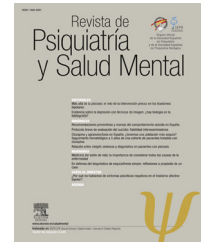




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## ORIGINAL ARTICLE

# Benzodiazepine prescriptions and falls in older men and women<sup>☆</sup>

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### KEYWORDS

Benzodiazepines;  
Accidental falls;  
Aged;  
Gender

### Abstract

**Objective:** Despite cautions by professional associations, benzodiazepines (BZD) and Z hypnotics (BZD/Z) are widely prescribed to older adults who are particularly susceptible to insomnia and anxiety, but who are also more sensitive to drugs adverse events. In this study, we assessed the prescription of BZD/Z drugs in a sample of older adults ( $\geq 65$ ) who presented for emergency care after a fall.

**Methods:** We collected the type, number and dose of BZD/Z drugs prescribed and explored gender differences in the prescription.

**Results:** BZD/Z drugs were prescribed to 43.6% of the sample ( $n=654$ ) and more frequently to women; 78.4% of prescriptions were for BZD/Z drugs with a short half-life. The majority of patients (83.5%) were prescribed only one type of BZD/Z, but 16.5% had been prescribed multiple BZD/Z drugs, with no gender difference. Doses higher than those recommended for older adults were prescribed to 58% of patients, being the doses significantly higher for men compared to women (70.0% vs 53.1%).

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**PALABRAS CLAVE**

Benzodiazepinas;  
Caídas accidentales;  
Ancianos;  
Género

**Conclusions:** Over 40% of older adults presenting for emergency care after a fall had previously been prescribed BZD/Z drugs. Some important gender differences in the prescription of BZD/Z drugs were seen, especially prescription above the recommended dose and of drugs with a long-half life.

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**Prescripción de benzodiazepinas y caídas en mujeres y hombres ancianos****Resumen**

**Objetivo:** A pesar de las advertencias de numerosas asociaciones profesionales, las benzodiazepinas (BZD) y los hipnóticos Z (Z) son ampliamente prescritos a los ancianos ya que son especialmente susceptibles de padecer insomnio y ansiedad, pero a su vez resultan especialmente sensibles a la aparición de efectos secundarios a dichos medicamentos. En este estudio evaluamos la prescripción de BZD/Z en una muestra de ancianos ( $\geq 65$ ) que se presentan en el servicio de urgencias de un hospital por haber sufrido una caída.

**Métodos:** Recogimos información del tipo, número y dosis de los fármacos BZD/Z prescritos y exploramos la presencia de diferencias de género en dicha prescripción.

**Resultados:** Las BZD/Z habían sido prescritas a un 43,6% de la muestra (n=654), más frecuentemente a las mujeres. El 78,4% de las prescripciones fueron de BZD/Z de vida media corta. La mayoría de los pacientes (83,5%) tomaban solamente un fármaco BZD/Z, pero un 16,5% consumían más de una BZD/Z, sin diferencias de género. Un 58% de los pacientes consumían dosis de BZD/Z más elevadas que las recomendadas para ancianos, siendo la proporción significativamente más elevada para los hombres (70% vs. 53,1%).

**Conclusiones:** Alrededor de un 40% de los ancianos que acuden a un servicio de urgencias por haber sufrido una caída se encontraban tomando BZD/Z. Hemos hallado algunas diferencias de género en la prescripción de BZD/Z, especialmente en la prescripción por encima de la dosis recomendada para ancianos y de fármacos de vida media larga.

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**Introduction**

Despite cautions by many national regulatory agencies and professional associations, a recent publication about benzodiazepine (BZD) use reinforced the efficacy of these drugs in the treatment of anxiety disorders and insomnia, and claimed that their use in older adults is generally accepted by geriatricians when short half-life compounds and low doses are prescribed.<sup>1</sup> However, the beneficial effects of BZDs are often disputed and concerns expressed about their adverse events and high rates of prescription in older adults.<sup>2,3</sup> Certainly, prescription decisions have to be made on a case-by-case basis and patients should be informed of both the risks and benefits of any prescribed medication.<sup>1</sup>

These decisions are not easy. Older adults are especially difficult to treat because they often have multiple morbidities that require polypharmacy.<sup>4</sup> Also, changes in body composition and organ function during the ageing process can alter drug disposition and make older individuals more vulnerable to medication-associated adverse events.<sup>5</sup> In particular, there is an age-related increase in the rate and severity of adverse effects of drugs that act on the central nervous system, which often results from a decrease in the number of neurons and synapses and greater permeability of the blood-brain barrier.<sup>6</sup> BZDs are one of the

most commonly prescribed drugs in older adults because of their proven efficacy, but care must be taken as their use and abuse may lead to unwanted effects, including cognitive deterioration,<sup>7</sup> motor incoordination, ataxia, falls<sup>8-10</sup> and respiratory failure.<sup>11-13</sup>

Clinical guidelines recommend that BZDs and the related group of non-benzodiazepine Z-drugs (zolpidem, zaleplon, zopiclone) should be used at the lowest possible dose, and selecting those with the shortest half-lives.<sup>14,15</sup> However, in the real world, there is evidence that various types and doses of these BZD/Z drugs are frequently prescribed in the geriatric population,<sup>16</sup> especially in women.<sup>3</sup>

Falls, especially in older patients, are a serious adverse event of BZD/Z-drugs use, often causing hip fracture and can have a serious impact on mobility, morbidity and mortality.<sup>17,18</sup> While the association between BZD/Z drugs and falls in older adults is well established, less is known about the characteristics of patients sustaining injurious falls and the prescription of BZD/Z drugs in such a population

The objectives of this study are to describe the previous prescription of BZD/Z drugs in a sample of older adults attending a general hospital emergency service after sustaining a fall and to explore potential gender differences in the type, number and dose of BZD/Z drugs prescribed.

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