Original Article

Self-medication in adult Latin American immigrants in Seville*

Automedicação em adultos imigrantes latinoamericanos em Sevilha

Automedicación en inmigrantes latinoamericanos adultos de Sevilla

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ABSTRACT

Objective: To estimate the prevalence of non-prescription pharmaceutical use in the Latin American immigrant population. Method: A descriptive, cross-sectional study of a representative sample of 190 immigrants. We used a questionnaire based on the Behavioral Risk Factor Surveillance System (BRFSS). Results: In the past six months, 77.4% of the sample self-medicated. The prevalence of consumption of antiinflammatory and non-prescription analgesics was the highest, followed by antibiotics. A statistical difference was observed in non-prescription use of antibiotics by gender. Conclusion: The consumption of pharmaceuticals without a medical prescription in the Latin American immigrants in the city of Seville is high.

Keywords: Emigration and immigration; Prevalence; Drug Utilization; Self medication; Latin America

RESUMO

Objetivo: Para estimar a prevalência de drogas sem receita médica na América Latina população imigrante. **Método:** Um estudo descritivo transversal com uma amostra representativa de 190 imigrantes. Foi utilizado um questionário com base no Sistema de Vigilância Comportamento de Risco Fatores de Risco (BRFSS). **Resultados:** Nos últimos seis meses 77,4% da amostra foi automedicação. A prevalência de analgésicos antiinflamatórios e não sujeitos a receita foram as mais altas, seguido de antibióticos. Houve diferença estatística no uso de antibióticos sem receita médica por sexo. **Conclusão:** O consumo de drogas sem uma prescrição de imigrantes latino-americanos na cidade de Sevilha é alta.

Descritores: Migração internacional; Prevalência; Uso de medicamentos; Automedicação; América Latina

RESUMEN

Objetivo: Estimar la prevalencia de consumo de fármacos sin prescripción médica en la población latinoamericana inmigrante. **Método:** Estudio descriptivo transversal en una muestra representativa de 190 inmigrantes. Se empleó un cuestionario basado en el del Sistema de Vigilancia de Factores de Riesgo de Riesgo de Comportamiento (BRFSS). **Resultados:** En los últimos seis meses el 77,4% de la muestra se ha automedicado. La prevalencia de consumo de antiinflamatorios y de analgésicos sin prescripción médica fueron las más altas, siguiéndoles los antibióticos. Se observó diferencia estadística en uso sin prescripción de antibióticos por sexo. **Conclusión:** El consumo de fármacos sin prescripción médica de los inmigrantes latinoamericanos de la ciudad de Sevilla es alto.

Descriptores: Migración internacional; Prevalencia; Utilización de medicamentos; Automedicación; América Latina

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INTRODUCTION

Self-medication is defined by World Health Organization (WHO) as the selection and individual use of medicines to allieviate symptoms or cure an illness [1]. This organization has promoted *responsible self-medication* [2] which, according to the International Council of Nursing [3], is an important practice in the care of the person, for which nursing plays a vital role in its promotion through education.

One of the more serious direct consequences of self-medication to the health of the individual is that it masks the symptoms of the illness, which can compromise the diagnosis, and therefore the treatment of a condition, which could worsen [4]. However, the frequency of utilization of non-prescription medications has been rising, becoming a negative point to regard, as it is now employed with increasing frequency with pharmaceuticals that should be utilized only under medical supervision [5].

Spain, which for centuries had been a source country of immigration, in the last twenty years has become one of the principal host countries in Europe [6]: during the first decade of the 21st century, immigrants within this country increased from 1.8% to 11.4% of the total population living in Spain. In 2008, by region of origin, 40% of the foreigners came from Europe, followed by 31% from South America [7]. According to the Statistical Yearbook of Immigration [8], Andalusia in 2009 had 8% of the Latin American immigrants in Spain, with this group accounting for almost half of the immigrant population in Seville (46.3%).

The migration phenomenon carries social stress (post-migratory stress), which has socio-health and economic implications that often include the process of family disintegration, constituting a major risk factor for the consumption of drugs [9]. Immigrants bring with them different patterns of behavior and perception with respect to access to socio-health services, but also, the migration process produces new situations related to the consumption of pharmaceuticals and drugs [10].

Several studies [11,12] conducted in countries as diverse as Spain, South Africa or the United States, cited the number of episodes of illness due to self-medication to be between 40% and 90%. According to the WHO, 6% of prescription medications are dispensed without prescription in pharmacies (chiefly the analgesics, cold medicines and antibiotics) [5].

Research conducted in Latin America has also shown that this practice is very common. In Brazil, a study [13] in 1988 noted that self-medication was the most common reason, between 40% and 43%, for the acquisition of medicines from the pharmacies. In Ecuador, an investigation [14] obtained a sample in two pharmacies, observing that 51% of sales were made without a prescription, selling medications that were accompanied by serious side effects. In Chile, a study [15] found that 40% of people consumed non-prescription medications during the past year. With respect to Latin American migration, in the destination country, another study [16] warned that in the USA, this community considered self-medication with antibiotics to be normal.

Self-medication and the utilization of traditional remedies from the culture of origin, may also affect immigrant health [17]. It is, ultimately, one of the cultural and linguistic elements that become barriers for the understanding of the immigrant patient's health status and could have repercussions on the effectiveness of care that they are provided within the health-care services [18]. In Spain, there are few studies about pharmaceutical spending and the utilization of medications in the immigrant population, as compared to the native population. Some research has examined the determinants of the consumption of nonprescription pharmaceuticals in the Spanish population [5,10,19], with only limited empirical evidence about the differences in the degree of self-medication among Spanish and immigrant populations.

In a study conducted during 2006 [20] in 30,441 adult patients of all Spanish pharmacies participating in the program, of whom 4% were foreigners, the demand for non-prescription pharmaceuticals in the native population was 21%, considering self-medication only 9%; but in the foreign population the demand was 37%, and the self-medication was 26%, almost triple the Spanish population.

Therefore, it was considered essential that research be conducted about this emerging population, justifying the present study.

OBJECTIVE

To estimate the prevalence of pharmaceutical consumption without medical prescription in the Latin American adult immigrant population of the city of Seville, during the year 2011.

METHODS

A descriptive, cross-sectional study was conducted using a stratified sample with proportional allocation by the variables of gender, age and administrative district. Of a total population of 8,675 immigrants, a representative sample of 190 immigrants was used. The possible confounding effect of the variable of age was taken into account by restricting from the sample

people under 25 and over 44 years of age. People between 25-44 years were considered to be the most homogeneous study group for the sample, which also was described in another study [21] as the most frequent group in this community.

For this research, we used some sections of the *Behavioral Risk Factor Surveillance System* (BRFSS) questionnaire associated with behavior (2009) from the *Centers for Disease Control and Prevention* of the United States [22]. In this article we present the results of: a) socio-demographic data of the respondent (gender, age, marital status, educational level, place of birth, length of stay in Spain, and occupation), b) consumption of pharmaceuticals (anti-inflammatories, antibiotics and analgesics), traditional remedies (infusions, plasters), and self-medication and, c) self-perceived health status.

The prevalence of pharmaceutical consumption was calculated by dividing the number of people who affirmed that they had the habit by the total number of people participating in the study.

For this investigation, immigrant referred to "any person who has as his/her country of origin one other than Spain, who at the moment of conducting the survey has established his/her habitual residence within the national territory", which corresponds to the definition used by the *National Institute of Statistics* in its *National Immigrant Survey of 2007* [8]. The concept of self-medication was established, according to the *Association of the European Self-Medication Industry* (AESGP), as the "use by patients of non-prescription medicines for symptoms and minor ailments" [23].

Data collection was conducted from January to May of 2011, the recruitment was made through immigrant associations and subsequently individuals were asked to take the survey. The selection criteria were: male or female resident in one of the official neighborhoods or census tracts of the eleven administrative districts of the city of Seville; aged between 25 and 44 years; having been born in some of the countries considered by the United Nations in its ranking of nations, territories and regions [24] as Latin American or South American countries (Argentina, Bolivia, Brazil, Chile, Colombia, Cuba, Ecuador, Paraguay, Peru, Uruguay, Venezuela) and having migrated to Spain; ability to communicate and understand the requirements of the study and sign the informed consent. The information was collected by a single interviewer, and no individual refused to answer the questionnaire.

The procedures used to conduct this study followed the ethical principles which included the Declaration of Helsinki of the World Medical Association of 1964 (updated 2008); written and informed consent was obtained; in relation to demographic data, in order protect the honor, anonymity and personal intimacy, according to the Organic Law 15/1999 on Protection of Personal Data, the questionnaires were numbered.

The data were analyzed with the SPSS statistical package, version 17.0 for Windows. Descriptive analyses were performed, using measures of central tendency and dispersion for quantitative variables, and proportions for the qualitative. Relationships were explored of some variables of interest, using statistics indicated for independent samples, thus: a) difference of proportions: we applied the Pearson chi-square test if the expected values of the squares in the contingency tables were ≥ 5, otherwise we used the Yates continuity correction, b) logit regressions: in order to explore whether the variables of gender, age, educational level, length of residence in Spain and in Seville, last physician visit, and country of origin influenced self-medication, perceived health status and the use traditional remedies, and, c) cluster analysis: to explore if there were underlying natural groupings with similar characteristics within the study group.

RESULTS

The group profile of the 190 people studied, as described in Table 1, was as follows: mean age of 33.8 $\pm$ 6.3 years; 60% were women; by marital status, predominantly married (45.3%), single (36.8%) and those living with a partner without being married (8.9%); in terms of educational level: uneducated (3.7%), primary (15.3%), secondary (40.0%), higher education (16.8%), and university graduates were the remaining 24.2%. By country of origin, from high to low contribution within the sample were: Bolivia (32.6%), Peru (18.9%), Colombia (16.8%), Ecuador (11.1%), Paraguay (5, 2%), Chile (4.2%), Brazil (1.6%), Nicaragua (1.1%), and Argentina and Cuba (0.5% each). When analyzing the time of residence in Spain, it was found that the sample had a mean of 5.4 $\pm$ 3.6 years, slightly higher than the mean residence time in the city of Seville (4.6 $\pm$ 3.2 years). Regarding the past occupation, higher proportions were found of employees (53.7%), self-employed (13.3%), unemployed and students (11.6% each), and housewives (5.8%). In contrast, for the current occupation it was more frequently found that subjects were employees (59.3%), followed by self-employed (18.4%), unemployed (10.5%), student (6, 8%), and housewives (4.7%). We found a moderate correlation ($ro = 0.36$; $p < 0.01$) between previous and current occupations.

Table 1. General characteristics of 190 adult Latin American immigrants in the city of Seville in 2011

Variable	Valor
Gender; n (%)	
Female	114 (60.0)
Male	76 (40.0)
Age in years; mean (SD)	33.8 (6.3)
Age group; n (%)	
25 to 29	70 (36.8)
30 to 34	31 (16.4)
35 to 39	42 (22.1)
40 to 44	47 (24.8)
Marital status; n (%)	
Married	86 (45.3)
Single	70 (36.8)
Living in partnership without being married / cohabitating	17 (8.9)
Divorced	9 (4.7)
Separated	7 (3.7)
Widowed	1 (0.5)
Educational level; n (%)	
Uneducated	7 (3.7)
Primary	29 (15.3)
Secondary	76 (40.0)
Higher	32 (16.8)
University graduate	46 (24.2)
Country of origin; n (%)	
Argentina	1 (0.5)
Brazil	3 (1.6)
Bolivia	62 (32.6)
Chile	8 (4.2)
Colombia	32 (16.8)
Cuba	1 (0.5)
Ecuador	21(11.1)
Nicaragua	2 (1.1)
Paraguay	11 (5.2)
Peru	36 (18.9)
Uruguay	5 (2.6)
Venezuela	8 (4.2)
Time in years of residence in Spain; mean (SD)	5.4 (3.6)
Time in years of residence in Seville; mean (SD)	4.6 (3.2)
Former occupation; n (%)	
Employee	102 (53.7)
Self-employed	29 (13.3)
Unemployed	22 (11.6)
Student	22 (11.6)
Housewife	11 (5.8)
No answer	4 (2.1)
Current occupation; n (%)	
Employee	113 (59.5)
Self-employed	35 (18.4)
Unemployed	20 (10.5)
Student	13 (6.8)
Housewife	9 (4.7)

In the previous six months, 77.4% (95% CI = 70.9% -83.0%) of the sample (147 people) had self-medicated; of these, they had done so: sometimes, 46.2% (68 people), the majority of the time, 19.1% (28 people), and always, 34.7% (51 people).

The prevalence of self-medication by pharmaceutical group was higher with anti-inflammatories (58.8%) (95% CI = 51.8% -65.7%), analgesics (54.1%) (95% CI = 47.1% -61.1%) and antibiotics (21.6%) (95% CI = 16.3% -27.9). No significant statistical differences were found for self-medication with these pharmaceuticals as related to the variables of age, current occupation, perceived health status, or length of residence in Seville or in Spain; the only statistical difference observed was in the use of antibiotics by gender, with 10.9% of men and 27.9% of women self-medicating with this group of pharmaceuticals (X^2 (1, N = 148) = 5.92, p = 0.015).

The use of traditional remedies is another variable that is related to the consumption of pharmaceuticals; 47.3% (95% CI = 39.7% – 54.6%) of the sample (86 people), often used traditional remedies (infusions, plasters, etc.) for illness before going to the physician. A trend was observed between the use of traditional remedies and the frequency at which the person self-medicated (never = 60.0%, sometimes= 57.1%, most of the time = 50.0%, and always = 26.1%), with a X^2 of 12.28 (p <0.001).

Table 2 shows the results of estimated logit models. According to the F- test of goodness of fit employed, which accounted for the stratification design for the sample, there was no evidence of a poor fit to the data model. The results indicated that, after performing the corresponding logistic regression, a statistically significant association existed between the self-medication variables in the past six months and residence in Seville, age, educational level, visit to the physician, days when health status was not good, and consumption of traditional remedies. Within this group of significant relationships, we can say that the risk of self-medication increased as age increased, when more years had passed since the last visit to the physician, or the number of years residing in Seville. In contrast, the risk of this practice decreased with a lower number of days that health status was not as good, and if traditional remedies were not used.

The cluster analysis identified two profiles corresponding to people who self-medicated (n = 118) and those that did not (n = 32); it was observed in the conglomerate of people who performed these practices that they were women of 35 to 39 years of age, living with a partner without being married, having higher education, who were employed persons, living approximately 12 years in Spain and two years less in Seville, had visited their physician in the last year, had

Table 2. Estimation of the parameters of the logistic regression for the dependent variable *self-medication* in the last six months.

	Estimation	Standard error	Z	p-value	Odds	95% CI Odds
Gender (M, F)	-0.458	0.202	-0.568	0.570	0.34	(0.07 – 1.21)
Age	0.041	0.015	2.732	0.006	1.39	(1.15 – 1.92)
Educational level	-0.442	0.091	-4.836	<0.001	0.35	(0.21 – 0.58)
Residence in Spain (months)	-0.011	0.006	-1.938	0.053	1.64	(0.00 – 1.96)
Residence in Seville (months)	0.018	0.007	2.684	0.007	1.74	(1.51 – 2.30)
Visit to the physician (years)	0.285	0.087	3.272	0.001	0.55	(0.34 – 0.94)
Days in which the perceived state of health was not good	0.825	0.218	-3.789	<0.001	0.08	(0.10 – 0.40)
Employed traditional remedies (Y, N)	-0.397	0.109	-3.631	<0.001	0.40	(0.21 – 0.74)

[a] LOG(p/(1-p))

been in good health, and did not use home remedies. Regarding the characteristics of those who had not engaged in this type of practice, we can say that they were women, married, aged 30 to 34 years, having lived three to four years in Spain and one year less in Seville, had been to the physician in the last two years, had a state of health between good and very good, and they were self-employed.

DISCUSSION

This study described the adult Latin American population in Seville. Like previous studies on pharmaceutical consumption in Spain, [10,19, 20,25] our analysis included sociocultural variables, such as age, gender, educational level, length of residence, country of origin, and current occupation, as well as incorporating a set of adjustment variables, such as the visit to the physician, the consumption of traditional remedies, or the self-perceived health status.

The regression model results indicated significant associations within the immigrant community, particularly relating to age, educational level and residence time in Seville. Thus, individuals who had spent more time in this city had a higher probability of self-medicating, as well as those who consumed traditional remedies, results similar to those found in a 2009 study [26], which stated that healthy immigrants arrive to Spain and, subsequently, become ill.

The consumption of pharmaceuticals without prescription by the Latin American population in this study had a number of particularities, highlighting a high prevalence (77%), much higher than that found in foreigners in Spain in 2006 (20%) [25] in which the pharmaceutical groups most used were analgesics (58%) and anti-inflammatories (54%). Data resembled two investigations, where 56% [27] and 59%, [28] respectively, of the immigrant population responded that they had self-medicated in the two weeks immediately preceding the survey, taking analgesics in the same proportion in those two studies as were obtained in our work.

It is recognized that pain generally is one of the most common reasons for self-medication, because people use the strategy of obtaining medication that will provide relief when they do not want to go to the physician, or when it was not possible that this professional would give attention to their problem [29].

It is striking that one in four respondents reported self-medication with antibiotics, a figure that is slightly less than that estimated in Latinos in the U.S. state of California, (26%) [30], and that seems to relate to the economic and socio-cultural barriers and the mistaken belief that antibiotics help to treat viral infections. This practice, as well, is related to the increasing resistance of microorganisms to antibiotics [31]. Another study [32] found that the principle motives favoring self-medication were a higher educational level and age; it was noted, among other characteristics, that the subjects were professionals between 35-39 years, an age group which also coincides with a study [25] in a native Spanish population. In our study we found no difference between the proportions of self-medication by gender, a situation that has been described by another author [21].

In those surveyed, it was revealing that the percentage of people reporting self-medication was greater than of those employing traditional remedies. The explanation may be, as another investigation noted [33], that the immigrants used nonprescription pharmaceuticals to treat illnesses or health problems mainly due to ignorance of the health system and its use.

With respect to self-perceived health status, we found that for people who self-medicate, it was between good

and very good, whereas it was regular for those taking traditional remedies. These results are consistent with research conducted in the United States [30] and Europe [25,34] that has shown a paradoxical advantage in health status among immigrants compared to natives, despite the social and economic difficulties.

The issues outlined in the results and discussion of our study also point to the necessity that the theme of self-medication should be present in the education of future nursing professionals, who must have sound knowledge about fundamental aspects for the practice of care for another, not only regarding adverse events, medication interactions, or importance of adherence to the therapeutic regimen, among others; but also skills in the preparation and implementation of educational nursing programs on responsible self-medication[3].

CONCLUSION:

The consumption of nonprescription pharmaceuticals of the Latin American immigrants in the city of Seville was high.

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