

# The use of medication and alcohol among the Spanish population

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The 1993 Spanish National Health Survey data were used to estimate how frequently both medication and alcohol were used among 21 084 people over 16 years of age. A total of 47.1% of the population, especially women and an increasingly older section, had taken some kind of medication during the previous fortnight. A total of 9.8% of the population took medication and alcohol together. This was more frequently observed among men than among women, and especially so among the older age groups. These data reveal that concomitant alcohol and medication use is frequent among the Spanish population, and suggest a need to devote much more attention to this potential problem.

**Keywords** drug-utilization-trends alcohol drug-interaction

## Introduction

Adverse drug interactions are an important clinical problem and it is well-known that several different mechanisms are involved in their pathogenesis [1,2]. Concurrent use of alcohol and medication may be of significance, but there are few epidemiological studies of drug-ethanol interactions, and such studies are needed in order to evaluate whether or not combined drug-ethanol intake is hazardous.

Within the European Union, Council Directive 92/27/EEC of 31 March 1992 on the labelling of medical products for human use and on package leaflets [3], specifies that 'the package leaflet shall be drawn up in accordance with the summary of the product characteristics; it shall include: forms of interaction with other medicinal products and other forms of interaction (for example, alcohol, tobacco, foodstuffs) which may affect the action of the medicinal product'.

This paper documents the frequency of concurrent use of alcohol and medication among members of the population over 16 years of age by means of data from the 1993 Spanish National Health Survey.

## Methods

The study was based on information contained in the computer data base from the National Health Survey carried out by the Spanish Ministry of Health in 1993

[4]. A survey of 26 334 people (21 084 adults and 5250 children under 16 years of age), a representative sample of non-institutionalized Spaniards, was carried out. We only studied the adult population, since those under 16 years of age were not asked about alcohol consumption.

A complex multistage sample design was featured. It was designed as follows: firstly, by Spanish communities; secondly, in seven stages, according to the number of inhabitants: <2000 ( $n=1849$ ); 2001–10 000 ( $n=3614$ ); 10 001–50 000 ( $n=4855$ ); 50 001–100 000 ( $n=1782$ ); 100 001–400 000 ( $n=4925$ ); 400 001–1 000 000 ( $n=1354$ ); >1 000 000 ( $n=2689$ ); missing ( $n=14$ ); thirdly, by cities in each of the communities; and, finally, by sex quotas (males  $n=10 176$ ; females  $n=10 877$ ; missing=31) and age quotas (16–25  $n=4625$ ; 26–35  $n=3872$ ; 36–45  $n=3250$ ; 46–55  $n=2979$ ; 56–65  $n=3025$ ; 66–75  $n=2133$ ; >75  $n=870$ ; missing=328). When a person selected was unavailable or unwilling to be interviewed a replacement was chosen. The number of such instances is not known.

The questionnaire included, among others, items relating to medication and alcohol consumption. Those surveyed were asked if they had taken any medicine in the previous 2 weeks, and if so, what kind of medicine (using 17 different therapeutic categories). Regarding alcohol, they were asked if in the previous 2 weeks they had taken any kind of alcoholic beverage, how often and how much. The questionnaires were administered by trained interviewers.

Statistical analysis was by means of SAS software Version 6.07 (SAS Institute, SAS), which was used to

calculate percentages, odds ratios and 95% confidence intervals. A *P* value of  $\leq 0.05$  was considered as significant.

## Results

A total of 47.1% (53.2% women, 40.5% men; odds ratio 1.67, 95% CI 1.58–1.76) of the population had taken some kind of medication during the fortnight prior to the survey being carried out (Figure 1). This increased as the age of the population increased. In addition, 24.9% of the population consumed alcohol at least once per day (39.9% men, 10.8% women; odds ratio 5.49, 95% CI 5.11–5.90). Alcohol consumption was more common among the middle-aged (Figure 1).

A total of 9.8% of the population both took medication and consumed alcohol on a daily basis (20.9% of those taking medication), and this was more frequent among men (15.1%) than among women (4.9%; odds ratio 3.42, 95% CI 3.08–3.79). An upward trend was observed in joint use as age increased in men (4.8% among those of 16–25 and 28.0% among those of over 75 years of age); but this trend was not observed for women (Figure 1).

A total of 29.6% of the population took only one type of medication, 10.1% two types and 5.8% three types or more. There were fewer daily drinkers among those taking medication (20.9%; odds ratio 0.66, 95% CI 0.62–0.71) than among those not taking medication (28.2%). Increasingly fewer individuals consumed alcohol as the number of medicines increased (one type of medication 22.5%; two 19.9%; three or more 14.6%).

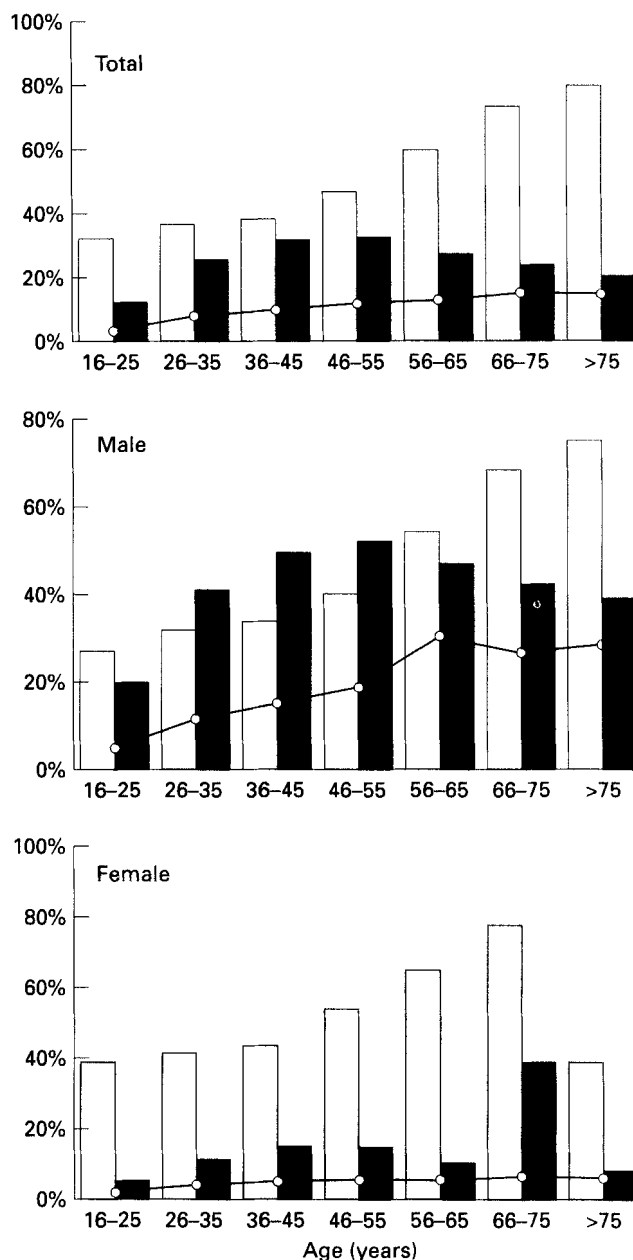
Table 1 shows the percentage of the population taking each type of medication and the combined use of medication and alcohol. The percentage of daily drinkers ranged from 11.1% in users of antidepressants and 23.2% in users of respiratory products.

## Discussion

Use of medicines is known to be a common among Western populations [5], and the data obtained in our study confirm this: 47.1% of the population, especially females and the elderly, had taken medication during the previous fortnight.

Adverse drug reactions and interactions are common clinical problems [1,2]. It is well-known, that alcohol interferes with the metabolism of a large number of substances, mainly as a result of its enzyme induction capacity [1]. However, there is little information available about the extent of these types of interactions.

According to our study, 9.8% of the population, and more frequently males and older citizens, take medication and drink alcohol on a daily basis. However, it should be noted that alcohol consumption is less common among those taking medication than those who do not, and the decrease in the number of users is accompanied by a corresponding fall in the number of



**Figure 1** Use of medication (□), alcohol (■) and medication and alcohol (○) by the Spanish population aged over 16 years.

medicines taken. Our data do not permit us to study whether or not interactions take place between drugs and alcohol but they do demonstrate the frequency with which medication and alcohol are used jointly.

For all authorized medical preparations which could interact with alcohol, there should be a warning to this effect in the Summary of Products Characteristics, in line with European Union regulations [3]. In Spain this warning can be found in 437 cases (12.1%) out of a total of 3620 registered drugs.

Not enough information concerning alcohol consumption is given to patients receiving pharmacological treatment [6,7]. In order to avoid drug-ethanol interactions, physicians should devote more attention to this possibility. Recently, a number of advisory proposals have been put forward [8] aimed at avoiding adverse reactions in older patients. This study shows that middle aged and older patients are the most frequent users of

**Table 1** Joint use of medication and alcohol by persons over the age of 16 years

<i>Class of medication</i>	<i>Population taking the medication* (%)</i>	<i>Alcohol consumption in users of various classes of medication (%)</i>
Antirheumatics	4.8	17.3
Respiratory products	14.9	23.2
Analgesics and antipyretics	10.8	21.4
Vitamins	2.9	17.7
Cardiac therapy	3.3	16.9
Hypotensives	7.8	15.8
Laxatives	1.4	19.7
Alimentary tract	3.3	22.9
Tranquillizers and hypnotics	4.2	16.6
Antidepressants	1.5	11.1
Antibiotics	2.0	17.1
Contraceptives	1.2	15.8
Antiobesity	0.3	16.8
Antiallergic products	1.3	18.7
Cholesterol reducers	2.6	17.3
Antidiabetic therapy	2.3	14.9
Various	6.0	20.0
Total	47.1 Mean	20.9

\*Please note that some patients take more than one class of medication and hence the individual classes cannot be added up to reach the total.

drugs and alcohol, and underlines the importance of these proposals.

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