZODIAZEPINES IN OLDER ADULTS CARED FOR BY SUS

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Highlights: (1) The patient records available in Primary Care do not provide sufficient information to identify older adults eligible for benzodiazepine deprescription. (2) The medical records of older adults available in Primary Care do not contain information on the reason for prescribing benzodiazepines. (3) Clonazepam, alprazolam, and diazepam were the most commonly prescribed benzodiazepines for older adults and most patients have been using these medications for more than six years.

PRE-PROOF

(as accepted)

This is a preliminary, unedited version of a manuscript that has been accepted for publication in Revista Contexto & Saúde. As a service to our readers, we are making this initial version of the manuscript available, as accepted. The article will still be reviewed, formatted, and approved by the authors before being published in its final form.

http://dx.doi.org/10.21527/2176-7114.2024.48.14486

How to cite:

Rodrigues LS, Tinoco MS, Silva EO, Mendonça TS, da Silva LGR, Oliveira MG. et al. Evaluation of medical records as a screening tool for deprescription of benzodiazepines in older adults attended by SUS. Rev. Contexto & Saúde, 2024;24(48): e14486

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EVALUATION OF MEDICAL RECORDS AS A SCREENING TOOL FOR DEPRESCRIPTION OF BENZODIAZEPINES IN OLDER ADULTS TREATED BY SUS

ABSTACT: Benzodiazepines (BZDs) are medications that are considered inappropriate for older adults, as they present more risks than benefits. In this sense, it is worth analyzing whether medical records can be used to track down these patients in order to de-prescribe them. The aim of this study was to analyze the possibility of screening patients eligible for BZD deprescription using secondary data from older adults' medical records. A descriptive study was carried out using physical and electronic medical records of older adults treated in Primary Health Care (PHC) in a small municipality in the state of Minas Gerais, Brazil, from July to November 2020. The following parameters were used to identify potential patients who were candidates for deprescription: a) records of isolated insomnia or insomnia caused by a comorbidity already being treated; b) patients aged ≥ 60 years taking BZDs, regardless of their duration. Of the 332 medical records analyzed, 76.8% were female and 79.5% were aged 65 or over. Approximately 31% of the patients had had between one and three automatic prescription renewals (APRs) in the last 12 months and when considering the date of the first prescription, 72.6% of the older adults had been using the medication for more than six years. It was possible to identify that only 5.1% had one of the eligibility criteria for de-prescribing, since 60.8% of the medical records did not contain detailed information on the indication for BZDs. It is therefore impossible to use medical records as a screening strategy to identify potential candidates for BZD deprescription.

Keywords: Benzodiazepines; List of potentially inappropriate medications; Medical records; Medication use.

INTRODUCTION

Benzodiazepines (BZDs) are medications that act on the central nervous system (CNS) and have various clinical indications, such as the treatment of epilepsy, severe generalized anxiety, ethanol withdrawal, Rapid Eye Movement (REM) sleep disorders and periprocedural anesthesia[1]. However, despite their benefits in such clinical conditions, these medications can also have negative effects, especially with chronic use, such as reduced cognitive capacity, as well as tolerance, dependence, and withdrawal in users[2].

Although the harmful effects of inappropriate BZD[1] use have already been explained in the literature, epidemiological data shows an increase in the frequency of use among older

adults, including those aged 75 and over[1]. Inappropriate use can occur in various ways, such as inappropriate prescriptions, acquisition and use without medical supervision and lack of information about the undesirable effects caused by BZDs[2].

According to the Beers criteria, BZDs are considered potentially inappropriate medications for the older adults (PIMs) and can increase the risk of cognitive impairment, delirium, falls, fractures, and car accidents[3]. However, it is clear that the use of these medications in this group of patients is increasingly common in clinical practice, and they are often used for long periods. A systematic review study showed that the prescription of PIMs for older adults was estimated at 65.0% (28.7-95.3%), with BZDs being among the most frequently prescribed (19.0%)[4].

Although the continuous use of BZDs is not recommended for long periods, due to their low efficiency[3], a Brazilian study showed that 91.7% of older adults using BZDs use them indefinitely, generating tolerance and dependence, thus making de-prescribing difficult[5].

In this context, the importance of deprescribing BZDs is clear. The process of deprescribing consists of reducing the dose or interrupting the use of medication through planning and professional supervision, in order to ensure greater safety in patients' pharmacotherapy[6]. To select patients for BZD deprescription, certain criteria should be applied: continuous use (four weeks or more); concomitant use with other CNS depressants (such as opioid medications, antipsychotics and alcohol); patients at high risk of falls; concomitant use of anticholinergics; patients with cognitive impairment; patients with kidney or liver disease; individuals with lung disease; sleep apnea and for the treatment of isolated insomnia[7-8].

The studies show that the process of deprescribing has been effective in reducing the potential risks related to the irrational use of medications, as well as promoting clinical benefits and improving patients' quality of life. Health education activities on the negative effects of medications by professionals, as well as working together with the patient, increase the chances of successful deprescription[6,8-9].

In view of this, it is essential to look for viable methodologies, from a clinical, operational, and economic point of view, which allow us to identify and characterize patients who are eligible for BZD deprescription. One example could be chart review, since when filled out completely, charts contribute to guiding health decision-making[10]. Therefore, this study

aims to analyze the possibility of screening potential Primary Health Care (PHC) patients eligible for BZD deprescription using secondary data from older adults' medical records.

MATERIAL AND METHODS

This is a descriptive study which used physical and electronic medical records of older adults treated at the PHC in a small Brazilian municipality in the state of Minas Gerais. The municipality has six PHC units, four in the urban area and two in the districts. The four units in the urban area were considered for this study. The study was carried out between July and November 2020. Older adults were those aged 60 or over[11].

A physical instrument was drawn up for data collection, which was divided into four blocks. In block I, information was collected on the identification of the older adult, socioeconomic and demographic variables (age, date of birth, gender, marital status, education), information on the frequency of medical consultations and automatic prescription renewals (APR) in the last 12 months. Block II included information on health conditions (presence of comorbidities). Block III identified information on medication use and finally, block IV collected information on BZD use (name, clinical indication and time of use).

In relation to the frequency of consultations, the following were considered: a) medical consultation: those with a record of the consultation in the medical records, and; b) APR: when it was described as “prescription renewal” or when there was only a record of the medications in use with no record of interventions, with APR being considered to be that consultation in which no consultation took place, i.e. without a medical assessment. In this case, the physician only repeated the previous prescription and the community health worker (CHW), or another member of the team delivered the prescription to the patient.

In relation to the pharmacotherapeutic profile, the use of medications was categorized into: use of polypharmacy (five or more medications)[12] and presence of PIM[3], which were identified after data collection according to the list of medications used by the patient. In

addition, the duration of BZD use was analyzed, considering the first prescription described in the medical record, as well as its possible clinical indication.

Potential participants were identified through the records of the multidisciplinary team at the health units (HU). Firstly, contact was made with the health center nurse, who asked the CHWs to provide the names of the older adults over the age of 60 who used BZDs. Subsequently, on previously scheduled days, data collection began by analyzing the medical records individually, following the list provided by the CHWs. In order to identify potential patients who are candidates for deprescription, the theoretical framework used was the BZD deprescription algorithm[6], translated in Brazil by Oliveira et al. (2019)[13], which considers the following parameters for a patient to be a candidate for deprescription: a) insomnia on its own or insomnia caused by a comorbidity that is already being treated; b) patients aged ≥ 65 years, using BZD regardless of duration. However, in this study, older adults ≥ 60 years[11] were considered, because in Brazil this is the age group in which older patients fall.

The following parameters/conditions were considered exclusionary for deprescription: a) other sleep disorders (e.g. restless legs); b) anxiety, depression, unmanaged physical or mental condition that may be causing or aggravating insomnia; c) BZD effective specifically for anxiety; d) alcohol abstinence. The study was approved by the research ethics committee of the Federal University of São João del-Rei, Midwest campus (CEP-CCO) under opinion 4.049.528 and CAAE: 30688320.0.0000.5545.

RESULTS

A total of 332 medical records were analyzed in the municipality's four health units, of which 255 (76.8%) were of older adults. It was observed that 79.5% of the older adults were aged 65 or over and most of them had little education (Table 1).

Table 1. Socioeconomic profile of older adult BZD users seen in PHC units, 2020 (n = 332).

Variables	Total n = 332 (%)
Age	
60 to 64	68 (20.5)
≥ 65	264 (79.5)
Education*	
Literate Class	13 (3.9)
1st to 4th	134 (40.4)
5th to 8th	74 (22.3)
High school	39 (11.8)
Higher Education	13 (3.9)
Not informed	30 (9.0)
None	29 (8.7)
Marital Status	
Married	7 (2.1)
Widowed	9 (2.7)
Divorced/separated	3 (0.9)
Not informed **	313 (94.3)

Source: prepared by the authors. *Education is according to the patient's record in the electronic medical record. Note: ** No data on marital status.

The survey showed that 226 (68.1%) older adults had seen a physician in the last year. Among the study participants, 102 (30.7%) had had between one and three APRs in the last 12 months (Table 2):

Table 2. Period of medical consultations and frequency of APR of older adult BZD users seen in PHC units, 2019-2020 (n = 332).

Variables	Total n = 332 (%)
Has there been a doctor's appointment in the last 12 months?	
No	21 (6.3%)
Yes	226 (68.1%)
Not informed	85 (25.6%)
Amount of APR* in the last 12 months	
1-3 renewals	102 (30.7)
4-6 renewals	88 (26.5)
7-9 renewals	55 (16.6)
10-12 renewals	44 (13.3)
Not informed	43 (12.9)

Source: prepared by the authors. *APR: Automatic Prescription Renewals

When analyzing comorbidities (table 3), it can be seen that the majority of older adults had some kind of chronic comorbidity, with hypertension standing out (n= 214; 64.5%), followed by Diabetes Mellitus (n= 83; 25%) and depression (n= 57; 17.2%). Among the most commonly used classes of medication were platelet antiaggregants, antihypertensives, statins and proton pump inhibitors.

Table 3. Comorbidities of older adults using BZDs and treated at PHC units, 2020 (n = 332).

Health condition	Total n = 332 (%)
Hypertension	214 (64.5)
Diabetes Mellitus	83 (25.0)
Depression	57 (17.2)
Dyslipidemia	54 (16.3)
Thyroid disorders	41 (12.4)
Osteoporosis	21 (6.3)
Others	57 (17.2)

Fonte: elaborada pelos autores.

It was found that 177 older adults (53.3%) used polypharmacy, with 155 (46.7%) using between five and nine medications and 22 (6.6%) using more than 10 medications. Among the most prescribed BZDs was clonazepam (42.4%), of which 107 (32.2%) used tablets and 34 (10.2%) oral solutions, followed by alprazolam (29.5%), diazepam (18.7%) and bromazepam (8.7%). It was observed that 16 (4.8%) older adults used two BZDs concomitantly. The majority (60.8%) did not have information on the reason for prescribing BZDs and when considering the date of the first prescription of the BZD to the older adult, described in the medical records, it was identified that the majority of them (72.6%) had been using these medications for a period of more than six years, with 16.3% having been using them for more than 16 years. When analyzing the general classification of medications, following the criteria for prescribing PIMs, the study showed that 167 (50.3%) older adults used between two and five PIMs (Table 4).

Table 4. Description of BZD use and PIM use by older adults treated at PHC units, 2020 (n = 332).

Variables	Total n = 332 (%)
Benzodiazepines	
Clonazepam tablet	107 (32.2)
Alprazolam	98 (29.5)
Diazepam	62 (18.7)
Clonazepam oral drops	34 (10.2)
Bromazepam	29 (8.7)
Lorazepam	7 (2.1)
Nitrazepam	5 (1.5)
Flunitrazepam	4 (1.2)
Flurazepam	1 (0.3)
Cloxazolam	1 (0.3)
Clinical indications for benzodiazepines	
Anxiety/GAD*/Panic disorder	50 (15.1)
Nonspecific anxiety symptoms	39 (11.8)
Depression	25 (7.5)
Isolated insomnia	17 (5.1)
Sleep disorders	11 (3.3)
Miorrelaxant	3 (0.9)
Grief	2 (0.6)
Mental confusion	1 (0.3)
Not informed	202 (60.8)
Time of benzodiazepine use in years	
up to 5 years	91 (27.4)
6-10 years	109 (32.8)
11-15 years	78 (23.5)

Continua

≥ 16 years	54 (16.3)
Total Potentially Inappropriate Medications for Older Adults	
1	165 (49.7%)
2	112 (33.7%)
3	45 (13.6%)
4	9 (2.7%)
5	1 (0.3%)

*Source: prepared by the authors *GAD - Generalized Anxiety Disorder*

In relation to eligibility for deprescribing, only 17 (5.1%) patients were eligible because they were over 60 and used BZDs for insomnia alone. However, 202 (60.8%) of the medical records lacked detailed information on the indication for BZDs.

DISCUSSION

The data shows that the use of patient records is not a viable strategy for screening and identifying potential older adults for BZD deprescription. This is due to the poor quality or even absence of important information, such as the reason(s) for prescribing the BZD. The poor quality of medical records is not exclusive to the findings of this study[14-16].

Considering that the medical record should be useful for the multidisciplinary team and the patient, there is a need to improve the records of the activities carried out, in order to enable the health team to provide complete assistance to the patient[16].

In this context, one of the alternatives is the use of technological tools to the detriment of the physical paper medical record (Prontuário Físico de Papel, PFP), which is restricted to the care unit and does not always present a chronological and complete order of events, making medical decisions difficult. The use of electronic patient records (EPR) in PHC allows for better management of care and longitudinal monitoring of the patient, speeding up decision-making[17].

Another necessary intervention is to sensitize and train professionals on how to fill out the document. Without this, failures to enter data on patient follow-up are perpetuated regardless of which medical record is used[18].

Other studies have also shown that the poor quality of medical records has a negative impact on the effectiveness of the actions carried out by PHC in processing and understanding

information for health management and decision-making, which leads users to seek other levels of health care for diagnosis and therapeutic management[14-15]. In this context, in order to guarantee complete care, public educational policies with continuing training for multidisciplinary teams and greater investment in health promotion and disease prevention, with the correct recording of the activities carried out, will enable better health care for older adults enrolled in the units[15].

When caring for older adults, considering the high prevalence of comorbidities, as well as the complexity of pharmacotherapy, it is essential that professionals seek information on the use of medication, especially in relation to the use of PIMs. As in this study, other studies have found that the majority of older adults are subject to polypharmacy in addition to the use of PIMs[19-20]. In this context, BZDs are among the medications most used by older adults in Brazil[21]. This consumption has contributed to an increase in the industrial production of these medications in several countries around the world, as global BZD manufacturing increased by 24% between 2017 and 2019, driven mainly by Italy, India, China and Brazil[22].

The use of multiple drugs, even if it is related to appropriate prescribing, requires direct care[12], and adequate medical monitoring is essential, not just the APR[23]. It is a fact that access to mental health services is often limited, thus requiring more effective care from a multidisciplinary team, including a general practitioner (or family and community doctor), nurse and clinical pharmacist to carry out pharmacotherapeutic monitoring[24-25]. It is known that access to medication alone does not guarantee successful pharmacotherapy and the inappropriate use of medication can bring various risks and serious clinical complications[26].

APR, without regular medical consultations, is a very common practice in PHC and can occur for a variety of reasons, from the motivational factors of health professionals to structural and administrative factors. Some authors have identified that it occurs due to the high demand that the public system absorbs: physicians work to meet quantitative targets, often in large communities with various socio-economic and clinical problems, thus generating a greater number of consultations than the workforce offered, leading to a struggle for medical care[27-28]. Even against this backdrop, APR is not recommended by the Brazilian Regional Council of

Medicine of Minas Gerais (CRM-MG), which goes against good professional practice and ethical duties[29-30].

In this sense, it is imperative to make it clear that the patient must be monitored clinically, even if their condition is stable. In addition, the APR prevents the prescriber and the multidisciplinary health team from identifying which patients are - or are not - suitable for the process of deprescribing, especially those medications that have no indication for continuous use or those that no longer make sense to use at that moment in the patient's life, as is the case with BZDs[6,29], thus avoiding chronic, unnecessary and irrational exposure to medications.

It is also worth noting that the APR and the lack of periodic reassessment contribute to the long duration of BZD use[31], as well as the patient's lack of knowledge about their pharmacotherapy and fear of the signs and symptoms of withdrawal[8].

The use of PIMs and polypharmacy should be assessed and, when appropriate, deprescription should be considered, guided by the multidisciplinary team through systematized protocols[32]. The withdrawal process should be gradual, aiming to reduce side effects and improve the patient's quality of life[33].

In addition, deprescribing can be accompanied by non-pharmacological treatment as a therapeutic alternative, such as sleep hygiene[34], in order to reduce health problems such as mortality and increased public spending. In addition, they are low-cost interventions to implement and execute within PHC[26], and deprescribing is strongly recommended by various lists on PIM[1,3] and systematic reviews for the older adults' population aged 65 and over[6].

Another important point is that the study's socio-economic data corroborates the findings of other Brazilian studies, in which the majority of BZD users are older women with low levels of education[20,35]. There is therefore greater use of BZDs among women, which may be associated with women's greater concern with health care, which makes them seek health services more often[36].

The study's limitations include the fact that it was carried out in a small municipality, which makes it impossible to generalize the results. In addition, the data was collected in the context of a COVID-19 pandemic, which may have contributed somewhat to the poor quality of the medical records found in the study. On the other hand, the findings make clear the need for progress in the process of de-prescribing BZDs in older adults, who continue to be prescribed them for isolated insomnia despite the evidence and recommendations in the

literature, and also reinforce the importance of quality records in medical records for managing care and implementing interventions in health services, especially those related to reducing iatrogenies, such as the use of PIMs by older adults.

CONCLUSION

In the context and scenario analyzed, it was not feasible to use medical records as a screening strategy to identify potential older adults for de-prescribing benzodiazepines. It can be seen that important information is sometimes not present in the medical records of older adults, who in some situations seek the service only for "APR" and do not undergo regular clinical follow-up.

It is therefore necessary to analyze the factors that make it difficult to keep complete records in medical charts, since these are essential for dialogue between health professionals, enabling continuity of care for patients using BZDs, as well as making it possible to list older adults who are eligible for deprescription.

ACKNOWLEDGMENTS

We thank the Federal University of São João Del-Rei (UFSJ).

FINANCING

This study was funded by: Fundação de Amparo à Pesquisa do Estado de Minas Gerais (FAPEMIG), APQ-01107-21 and APQ-01189-22; Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) - funding code 304131/2022-9 and Coordenação de Aperfeiçoamento de Pessoal de Nível Superior - Brasil (CAPES) - funding code 001.

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Submitted: May 17, 2023

Accepted: December 6, 2023

Published: May 6, 2024

Author contributions:

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All authors have approved the final version of the text.

Conflict of interest: There is no conflict of interest.

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Editor: Dra. Christiane de Fátima Colet

Editor-in-chief: Dra. Adriane Cristina Bernat Kolankiewicz