Use of Primary Care Resources by Immigrants and the Autochthonous Persons Who Contact the Care Services in the City of Lleida, Spain

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Objective. To evaluate and compare the use of the different primary care (PC) services between immigrants and the indigenous population.

Design. Cross-sectional observation study of a population seen in (PC).

Setting. Patients seen by 15 PC doctors, in 5 basic health areas (BHA) in the city of Lleida, Spain, from March to August 2005.

Participants. All immigrants (1,599 patients of immigrant origin) who were seen during the study period were included. A random sample of 300 patients was taken from each of the 15 participating clinics (4156 autochthonous patients). The autochthonous was considered as those whose country of origin is Spain and the immigrant population those who come from low and medium income countries, regardless of the time of residence in the BHA.

Primary measurements. Age, sex, type of visit made, and referrals made. Multinomial regression models were used to calculate the relative risk (RR) of having made visits.

Results. Immigrants have a higher probability to make 3 visits than the indigenous population, who would make 1 or 2 visits (RR, 1.23; 95% confidence interval, 1.04-1.91). The estimation of the RR of having made visits is higher in the immigrants for all categories, except nursing. Nevertheless, the frequency of use of the immigrant group for nursing visits seems to be less.

Key words: Immigrants. Primary care. Frequent use.

UTILIZACIÓN DE RECURSOS DE ATENCIÓN PRIMARIA POR PARTE DE INMIGRANTES Y AUTÓCTONOS QUE HAN CONTACTADO CON LOS SERVICIOS ASISTENCIALES DE LA CIUDAD DE LLEIDA

Objeto. Evaluar y comparar la utilización de recursos en los distintos servicios de atención primaria (AP) entre inmigrantes y autoctonos.

Diseño. Estudio observacional transversal en población visitada en AP.

Emplazamiento. Personas atendidas por 15 médicos de AP en 5 áreas básicas de salud (ABS) de la ciudad de Lleida de marzo a agosto de 2005.

Participantes. Se incluyó a todos los inmigrantes atendidos durante el periodo de estudio (1.599 pacientes de origen inmigrante). Se realizó un muestreo aleatorio de 300 pacientes en cada una de las 15 consultas participantes (4.156 pacientes de origen autónomo). Se consideró población autóctona aquella cuyo país de origen es España y población inmigrante aquella que proviene de los países de renta baja y media, independientemente del tiempo de asistencia al ABS.

Mediciones principales. Edad, sexo, tipo de visitas realizadas y las derivaciones efectuadas. Se utilizaron modelos de regresión multinomial para estimar el riesgo relativo (RR) de haber realizado las visitas.

Resultados. Los inmigrantes tienen una probabilidad superior a los autóctonos de realizar más de 3 visitas, frente a 1 o 2 visitas (RR = 1.23; intervalo de confianza [IC] del 95%, 1.04-1.91). La estimación del RR de haber realizado visitas es superior en los inmigrantes para todas las categorías, excepto en enfermería (RR = 0.59, IC del 95%, 0.5-0.71).

Conclusiones. Los inmigrantes que contactan con AP lo hacen con mayor frecuencia en las consultas de medicina de familia y de ginecología, y además se realizan más pruebas complementarias. Sin embargo, la frecuentación del colectivo inmigrante a las consultas de enfermería parece ser inferior.

Palabras clave: Inmigrantes. Atención primaria. Frequentación.
Introduction

The rate of growth of the immigrant population in Spain has been relentless over the last few years. Once the immigrants are settled in Spain and they require medical care, one of the first places that they look for help is health centres and emergency services, as they are the first points of access to the health system. It has been reported that there can be barriers to accessing certain parts of the health system, mainly due to ignorance of the language and socio-cultural differences.

As this immigration phenomenon in Spain is very recent, there is still a lack of published medical literature evaluating these aspects in this group. To find out their behaviour as public health users seems necessary and is justified in order to design and establish policies in order to adapt to the present and future needs of the health system.

The objective of this article is to evaluate and compare the use of resources in the different primary care (PC) services between immigrants and the autochthonous population who come into contact with PC services.

Methods

Study Type
A cross-sectional observational study carried out on a population seen in PC.

Study Population
The study population consists of patients seen by 15 PC doctors in 5 basic health areas (BHA) of the Catalonia Health Institute in the city of Lleida, and located in districts with a higher percentage of immigrant population according to the 2004 Municipal Inhabitants Register. The study was carried out over 6 months (March to August 2005).

Participants
All those patients coded as immigrants were extracted from all the patients who arrived at the 15 clinics during the 6 month period of the study. To ensure that all the immigrants who visited the 15 participating doctors were included, a list of patients seen during the study period was checked and the immigrants who did not have details of their country of origin were coded. In this way, a total of 1599 patients of immigrant origin was obtained, which was the total number of immigrant patients seen during the study period.

To determine the sample size, the number of patients in the city of Lleida that could be included and came from each of the most representative areas (Latin America, Eastern Europe, Maghreb, and Sub-Saharan Africa) was calculated. For estimating the proportions with a precision of 5%, assuming the worst case (proportions around 0.5), 385 patients per area of origin would be needed. This is equivalent to an immigrant sample of approximately 1600. As regards the autochthonous patients, the 4156 included in the study ensured a high precision in the estimation of proportions and means in this global group, analysed by age and sex differences between the immigrant and autochthonous population those from low and medium income countries, regardless of the time of residence in the BHA.

Ethical Aspects
Confidentiality and anonymity of the participating subjects has been maintained at all times.

Analytical Variables
The variables analysed were, age, sex, type of visit made, and referrals made. The autochthonous population was considered as those whose country of origin was Spain and the immigrant population those from low and medium income countries, regardless of the time of residence in the BHA.

General Scheme of the Study
Observation, cross-sectional study of patients seen by 15 PC doctors, in 5 basic health areas in the city of Lleida from March to August 2005.
tion was available. Obtaining information was not an additional cost. Likewise, the number of subjects studied enabled multivariate models to be used to be able to adjust the comparison of variables for age and sex, according to the group origin.

Statistical Analysis

The frequency of use of the different PC services during the 6 months is described according to age, sex, autochthonous group, immigrant group, and area of origin, using the mean, median, and standard deviation. The number of visits by specialty is grouped into categories which varied according to the frequency of visits in that specialty. Later, the percentage of patients in each of the categories was obtained (e.g., no visits, 1 visit, from 2 to 4 visits, and 5 or more visits).

To analyze the association between frequency of use and the group or area of origin (immigrant/autochthonous), multinomial logistic regression models were used, which estimated the relative risk (RR) and its confidence interval (CI), adjusting for age and sex. To evaluate the statistical significance of coefficients of the models, a likelihood ratio test was used. The Hosmer-Lemeshow C statistic has been used to compare the expected and observed indels, a likelihood ratio test was used. The Hosmer-Lemeshow C statistic >.05).

To analyse the association between frequency of use and the group or area of immigrant origin, multinomial regression models were used, including all the patients studied and adjusting for age (Table 3). In the results of the adjusted model it was seen, with significant statistical differences, that the total visits made are classified into the different existing specialties, and are group into frequency of use categories as shown in Table 2 (no visits, 1, from 2 to 4, and finally more than 5 visits).

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Women made up 51% of the immigrant group, and 54% in the autochthonous group. The distribution by age and by country is set out in Table 1. The mean age of the immigrant group was 30 years compared to 45 years in the autochthonous group. In the 1599 immigrant patients studied, the mean number of visits in the 6 month period was 5.1 for males and 7.4 for females, with a visits median of 4 and 6, respectively. In the autochthonous group, the frequency was 7.2 visits for males and 8.4 for females, with a visit median of 5 and 6, respectively.

The total visits made are classified into the different existing specialties, and are group into frequency of use categories as shown in Table 2 (no visits, 1, from 2 to 4, and finally more than 5 visits).

Table 1: Distribution of the Immigrant and Autochthonous Population

<table>
<thead>
<tr>
<th>Variables</th>
<th>Total (n=5790)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>2960 (51.19%)</td>
</tr>
<tr>
<td>Female</td>
<td>2830 (48.81%)</td>
</tr>
<tr>
<td>Age groups</td>
<td></td>
</tr>
<tr>
<td>0-4</td>
<td>716 (16.84%)</td>
</tr>
<tr>
<td>5-14</td>
<td>1260 (27.05%)</td>
</tr>
<tr>
<td>15-44</td>
<td>1023 (42.65%)</td>
</tr>
<tr>
<td>45-64</td>
<td>24 (0.5)</td>
</tr>
<tr>
<td>Areas of origin</td>
<td></td>
</tr>
<tr>
<td>Europe</td>
<td>2775 (55.89%)</td>
</tr>
<tr>
<td>Latin America</td>
<td>1431 (29.44%)</td>
</tr>
<tr>
<td>Asia</td>
<td>52 (0.96)</td>
</tr>
<tr>
<td>C.I.</td>
<td>0.92 to 1.06</td>
</tr>
</tbody>
</table>

Table 2: Analysis of the Number of Visits Made by the Immigrant and Autochthonous Population in Different Primary Care Specialties in a 6 Month Period

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Immigrants</th>
<th>Autochthonous</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>General medicine</td>
<td>10 (0.17%)</td>
<td>20 (0.47%)</td>
<td>30 (0.53%)</td>
</tr>
<tr>
<td>One visit</td>
<td>45 (8.05%)</td>
<td>90 (19.45%)</td>
<td>135 (23.54%)</td>
</tr>
<tr>
<td>Two to 4 visits</td>
<td>65 (11.44%)</td>
<td>120 (26.02%)</td>
<td>185 (32.46%)</td>
</tr>
<tr>
<td>Five visits or more</td>
<td>40 (7.07%)</td>
<td>70 (15.32%)</td>
<td>110 (19.39%)</td>
</tr>
<tr>
<td>Pediatrics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No visits</td>
<td>35 (6.23%)</td>
<td>70 (15.32%)</td>
<td>105 (18.16%)</td>
</tr>
<tr>
<td>One visit</td>
<td>15 (2.63%)</td>
<td>30 (6.67%)</td>
<td>45 (7.84%)</td>
</tr>
<tr>
<td>Two to 4 visits</td>
<td>50 (8.74%)</td>
<td>100 (22.16%)</td>
<td>150 (25.94%)</td>
</tr>
<tr>
<td>Five visits or more</td>
<td>50 (8.74%)</td>
<td>100 (22.16%)</td>
<td>150 (25.94%)</td>
</tr>
<tr>
<td>Complementary tests</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No visits</td>
<td>40 (7.07%)</td>
<td>80 (17.53%)</td>
<td>120 (21.04%)</td>
</tr>
<tr>
<td>One visit</td>
<td>15 (2.63%)</td>
<td>30 (6.67%)</td>
<td>45 (7.84%)</td>
</tr>
<tr>
<td>Two to 4 visits</td>
<td>50 (8.74%)</td>
<td>100 (22.16%)</td>
<td>150 (25.94%)</td>
</tr>
<tr>
<td>Five visits or more</td>
<td>50 (8.74%)</td>
<td>100 (22.16%)</td>
<td>150 (25.94%)</td>
</tr>
<tr>
<td>Women care</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No visits</td>
<td>10 (1.74%)</td>
<td>20 (4.39%)</td>
<td>30 (5.18%)</td>
</tr>
<tr>
<td>One visit</td>
<td>15 (2.63%)</td>
<td>30 (6.67%)</td>
<td>45 (7.84%)</td>
</tr>
<tr>
<td>Two to 4 visits</td>
<td>50 (8.74%)</td>
<td>100 (22.16%)</td>
<td>150 (25.94%)</td>
</tr>
<tr>
<td>Five visits or more</td>
<td>50 (8.74%)</td>
<td>100 (22.16%)</td>
<td>150 (25.94%)</td>
</tr>
<tr>
<td>Continues care</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No visits</td>
<td>15 (2.63%)</td>
<td>30 (6.67%)</td>
<td>45 (7.84%)</td>
</tr>
<tr>
<td>One visit</td>
<td>15 (2.63%)</td>
<td>30 (6.67%)</td>
<td>45 (7.84%)</td>
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<td>Two to 4 visits</td>
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<td>150 (25.94%)</td>
</tr>
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<td>Five visits or more</td>
<td>50 (8.74%)</td>
<td>100 (22.16%)</td>
<td>150 (25.94%)</td>
</tr>
</tbody>
</table>

*SD indicates standard deviation.
that among the population who had gone at least once to a PC clinic, the immigrants had a relatively higher probability than the autochthonous population to make from 3 to 11 visits, against 1 or 2 visits. It is also observed that women have a higher probability of visiting compared to men in all the visit categories.

By using a multinomial regression model to estimate the RR of having made a visit for each existing category (Figure), we found that the RR was higher in the immigrants for all categories, except in nursing. For example, for the general medicine category, the probability of having been seen is approximately seven times higher in the immigrant than in the autochthonous population. These differences found are maintained by country of origin of the immigrant (Table 4).

### Table 3

<table>
<thead>
<tr>
<th>Number of visits</th>
<th>Sex</th>
<th>SE</th>
<th>p</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>From 3 to 5 visits</td>
<td>Immigrants versus autochthonous</td>
<td>1.23</td>
<td>0.10</td>
<td>.013</td>
</tr>
<tr>
<td></td>
<td>Males versus females</td>
<td>0.78</td>
<td>0.06</td>
<td>.001</td>
</tr>
<tr>
<td>From 6 to 11 visits</td>
<td>Immigrants versus autochthonous</td>
<td>1.25</td>
<td>0.11</td>
<td>.010</td>
</tr>
<tr>
<td></td>
<td>Males versus females</td>
<td>0.59</td>
<td>0.05</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Twelve visits or more</td>
<td>Immigrants versus autochthonous</td>
<td>1.17</td>
<td>0.13</td>
<td>.153</td>
</tr>
<tr>
<td></td>
<td>Males versus females</td>
<td>0.46</td>
<td>0.04</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

*SE indicates standard error; CI, confidence interval.

*The relative risk (RR) refers to the comparison of the aforementioned categories when having made 1 or 2 visits and is adjusted for age.

### Discussion

The results of this study show that in individuals who have been in contact with PC services at least once, the RR adjusted by having visited family medicine is much higher in the immigrant group compared with the autochthonous population, except the frequency of being seen by nursing professionals, where the risk was found to be less. It could be that immigrants need to see the family doctor more to solve problems of equal complexity to those that the autochthonous problem has and that, however, they may see nurses less do to them being a group that uses acute services more. As the increase in the use of services is restricted to whoever uses them, the discrepancy in the visits average (probably due to the higher number of immigrants with no visits) suggests that when they do go to the health services they do so due to having a more complicated, or more difficult to resolve clinical picture, as supported by the higher number of complementary tests requested for the immigrants. The possible ignorance or lack of information

#### Figure 1

Relative risks (RR) of having made a determined number of visits in a 6 month period by the immigrant and autochthonous population who have been seen at least once in PC (both sexes).

Dependent variable: not having made any visits. The RR compares immigrants against autochthonous population. CC indicates continuous care; CT, complementary tests.
that foreigners may have as regards nursing functions, also
cannot be ruled out.

As regards gynaecology, it was found that the RR of being
grpants when visiting clinics.

The relative risk (RR) refers to the comparison of the aforementioned categories when having made 1 or 2 visits and is
adjusted for age.

The difficulty in arranging the
documentation to legalise their
residency or health cards are sig-
nificant bureaucratic barriers.

These difficulties are similar to
those that occasionally occur in
Spain. On comparing the fre-
quency of use data obtained in
our study with those of other
studies carried out in other
countries, it is evident that our univer-
sal health system makes it easier
to have greater health cover.

It is also known that the increase
in the demand for emergency
services is due to social changes,
the "medicalisation" of daily life
and the tendency of the user to-
wards rapid services.16,17

The greater use of emergency
services, particularly by groups
from the lower socio-economic
strata, could be explained by a
lower level of health and also due
to inadequate use of the service;

that foreigners may have as regards nursing functions, also
cannot be ruled out.

It is well known that the general autochthonous popula-
tion use PC services with a certain regularity,9 and simi-
larly it is established that the immigrant group are doing
this.10

Therefore, in a community based study in Madrid, carried
out over 2 months in 1997,11 of the 300 immigrants inter-
viewed, 84% stated that they had used some health service
in Spain, and 65% of them, PC services.

It has not been done to compare the frequency of use of
our participants with those published in other works, be-
cause a general population sample has not been used in the
design. In population design studies it seems that the im-
migrants use services less than the autochthonous popula-
tion,12 and that there is a predominance of female immi-
grants when visiting clinics.13

As regards gynaecology, it was found that the RR of being
seen in a clinic was higher for the immigrant group, a fact
that may be explained by its higher birth rate.15 These
differences were also found according to the area of origin
and, statistically significant in the Latin American, Maghreb, and Sub-Saharan group. Studies have been car-
ried out that demonstrate that the need for materni-
ty-neonatal care is increasing in this population group (Report
Immigrant Health).14

In a study carried out in Canada,15 a country which has a
health system similar to ours, in that it is universal, they re-
port problems as regards adequate accessibility by immi-
grants to the public health system.
Due to the immigration being a recent phenomenon in Spain, there is still very little published in the medical literature on the behaviour pattern of immigrants as regards health services. When medical assistance is needed, one of the first places the immigrants look for help is in health centres and emergency departments. The relative risk of being seen in general medicine is 7 times higher than the autochthonous population, but they do not use nursing services as much. More complementary tests are carried out on immigrants and the frequency of use of the different specialties and gynaecology services is higher.

What Is Known About the Subject
- Immigrants coming from low income countries are mainly young people who are generally in good health.
- Due to the immigration being a recent phenomenon in Spain, there is still very little published in the medical literature on the behaviour pattern of immigrants as regards health services.
- When medical assistance is needed, one of the first places the immigrants look for help is in health centres and emergency departments.

What This Study Contributes
- Immigrants have a different pattern of use from the autochthonous population.
- The relative risk of being seen in general medicine is 7 times higher than the autochthonous population, but they do not use nursing services as much.
- More complementary tests are carried out on immigrants and the frequency of use of the different specialties and gynaecology services is higher.

not explain the major part of this variability in frequency of use. We do not know the psychosocial variables of the patients studied, thus we are unable to compare the results obtained by other authors. As a line in future investigations, we consider, that given the large amount of foreigners who come into contact with the public health system, the role of PC in how to handle the health of immigrants needs to be made clear. PC as an entrance gate for the whole population has to become the central ladder of the health system, and for this reason organizational strategies must be developed that can guarantee that health care is given, avoiding or minimising the barriers to accessibility and, therefore, under the same conditions as those of the autochthonous population.

As regards the results that we have found (Table 4), it is possible that there are also differences in the frequency of use between the different immigrant groups, particularly by Latin Americans and those from Maghreb. Therefore it appears that language is not the main barrier, since the Latin American population, for whom these barriers are non-existent or are reduced to slight variations in use, are more frequent users to a larger extent than the rest of the immigrant groups. Spain, as a receiver of a high percentage of immigration coming from low income countries with a common language, provides a unique opportunity to evaluate the effect of language barriers in the frequency of use of the health services. Given the significant differences in the frequency of use of nursing professional services, we believe that studies should be performed in specific settings, which would enable us to find out the reasons for this lower number of consultations observed compared to that of other professionals. In conclusion, immigrants who go to PC are seen more in family medicine and gynaecology, and have a higher number of complementary tests than the autochthonous population. However, the frequency of use of nursing visits is lower than that recorded for the autochthonous population. Therefore, we suggest that the importance of immigration in the Spanish health system has to be taken into account when planning agendas and distribution of resources in primary care.

Acknowledgements
To the colleagues of the PC centres who have taken part by seeing and recording the patients included in this study.

References


