# Gender influence in the quantity of drugs used in primary care

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(Influencia del género en la cantidad de los medicamentos utilizados en atención primaria)

#### **Abstract**

Objective: To analyze whether for an equal health problem there are gender differences in the drugs used in an adult population attended in the Health Care Centers of the Valencian Community (Spain).

Methods: A cross-sectional analytical study was carried out between February-August 1997. The independent variables were: socio-economic parameters, frequency of visits, and selfperceived or diagnosed health problems, and the dependent one the number of drugs consumed.

Results: Of the 812 patients considered, 801 consumed medication. Eighty percent of the health problems for which drugs were used involved 5 apparatuses and systems (mean: 3.3 health problems/patient). The 5 most consumed therapeutic groups accounted for 81% of the total (mean: 4.5 drugs/patient). Significant differences were recorded, with greater female consumption in the central nervous system and genitourinary tract therapeutic groups, and with greater male consumption in relation to the respiratory system and systemic anti-infectious therapy. Drug use increased with age, lowest educational level, lowest professional categories, and with the highest frequency of visits to the physician. Significant differences were also recorded in drug use by occupational status, marital status and family structure. The multivariate analysis showed the number of health problems and the frequency of visits accounted for 82.2% of the variability of the variable «number of drugs consumed». The variability accounted for by gender was explained by the variable health problems, the main factor underlying drug consumption among women and

Conclusion: The main finding is probably that women do not use larger numbers of drugs than men if health problems and frequency of visits are controlled.

**Key words:** Gender differences. Drugs. Health problems. Cross-sectional study. Primary care.

#### Resumen

Objetivo: Analizar si para el mismo problema de salud hay diferencias de género en los medicamentos utilizados en una población adulta atendida en centros de salud de la Comunidad Valenciana.

Métodos: Estudio observacional transversal analítico realizado entre febrero y agosto de 1997. Variables independientes: parámetros socioeconómicos, frecuentación de los servicios de salud y problemas de salud autopercibidos o diagnosticados. Variable independiente: número de medicamentos consumidos.

Resultados: De los 812 pacientes, 801 tomaban medicamentos. El 80% de los problemas de salud por los que se medicaban pertenece a 5 aparatos y sistemas (media: 3,3 problemas de salud por paciente). Los 5 grupos terapéuticos más consumidos suponen el 81% del total (media: 4,5 medicamentos por paciente). Se evidenció un mayor consumo significativo por la mujer de medicamentos de los grupos terapéuticos del sistema nervioso central e infecciones genitourinarias, y mayor consumo por los varones de medicamentos de los grupos terapéuticos del sistema respiratorio y terapia antiinfecciosa sistémica. El uso de los medicamentos incrementó con la edad, el menor nivel educativo, menor categoría profesional y con la mayor frecuencia de visitas. También se encontraron diferencias significativas en el uso de medicamentos según la situación laboral, estado marital y la estructura familiar. El análisis multivariante mostró que el número de problemas de salud y la frecuencia de visitas explicaban el 82,2% de la variabilidad de la variable «número de medicamentos consumidos». La variabilidad representada por el género se explicó por la variable de problemas de salud, el principal factor subyacente del consumo de medicamentos entre mujeres y hombres.

Conclusiones: El hallazgo principal es, probablemente, que las mujeres no utilizan mayor número de medicamentos que los hombres al ajustar por problemas de salud y la frecuencia de las visitas.

Palabras clave: Diferencias de género. Medicamentos. Problemas de salud. Estudio transversal. Atención primaria.

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### Introduction

everal studies have associated the female gender with increased drug consumption. Poorer self-perceived health, self-medication practices and a greater use of the available health services on the part of women have been some of the causes suggested to explain the differences found. The increased

consumption of medication has also been related to educational level, occupational and marital status, and health problems<sup>1-10</sup>.

One of the foremost aims of the World Health Organization (WHO) has been to reduce health inequalities among different social groups 25% by the year 2000. In this context, the WHO considers health care itself, among other causes, as one of the factors favoring inequalities in terms of health 11,12. Under conditions of equal patient demands or complaints, such inequalities can manifest as differences in access to health care, variable diagnostic and/or treatment efforts or access to the benefits afforded by technological advances, which are fundamentally concentrated in hospitals<sup>13-15</sup>. Such differences in relation to patient gender would be the consequence of what Dreachslin<sup>16</sup> has termed «patient gender bias», and Healy<sup>17</sup> described as the «Yentl syndrome», in reference to the presumed need for women to disguise themselves as males to secure the same quality access to health care as males.

The increased accessibility, the high frequency of consultations for banal problems, and other characteristics typical of the primary care setting could lead to increased utilization of the first level of health care by women, and to an increased tendency towards symptomatic pharmacological treatment. It has also been suggested that professionals may be more prone to prescribe medication to women than to men for the same health problems<sup>14,18</sup>.

In a previous paper, we suggested the influence of gender upon the quality of medicine, by pointing to the greater likelihood for women between 45 and 64 years of age to take lower quality medication. In addition, it showed the effect of where the prescription was issued and of health problems in explaining this difference in consumption<sup>19</sup>.

The aim of the present study is to analyze whether for an equal health problem there are gender differences in the profile of drugs used in an adult population attended in a primary care setting.

### Methods

A cross-sectional analytical study was made involving patients selected for an evaluation of the quality of drug use, taking into consideration the percentage distribution of the population in the three provinces that conform the Valencian Community (Spain) (total population: approximately four million), between February and August 1997.

The selection of Health Care Centers was made taking into account their accessibility, feasibility and geographical distribution. Thirteen primary care centers were included, pertaining to 11 health areas, with an approximate population of 274,000 inhabitants; of these, 98.5% belonged to urban nuclei. The patients were recruited by consecutive sampling of both sexes equally when visiting the Health Care Center. A total of 431 individuals of each sex was calculated for the comparison of proportions to detect a difference of  $\geq$  10% ( $\alpha=0.05,\,\beta=0.20$  in bilateral contrasting, estimating a loss rate of 10%). This size suffices to detect a difference in the number of drugs between sexes of 0.65 or higher, assuming a standard deviation (SD) of 3, a risk  $\alpha=0.05,\,\beta=0.20,$  and a loss rate of 10%.

The inclusion criteria were patient age over 14 years and the obtainment of informed consent. The exclusion criterion was the presence of cognitive impairment not allowing a normal patient interview.

The following data sources were used: a structured questionnaire in which the items explored socioeconomic aspects, the frequency of health care visits (measured in terms of the time elapsed since the last visit to the family physician: never before; more than 12 months before; between 2 and 12 months before; in the last 2 months), information on drugs used at the time of the visit (both prescribed medication and self-medication), linked to the indication for which the drugs were used. For this latter purpose data were collected on the use of drugs for health related problems at the time of the visit (structured according to the common disorders self-perceived by the population, and according to pharmaceutical forms)20. The drugs recorded (including prescribed medication and self-medication) were grouped according to the International Anatomical Classification of the Pharmaceutical Specialities Catalogue<sup>21</sup>, considering any pharmaceutical specialities not contemplated in the catalogue as representing non-catalogued medication. Data collection was carried out by three interviewers. Patients were aware that this questionnaire formed part of research work, but as a study on the use of medication and traffic accidents.

Data were completed and confirmed using medical records and the long-term treatment card, this being a document widely used in Spanish primary care, reflecting the medication authorized for prolonged treatment (i.e., with a duration of more than one month) in patients with chronic illnesses. In order to assess the reliability of the questionnaire, an analysis was made of 30 surveys involving the same users with a separating interval of two weeks; the general concordance index ( $p_o$ ) was 96.7%.

The descriptive analysis was based on the chi-square test for the comparison of proportions, while the Student t-test and analysis of variance (ANOVA) were used for the comparison of means. The main results are specified with the corresponding 95% confidence intervals (95%CI). A multivariate analysis involving multiple linear regression was made to investigate the effect of gender upon the number of drugs, and to control for the be-

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