Psychoactive drugs and costs in the Madrid III (Valdemoro) prison

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Abstract

Annual pharmaceutical expenditures in prisons increases dramatically and the rising costs of psychoactive drugs have especially contributed to this. These drugs are often prescribed in order to find therapeutic uses in the field of personality disorders, addictions, and dysfunctional behaviours that are not included in the authorized indications (compassionate use). This study has enabled a detailed description of the use of psychoactive drugs at the Madrid III prison, a centre with one of the lowest levels of pharmaceutical expenditure in this autonomous community. During a 2-week period, all prescriptions of psychoactive drugs were collected and registered along with data of several possible conditioning factors. Twenty point five percent of the population was receiving some kind of psychoactive drug; 76% of those inmates undergoing treatment were receiving 1 or 2 substances; 65% were taking anxiolytic drugs, 38% antidepressants, and 27% antipsychotics. The total amount of psychoactive drugs consumed was 9840 defined daily doses, 46% of which were anxiolytic drugs, 17% antidepressants, and 14% antipsychotics. The total cost of the fortnight's treatment was €5379 with a saving of €611 due to requesting and selecting offers carried out by the pharmacist. Seventy-two percent of the costs were spent on antipsychotics and the newer psychoactive drugs, representing 66% of the prescriptions, accounted for 98% of expenditure. The prescriber was one of the key influential factors over the amount, type and cost of the treatments. There are signs that compassionate use of current antipsychotics and antiepileptics, and newer antidepressants are a main cause of the dramatic increase in the costs, with cost-efficiency not always clearly demonstrated. These results are not an isolated fact restricted only to prisons, as demonstrated by consumption data published by the National Health System in the same year.

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Psicofármacos y gasto en la prisión de Madrid III (Valdemoro)

Resumen: El gasto farmacéutico en el medio penitenciario está aumentando exponencialmente y la partida en psicofármacos contribuye especialmente a este incremento. Con bastante frecuencia estos tratamientos se prescriben buscando utilidades terapéuticas en relación con trastornos de personalidad, dependencias y conductas disfuncionales, que no figuran entre las indicaciones autorizadas (uso compasivo). El presente estudio ha permitido una descripción pormenorizada del uso de psicofármacos en el Centro Penitenciario Madrid III, uno de los centros con menor gasto farmacéutico de la comunidad autónoma. Durante 2 semanas se registraron todas las prescripciones de psicofármacos junto con diversos parámetros que pudiesen resultar condicionantes. Un 20,5% de la población recibía algún psicofármaco; el 76% de los pacientes con tratamiento recibía 1 o 2 medicamentos, un 65% tenía prescritos ansiolíticos, un 38%, antidepresivos, y un 27%, antipsicóticos. El consumo total de psicofármacos ascendió a 9.840 dosis diarias de mantenimiento, un 46% de las cuales correspondía a ansiolíticos, un 17% a antidepresivos y un 14% a antipsicóticos. En 2 semanas, el gasto total sumó 5.379 € y la solicitud y selección de ofertas por la farmacéutica supusieron hasta 611 € de ahorro. Los antipsicóticos acumularon un 72% del gasto (3.857 €) y, en general, los nuevos psicofármacos, con un 66% de las prescripciones, supusieron un 98% del coste total. Los resultados del estudio apuntan al médico prescriptor como agente primordial, por encima incluso de variables epidemiológicas de los internos (como edad, nacionalidad o grado), en relación con qué y cuánto coste se prescribe. Hay indicios de que el uso compasivo de nuevos antipsicóticos y antiepilépticos supone un porcentaje sustancial del incremento del gasto con dudosa utilidad. Estos resultados no constituyen un hecho aislado circunscrito al medio penitenciario como indican los datos de consumo publicados por el Sistema Nacional de Salud en el mismo año.

Palabras clave: Psicofármacos. Farmacoeconomía. Prescripción. Uso compasivo. Psiquiatría y prisiones.

INTRODUCTION

The penitentiary environment is not closed off from the general tendency in our culture of the "psychiatrization" of life events and, by extension, of crimes. People are not "sad" or "sorrowful" anymore, but "depressed"; when any abominable crime is reported by the media, many think that there is a person with mental problems hidden behind it. This tendency has a clear repercussion in the increase of the use of psychoactive drugs in the general population, as well as in the penitentiary environment. Without forgetting the increase in the number of approved indications together with the promotional marketing of the pharmaceutical industry as factors that have contributed to the skyrocketing of the use of the active ingredients most recently commercialised.[1]

In the Spanish National Health System, according to data from 2006, selective serotonin reuptake inhibitor type antidepressants were the third subgroup of greatest consumption by cost (only surpassed by statins and omeprazole—type proton pump inhibitors), with a total cost of €438.36 million, corresponding to 15 389.10 packs. On the other hand, among the first 11 active ingredients of greater consumption in the ranking by price of sale to the public, there are 4 psychoactive drugs (risperidone, paroxetine, olanzapine, and venlafaxine).[2,3]

There is a lack of data per ATC subgroups (anatomical therapeutic and chemical classifying system) in the penitentiary environment, due to the current system to collect information from the Pharmacy Reports of Penitentiary Institutions, making it impossible to talk about a general tendency of the consumption of psychoactive drugs. However, there is data available referring to the group of neuroleptic drugs whose acquisition is done in a centralised manner (risperidone and olanzapine). The joint cost of both substances experienced an increase in prisons from 2003 to 2004 of 59.36% (coinciding with the incorporation of the injectable format of risperidone) and between years 2004 and 2005, it grew 29.04%, while in the Spanish National Health System, the increases were 18.77% and 0.96%, respectively, in the same periods.[2,4,5]

References can be found in the bibliography regarding this phenomenon in other countries: in 1995, in the San Diego prison[6] where 14% of males and 25% of females took some type of psychoactive drug, or in Norwegian prisons where Hartvig and Ostberg,[7] in 2004, found 24.5% of the prisoners with psychopharmacological treatment, and Kjeslsberg et al,[8] in 2006, found 13.5%. In our country, Cañas,[9] in 1998, published that 28% of prisoners in the León prison were taking psychopharmacological treatment (however, 7.6% of the general population of the province received it), and Espinosa and Laliga[10] found a daily proportion during 2003 of 27.50% of the population in the Catalonian centres.

The diverse factors that can contribute to the fact that the consumption of psychoactive drugs in prisons implicates a substantial percentage of the pharmaceutical costs are:

- The growing prevalence of mental disorders in the penitentiary environment[7,11,12]
- The operating characteristics of the sanitary system of prisons,[13] among them including a great accessibility to medical consultations and the greatest possibilities, as it is a closed environment, of detection and follow-up
- The institutionalised patients consume, generally, more drugs than those that habitually live in their homes. A study in elderly people found a consumption almost 3 times greater[14]
- The prescription of psychoactive drugs is the principal intervention for psychological complaints[15]
- The elevated co-morbidity of the abuse of substances that condition an excessive demand of psychoactive drugs and leads to, frequently, the compassionate prescription related not only with the individual doctor-patient conflict, but also with the general level of tension among the prisoners[16]
- The current proliferation of medications with the objective to modulate the dysfunctional behaviours in personality disorders, a diagnosis that in prisons has been found to reach even 80% of prevalence in a recent Norwegian study[17]

In the last few years, an alarm has gone off regarding the highly elevated psychoactive drug costs in the prisons of our country. Thus, the attention has been rerouted towards the comparison of the quantity, the costs and the profiles of use of psychoactive drugs in the penitentiary environment and in the community, and towards an evaluation of the appropriateness of prescriptions and the possibilities to rationalise costs. Salinas et al,[18] carried out a study on the use of atypical neuroleptic drugs (risperidone, olanzapine, and quetiapine) in the Penitentiary Centre of Malaga during 2003-2004, comparing their data with that of the primary care district of reference, where an increase is found for the prescriptions of said drugs in the penitentiary centre and a decrease in primary care. This coincides with the interventions realised by the Andalusian Sanitary System, on their way to increase control, using the previous authorisation for distribution (the Spanish "VIM").[18] Currently, pharmacoeconomic aspects are being questioned such as: the efficiency of the gradual substitution that has been produced of the classical drugs in the treatment of depression or psychosis by those of the latest generation[19]; or the pertinence to use, among others, the modern antiepileptics or neuroleptic drugs in indications that are not approved by the international evaluation and registration organisms, despite being widely spread.[20] Thus, different authors have reported, for example, that the majority of the pharmacoeconomic evaluations that support the use of new antipsychotic drugs and antidepressants (responsible for the greater part of the wild increase of costs), do not comply with the indispensable criteria of scientific rigour and they do not sufficiently study the impact of the new secondary effects.[21-24]

It seems adequate that the sanitary authorities, that are ultimately those that pay for the innovations, should be the ones to promote investigative commissions for the evaluation of cost-effectiveness.[25]

In spite of the alarm that these costs generate, in the penitentiary environment, the means to control costs are not implemented routinely as done in the Spanish National Health System. Unlike the doctors of extra-penitentiary primary care, the prison doctors

do not receive individual information regarding the cost of medications that they prescribe, nor incentives as a result of their proper management. There is no definition in the use of financed substances nor those excluded from the pharmacological provisions and of parapharmaceutical products to the prisoners, nor regulations regarding the capacity to manage and regulate the costs of the drugs handled by the pharmacies and deposits of penitentiary medications.

However, and in spite of the fact that the mere economic aspect is very important, a more demanding question still needs to be answered: does the increase in the psychopharmacological cost in the penitentiary environment truly correspond to a higher quality care of the prisoners? The first indispensable step to answer this question is to have access to detailed information regarding which medications and dosage are prescribed in this environment. This is the principal objective of this study.

MATERIAL AND METHOD

This is an epidemiological, descriptive, transversal study realised in the population of prisoners of the Madrid III Penitentiary Centre to describe the current use of psychoactive drugs in the centre without introducing any variations regarding the normal operations. A study period of 2 weeks of standard characteristics was established within the health-care providing calendar. The population of the open section and those prisoners staying less than 48 h were excluded from the study.

On June 6, 2005 all of the treatment sheets that included some kind of psychoactive drug received in the Pharmacy Department and that at that moment, continued active, were collected, representing a transversal cut of the prisoners subject to the prescription of psychoactive drugs.

The rest of new prescriptions, previous treatments suspended and changes from June 7 to June 19, inclusive, were collected daily in the same manner during the length of the study. The information regarding the prisoners was collected using a protocol specifically designed for said use, where a copy of the medical treatment sheets was attached of the prisoners in transfer that arrived from other state prisons during the study period. All of this data was entered into an Excel document, that included the following variables: security identification number (NIS, abbreviated in Spanish), that was eliminated once the database was cleaned to preserve the anonymous status of the participating prisoners; the unit that the prisoners belonged to; active ingredient; total daily dose in milligrams; prescription date; suspension date; transfer or permanent. Another variable was created from the treatment prescription and suspension dates: duration in days of the prescription, that was calculated for the study period, with a maximum of 14 days.

Each unit has a stable assigned general physician, which gives us indirect information of the prescribing doctor in the unit variable. A new variable was also created to define those prisoners whose prescriptions had been reviewed by a psychiatrist, from the list of patients in the psychiatry consultations of the previous year.

Afterwards, the dates of birth were located in the computer system of the penitentiary regimen, corresponding with the NIS subjects to the prescription of psychoactive drugs, and therefore the age variable was included together with other epidemiological data such as nationality, penal situation (condemned or preventive), and the penal grade.

To calculate the defined daily doses (DDD), reference values were used for each active ingredient of *Nomenclator Digitalis* updated in 2005. In order to calculate costs, we used maximum, minimum, and generic prices for each active ingredient offer received by the pharmacy from the beginning of 2005 to the start of the study.

The number of DDD corresponding to each prescription was calculated by multiplying the product of the daily dose in milligrams by the DDD value assigned to the active ingredient in the current official classification. The number of valid days within the period was calculated from the start and suspension dates of the prescription (up to a maximum of 14, for prescriptions that covered the 2 weeks). Finally, the defined daily dose per inhabitant per day (DHD) was calculated using the following formula:

$$\text{DHD} = (\Sigma \text{ DDD in 14 days}/1368 \times 14) \times 1000 \text{ or 100 inhabitants}$$

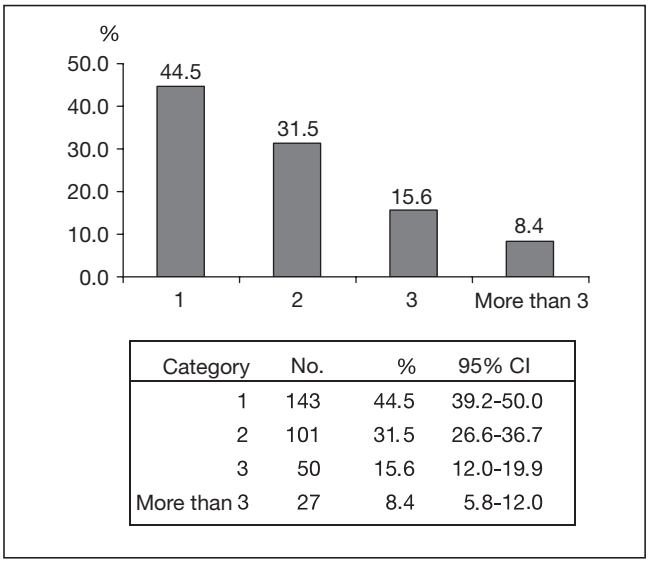
The active ingredients were recorded in 5 variables, one per therapeutic subgroup (anxiolytics, hypnotics, antidepressants, antipsychotics, and antiepileptics) and in a second recodification, 3 new variables were created to classify the antipsychotics, antidepressants, and antiepileptics in classic and new or atypical.

RESULTS

The population studied is composed of 1368 prisoners (1099 permanent and 268 transfer). Three hundred twenty-one prisoners were prescribed some kind of psychoactive drug during the study period, 23.46% of the abovementioned population was prescribed some type of psychoactive drug (95% confidence interval [CI], 21.29-25.78). In Figure 1 the distribution of the prisoners is shown with 1, 2, 3, or more than 3 psychoactive drugs. Seventy-six percent of the prisoners that had been prescribed some type of psychotropic medication, took 1 or 2 drugs of this type in the moment of the study (for example, an antidepressant and a hypnotic), the remaining 24% were receiving 3 or more.

The total cost of psychoactive drugs accumulated in the 2 weeks of the study surpassed €5379.27. As this is significant regarding any biweekly period, the annual cost of this type of medications would surpass €139 861.56 and the daily consumption of psychoactive drugs would be around €379.

The total consumption of psychoactive drugs surpassed 9840 DDD (doses defined as maintenance for the most typical indication of the drug).



Category	No.	%	95% CI
1	143	44.5	39.2-50.0
2	101	31.5	26.6-36.7
3	50	15.6	12.0-19.9
More than 3	27	8.4	5.8-12.0

Figure 1. *Distribution of the prisoners according to the number of psychoactive drugs prescribed per prisoner. CI indicates confidence interval.*

Taking June 6, 2005, as a cut point, 15.5% of the prisoners had been evaluated by the psychiatrist in some moment of the previous year (95% CI, 13.4-17.8).The specialist had reviewed 27.4% of the prescriptions (95% CI, 24.1-34.1).

In Table 1 the distribution of DDD by psychoactive drug subgroups is shown, 46% of which corresponded with anxiolytics that formed the subgroup where the greatest number of DDD were consumed, followed by 17% of antidepressants, 14% of antipsychotics, and 5% of antiepileptics.

In Table 2 the cost of psychoactive drugs is shown by active ingredients (grouped by the category that each psychotropic substance belongs to).

The costs are expressed in the total of euros that the prescriptions of each substance have cost during the 2 weeks studied. As a reference, the number of prescriptions of said drug was also included throughout the period (in parenthesis by the name of the active ingredient).

By active ingredients, the highest cost corresponded to 2 antipsychotic drugs: olanzapine with 32 prescriptions and injectable slow-release risperidone with 13 prescriptions, that surpassed 1480 and €1330, respectively (between both of them

Table 2. Distribution of costs (euros) by active ingredient

Antidepressants	Total euros	Antipsychotics	Total euros
Amitriptiline (P=33)	23.8	Amisulpride (P=1)	33.18
Citalopram(P=4)	16.17	Clothiapine (P=4)	3.68
Clomipramine (P=1)	1.54	Haloperidol (P=6)	8.69
Escitalopram (P=2)	20.88	Levomepromazine (P=8)	1.79
Fluoxetine (P=17)	33.12	Lithium (P=5)	33.4
Mirtazapin (P=31)	204.88	Olanzapine (P =32)	1480.49
Paroxetine (P=24)	148.05	Perfenazine (P=1)	0.41
Sertraline (P=5)	28.52	Quetiapine (P=18)	276.28
Trazodone (P= 3)	5.41	Risperidone (P=16)	256.04
Venlafaxine (P=9)	144	Risper. Consta (P=13)	1333.2
		Sulpiride (P=2)	4.88
		Tiapride (P=2)	2.94
		Ziprasidone (P=1)	89.15
		Zuclopentixol (P=5)	203.3
		Zudop. Depot (P=6)	132.69

Antiepileptics	Total euros	Anxiolythics	Total euros
Carbamazepine (P=3)	2.45	Alprazolam (P=5)	10.1
Gabapentin (P=14)	131.76	Bromazepam (P=27)	7.68
Oxcarbamazepine (P=2)	12.47	Clonazepam (P=41)	27.83
Topiramate (P=13)	295.85	Clorazepate (P=50)	181.14
		Diazepam (P=53)	30.08
		Diazepam +	5.71
		sulpride (P=53)	27.68
		Ketazolam (P=1)	28.06
		Lorazepam (P=27)	20.66
		Medazepam (P=27)	2.75
		Hydroxyzine (P=3)	28.03

Hypnotics	Total euros
Clormetiazole (P=1)	0.97
Doxylamine (P=7)	11.25
Flurazepam (P=6)	6.64
Lormetazepam (P=76)	33.6
Midazolam (P=2)	1.31
Zaleplon (P=13)	49.44
Zolpidem (P=5)	3.5
Zopidone (P=1)	1.54

P indicates number of prescriptions.

Table 1. Ranges of consumption of the different therapeutic subgroups

Subgroup	DDD (% of total)	DHD × 100 prisoners/day	Median	Percentile 25	Percentile 75
Antidepressants	1680.84 (17%)	8.66	9.38	14	14
Antipsychotics	1358.91 (14%)	7	3.5	7	14
Anxiolytics	4495.02 (46%)	23.17	6.93	14	28
Hypnotics	2089.09 (21%)	10.77	14	14	28
Antiepileptics	475.84 (5%)	2.45	5.55	3.5	8.96

DDD indicates defined daily dose; DHD, dose/inhabitant/day.

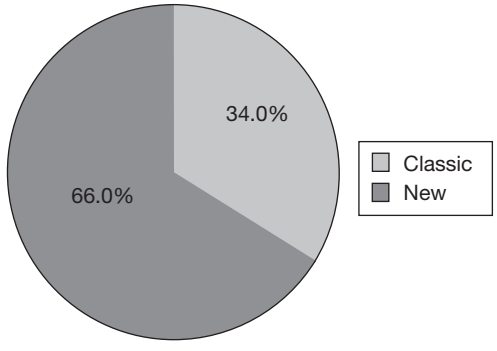
they reached a cost of more than €2813, more than half of the total expenditures in psychoactive drugs made by the centre during the 2 weeks' study period).

After them, an antiepileptic, topiramate with 13 prescriptions that cost €295 (in that moment the generic version did not yet exist) and an antidepressant, mirtazapine, with 31 prescriptions that surpassed €204.88. Regarding the anxiolytic subgroup, clorazepate implied the greatest cost, where 50 prescriptions cost €181. Among the hypnotics, in the case of zaleplon, 13 prescriptions cost €49 (currently, it is not commercialised). The highest number of prescriptions registered came from a hypnotic, lormetazepam (76), that cost only €33.

The information that Figure 2 reflects refers exclusively to the subgroups of psychoactive drugs where a shared delimitation exists between substances considered as "classic" or "old" and "new" substances, the subgroups that correspond with the antidepressants (for example, the amitriptiline, a classic active ingredient, and mirtazapine, that is new), the antipsychotics and the antiepileptics. Therefore, the prescriptions of benzodiazepines are not reflected here.

The proportion of the cost depending on which antipsychotics, antidepressants, and antiepileptics belonged to the drug category of new or old generations is very noticeable (difference that was statistically significant, $P<.001$).

In Figure 3, the differences between the proportion of costs corresponding to the classic and the new drugs is observed, where



Distribution of the prescriptions according to classic/new drugs

Category	No.	%	95% CI
Classic	109	34.0	29.0-39.3
New	212	66.0	60.7-71.0

Distribution of costs according to classic/new psychoactive drugs

Category	Cost, €	% of cost	95% CI
Classic	117.01	2.4	2.0-2.8
New	4835.87	97.6	97.2-98.0
Total	4952.88	100.00	

Figure 2. *Distribution of costs (%) according to classic/new psychoactive drugs. CI indicates confidence interval.*

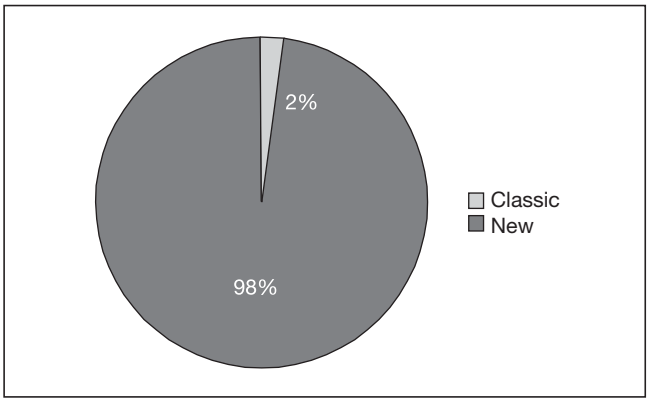


Figure 3. *Distribution of the prescriptions (%) according to classic/new psychoactive drugs.*

there is an increase in the case of the antipsychotics. In this category, only 1.4% of costs corresponds to classic drugs.

Just as the percentage of prescriptions that corresponded with classic drugs was 34 (95% CI, 29-39.3), as shown in Figure 2, these only accounted 2.4% of costs (9% CI, 2-2.8) (Figure 3). The percentage of prescriptions that corresponded to new drugs was 66% (95% CI, 60.7-71.0) accounted for 98% of costs (95% CI, 97.2-98).

Regarding expenditures in psychoactive drugs by units of the penitentiary centre, the median values, the 25 percentile and the 75 percentile of the cost per prescription/day in each one of the units are represented in Table 3.

The nursing unit stands out as the source of greatest expenses (median of €11.95) followed by unit 7 (€3.04), and the transfer and isolation units (€2.80), all of them with values much higher than the resulting median of the "ordinary" units of the permanent population of the centre (whose median was €0.90).

Regarding the cost per prescription, statistically significant differences were also found among the prescriptions of those patients reviewed by the psychiatrist and those that were from patients that had not been evaluated by the specialist (Table 4).

Difference of the total cost depending on the accepted commercial offer

The registration of the prescriptions was done by highlighting the active ingredient alone, without specifying commercial names or its correspondence or lack thereof with a generic drug. Once all of the commercial offers received where collected from the laboratories for the different presentations of each active ingredient, the amount saved could be calculated, which can only be attributed to the selection of the most competitive price (as other aspects were not taken into consideration) by the pharmacist of the centre. The total cost of the consumption of psychoactive drugs of the 2 weeks' study period oscillated between the following values:

– Total cost of maximum offers–resulting from the highest price of each active ingredient among the offers presented by

Table 3. Distribution of costs (euros) per units

Unit	Median	P_{25}	P_{75}
Unit 1	0.9	0.49	2.98
Unit 2	1.12	0.56	3.36
Unit 3	0.56	0.26	1.12
Unit 4	1.12	0.66	3.36
Unit 5	0.61	0.28	2.34
Unit 6	0.66	0.3	4.48
Unit 7	3.04	0.86	16.48
Unit 8	0.61	0.26	4.17
Unit 9	1.12	0.37	6.3
Transfers and admissions	2.8	0.66	7.56
Isolation	2.8	0.56	21
Nursing	11.95	1.68	38.34
Total	1.4	0.56	6.48
Grouped units[a]	**Median**	**P_{25}**	**P_{75}**
Transfers and admissions	2.8	0.66	7.56
Isolation	1.3	0.56	4.06
Nursing	11.95	1.68	38.34
Rest	0.9	0.38	4.06

[a]Test of global median: $P<.001$.

Table 4. Distribution of cost (euros) according to psychiatric revision of prescriptions

	Average (DE)	Median (P_{25}-P_{75})	*P*
Reviewed	129.4 (303.2)	31.6 (27.7-148.1)	.01
Not reviewed	201.9 (384.9)	31.6 (27.8-203.3)	

different laboratories and requested by the pharmacist of the centre—: €5973.79

– Total cost of minimum offers-resulting from the minimum price offered/requested for each active ingredient (with a discount in the invoice). It only deals with a selection of offers from a public vender in the case of centralised neuroleptics (olanzapine and risperidone at that date): €5362.80
– Saving by search and selection of offers: €610.99 (annual speculation: €14 663.76).

DISCUSSION

As this is a descriptive epidemiological study, it is impossible to extract causal conclusions. The limitations of the study as a transversal descriptive study have been varied. First, the very limitations of an investigation that aimed avoiding any implications of any type of modifications concerning the habitual prescribing process, or the imposition of novelties in the data collection dynamics that would possibly cause changes in normal operations. It rather aimed the exclusive use of the normal means of registration of treatments that were being used in the centre. We wanted to see what, how much and to whom the prescriptions were made, and describe in the most exact and detailed manner possible, the current reality in that referring to psychoactive drugs in prisons.

The Madrid III Penitentiary Centre (Figure 4) has one of the best records concerning pharmaceutical expenses in the Autonomous Community of Madrid and, specifically, the first position in 2006, regarding the lowest centralised expense per prisoner per neuroleptic, among the standard centres of this community and the fourth position among all of the prisons in Spain (excluding those in Catalonia), having reduced expenditures in neuroleptics centrally acquired from 2005 to 2006 by 42.45%.[26] In spite of all of this, the total expense in psychoactive drugs in a 2 week period in 2005 surpasses €5379.27, which implies an average of €384.21 per day spent on these medications.

During the study period, 23.5% of the prisoners had been prescribed some type of psychoactive drug. The high percentage of patients in treatment with 1 or 2 psychoactive drugs (up to 76%) can be considered as an indicator of quality control, as many therapeutic protocols recommend avoiding when possible the accumulation of substances in the treatment of mental illnesses.

On the other hand, the DHD turned out to be 513.77 DDD per 1000 prisoners/day, a quantity that is much higher (almost double) that found by Cañas in the León Prison in 2001, where 280.74 DDD/H/D of psychotropic drugs were consumed (250.824 DHD of psycholeptics and 29.918 DHD of psychoanaleptics). However, it is very possible, given the progression of the consumption of psychoactive drugs that Penitentiary Institutions have observed in the last few years, that data from 2001 is not at all comparable with other intentions to demonstrate the quantity of this progression.

The subgroup of the most consumed psychoactive drugs were anxiolytic drugs, 4495.02 (46%) DDD of the total, among which diazepam (21.5%) and clorazepate (20.2%) stand out of the prescriptions of said subgroup. According to the ranking by consumption of active ingredients published by the Spanish

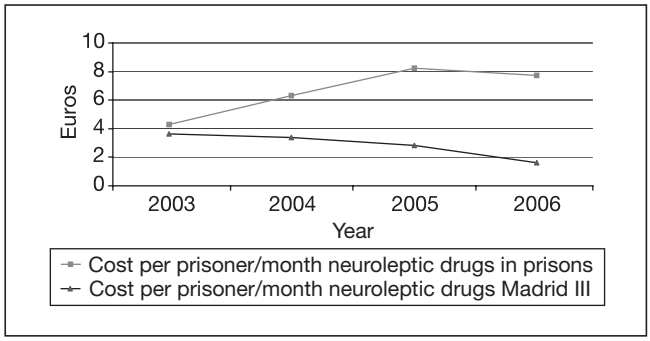


Figure 4. *Cost in centrally acquired neuroleptic drugs (risperidone and olanzapine) per prisoner per month in prisons compared to the cost in centrally acquired neuroleptic drugs (risperidone and olanzapine) per prisoner per month in the Madrid III Penitentiary Centre.*

Ministry of Health and Consumer Affairs from 2005, the most consumed psychoactive drugs in number of packets with prescriptions charged to the Spanish National Health System were lorazepam and alprazolam (also anxiolytics), which implies a convergence between the consumption profile of the prison and the non-penitentiary environment concerning the subgroup and a difference regarding the active ingredients, most likely related with the choice of anxiolytics in a population with a greater index of drug addicts.

Both the hypnotics and the anxiolytics imply 67% of the prescribed doses, however, they only represent 8% of expenses.

The general ranking according to the cost of antipsychotic drugs in prison, also imitates that observed in the non-penitentiary environment; this way, the medications of psychiatric use that entailed the greatest costs in 2005 for the Spanish National Health System were risperidone, in first place, and olanzapine, in second place.[27] The same thing occurred in our penitentiary centre, risperidone in its 2 formats (pills and slow-release injections) and olanzapine were the psychoactive drugs that cost more than all others in the 15 days of the study.

Regarding the subgroup of antidepressants, those that were most expensive for the Spanish National Health System were paroxetine, in first place (the sixth drug in the ranking by cost of all of the active ingredients), and venlafaxine, in second place (tenth place in the general classification).[27] In Madrid III, mirtazapine was in first place and paroxetin was next (with 24% and 18%, respectively, of the prescriptions of the subgroup. However, these antidepressants were very far from the most expensive antipsychotic drugs and from the topiramate (antiepileptic) in the general cost ranking, which makes us think that these last drugs were used compassionately (without submitting any request from the centre by the official process during the study period). Factors such as the elevated frequency with which the consumed doses are found to be infra-therapeutically for some substances and the fact that precisely the patients that receive these substances are rarely derived for psychiatric revisions may also result as indicative of the entity of compassionate use, maybe because the seriousness associated with compassionate use is less and the clinics consider that this is not necessary. Antipsychotic drugs such as quetiapine, used incorrectly at times as a hypnotic, would be a good example of this, as are the non-indicated use and/or conditions of use, of risperadone or antiepileptics such as topiramate and gabapentin, drugs that are all used at doses lower than those needed for their approved indications and whose prescription is rarely supervised by a specialist, even when this derivation is always recommended for diagnoses with the indication of the use of neuroleptic or antiepileptic drugs.

Indeed, although this is not a fact extracted from this study (and coinciding with the warning from the Spanish General Subdirectorate of Penitentiary Health on February 14, 2006 on compassionate use), it may be that mirtazapin (one of the most expensive antidepressants, that accounts for 32.7% of the expenses in this type of medications and that represents 24% of prescriptions) is frequently used as a hypnotic, like olanzapine, both in the search for non-benzodiazepine alternatives in cases of multiple drug dependence. Equally, it may be that risperidone, in its slow-release injectable format, is being used in personality disorders with a theoretical anti-impulsive effect (a use that is not found among the approved indications, it is only approved for the treatment of psychotic disorders).

We must point out that one of the essential measures when rationalizing costs includes greatly reducing compassionate use and to consider, when necessary, alternative classic medications that are equally effective and more cost-efficient. In cases of sleeping disorders, in the recently published "Guía para el uso autorizado de psicofármacos en España"[28] (*Guide for the authorised use of psychoactive drugs in Spain*), the use of antidepressants such as trazodone is approved, as well as clometiazol, classic antipsychotics (such as chlorpromazine, clotiapin, and levomepromacin), or hydroxyzine.

The decision to prescribe one drug or another is, ultimately, in the hands of the physician that is converted into the mandatory resource manager. Although this study did not have a design that allowed for the analysis of the influence of the prescribing physician, the differences found between units seem to indicate that, as during the study period and excluding prescriptions in emergencies, it was always the same health professional that ordered the treatments in each unit. Therefore, another type of investigation is necessary for this delimitation (influence of the prescriber in the difference between units-influence of other factors). Thus, although risky, it turns out to be reasonable to think that the differences between unit 4 and isolation unit (both under high security) or the nursing unit and the rest of the units of the centre will be principally attributable to the characteristics of the prisoners and, nonetheless, the differences found between the ordinary units will be conditioned more by variables related with the prescriber. This way, among the factors that we believe are related with the good management data of our centre, the labour stability of our health personnel or the existence of relatively uniform prescribing criteria between the different physicians of the centre and between them and the psychiatrist stand out.

Thirty-one percent of the total of prisoners with some type of psychoactive drug prescription has been reviewed by the psychiatrist at least once in the last year. Although we do not have the data from primary care, it is very possible that we are dealing with an elevated proportion compared with that of the extra penitentiary environment. However, on the contrary to what can be imagined, the most reviewed drugs by the psychiatrist are not those that are most difficult to manage (indicated in serious psychiatric diagnoses, such as antipsychotics). This is an indicator of the existence of some type of mistake in the criteria of derivation that could be explained by the lack of unified protocols and it could also be attributed to the frequency of the compassionate use of said drugs, as when a low nocturnal infra-therapeutic dose is prescribed of a neuroleptic drug to a patient that complains about sleeping problems, this does not entail a diagnosis that needs to be treated by a psychiatrist. Indeed, only 19% of the prescriptions of antipsychotics and 12% of the antiepileptics

(drugs that account for an elevated percentage of expenses) had been reviewed.

The other important conditioning factor is the management of purchases carried out from the pharmacy, and, especially, the search and selection of offers in a market that seems to fix prices in a flexible manner, since, if the savings were extrapolated from these 14 days to 12 months they would reach €14 663.76 only in psychoactive drugs. These results point to a very important labour of the pharmacist together with the physicians of the centre. Therefore, we wonder if the potential savings and rationalised use justify the return of responsibility to each employee as a manager, and the establishment of measures that motivate good working habits that are currently left to merely individual factors.

This would be indispensable in the hopes to unify criteria to prescribe and select offers of the same active ingredient, and for the elaboration of prescribing protocols or pharmaco-therapeutic guides, a process where psychiatrists, pharmacists and physicians should all participate together.

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