ABSTRACT
European integration has facilitated the emigration inside Europe and it has been predicted that the amount of immigrants in Southern European countries will increase in the future. As these people age and their morbidity increases, they will demand more services from local health care than immigrants do at the moment.

The aim of this study is to determine the amount of Finnish people who have moved to Spain for health reasons (health immigrants) and whether their health service and analgesic usage patterns differed from those of non-health immigrants.

Methods: This study was carried out among Finnish people living in Costa del Sol area, southern Spain. The data were collected by questionnaire during 2002 by using a convenience sample of 1,000 Finns living permanently in the area (response rate 53%, n=530). Statistical analyses were conducted using statistical software SPSS 11.5.

Results: Two-thirds of the respondents were categorised as health immigrants. Health immigrants were more often suffering from chronic morbidity, their perceived health status was poorer and they used public health services more often than the non-health immigrants. Half (50%) of the all respondents had used some analgesics during the two weeks before the survey. There were more analgesic users among the health immigrant group (54 % vs. 43 %, p = 0.034) and they also used analgesics more frequently than the non-health immigrants (27 % vs. 9 %, p= 0.020).

Conclusions: Our study indicates, that high amount of Finnish immigrants suffer from some degree of health problems and the health state factors have a large influence on the emigration into Spain. As this kind of trend might also exist among immigrants from other EU-nations, immigrants might burden the local Spanish health care services in the future. Therefore the Providers of health care services in immigrant areas should consider these trends in planning health care in the future.

Keywords: Emigration and Immigration. Health Services Needs and Demand. Analgesics. Finland. Spain.
INTRODUCTION

European integration has facilitated the emigration inside Europe. This might be one factor explaining the increasing number of immigrants in the southern European countries, where the climate is mild and prices moderate. In Costa del Sol region in Southern Spain, there are thousands of foreign nationals from different countries such as Great Britain, Ireland Germany, Belgium, France, Russia, Sweden, Norway and Denmark. The exact amount of these immigrants is unknown due to the fact that many of these long-term residents have not filled in the official residence application. It is typical that these immigrants would spend part of the year in Spain and part in their native country.

It has been predicted that the number of immigrants in Spain will increase when the large generations born after World War II retire. It has been estimated that over 15,000 Finnish people are already living permanently in the Costa del Sol region. Even though mobile patients have been high on health policy agenda in European Union, there are no previous studies on this subject. Immigration within European Union differs from typical immigration; European immigrants are often retired foreigners from wealthier EU-countries. As these people age and their morbidity increases, they will demand more services from local Spanish health care than immigrants do at the moment.

The large number of foreign nationals has already motivated the provision of multilingual services in Spanish hospitals and private clinics, but similar services are not found in pharmacies. Still, in Spain it is a common practise to search for a self-care alternative from pharmacy before visiting the doctor and it is not even unusual to obtain prescription medicines without a prescription. As medicines are easily available and accessed in Spain’s 19,222 pharmacies, it would be valuable to know the medication usage habits of the immigrants so that pharmacy services in the immigrant areas could be developed to meet the immigrants’ needs.

Pain is the most commonly experienced symptom among adults and also one of the most important reasons for physician visits worldwide. Pain is commonly managed whether with prescription (Rx) or non-prescription (OTC) analgesics. Previous studies indicate that analgesic use varies from 7% to 76% in different countries. Methods, populations, time frames, age, gender, socio-economic status and health state factors such as pain symptoms and self-reported state of health also vary in different studies. Little is still known whether health immigration influences patterns of analgesic, or other medication, use. It is predicted that some immigrants move to Spain for health reasons, but by studying the amount of these health immigrants and the patterns of their analgesic use we gather valuable information for use in planning the health care services.

The aim of this study was to gather information about immigration within European Union; determine the amount of Finnish people who have moved to Spain for health reasons (health immigrants) and whether their health care and analgesic usage patterns differed from those of non-health immigrants. According to our knowledge, similar studies have not been done before, neither among Finnish nor other ethnic minorities living in Costa del Sol area.

METHODS

This study was a part of a larger health and drug use study carried out among Finnish people living in Costa del Sol area, southern Spain (Figure 1). Data was collected in spring 2002 using a questionnaire that was distributed in two ways: half (500) of the questionnaires were dispensed with Finnish newspapers by mail and half through Finnish associations and outlets working in the region (Figure 1). These associations (e.g. churches, cafes, restaurants, societies) were instructed to deliver the questionnaires to people using their services. Participants were required to be Finnish adults living permanently in Spain. It is possible that some people received more than one questionnaire, though it is unlikely that the same person would have completed more than one questionnaire. The questionnaire was tested before the actual study on ten Finnish people living in Spain. This was done to enhance reliability by ascertaining that the questionnaire was unambiguous and simple to complete as well as being suitable for collecting the information needed. A total of 533 questionnaires out of 1,000 disseminated (53 %) were returned anonymously. Three were excluded because they were incomplete. Approximately, 3-4 percent of the Finnish population living in Spain participated in the study.

We categorised the respondents into health immigrants and non-health immigrants (Table 1). Those Finnish people who indicated health factors to play serious or moderate role in the emigration process were categorised as health immigrants. If health state factors did not affect the emigration, the person was categorised into the group of non-health immigrants.

A majority (55 %) of the respondents were female. The age of the respondents varied from 21 to 99 years (mean age 65 years). Health immigrants tended to be slightly older than the other respondents (p<0.001). The respondents had lived in Spain 1-49 years (mean time 8 years). Most of them were retirees and married.

The respondents were categorised into analgesics users and non-users. Those who indicated use of analgesics in the previous two weeks were defined as users and were asked specific questions about their analgesic use. Non-users were instructed to continue with questions from other fields. The purpose of this categorisation was to minimise the incidence of recall bias in questions about analgesic use.
Information about use of different prescription (Rx) and non-prescription (OTC) analgesics was gathered with a structured question: “Which of the following analgesics have you used during the previous two weeks? After the ingredient names, some most common brand names were given to facilitate answering.

Factors associated with analgesic use were examined by asking questions regarding demographic and socio-economic factors: sex, age, marital status, education, work status, and the length of the respondent have lived in Spain. In the analysis the work status pensioners and part time pensioners were grouped together. Language skills as well as the use of the public health services were also assessed.

Three types of questions were asked to determine health status of respondents: by questions about health status, chronic morbidity, and the symptoms during the previous two weeks. Respondents were asked to categorise their health status as good, moderate or poor. They were also asked whether they had suffered from chronic morbidity and to list the symptoms they had suffered in previous two weeks.

In this paper we define analgesics as anti-inflammatory drugs (NSAID) and analgesics. In ATC-classifications NSAIDs correspond to ATC groups M01A and analgesics to group N02.14

Statistical analyses were conducted using statistical software SPSS 11.5 (Statistical package for Social Sciences). Cross tabulation was used to compare different groups. Statistical comparison was done by using chi-square testing, p-value<0.05 was considered significant.

RESULTS

Health immigration and analgesics use

Of the respondents, 70 % (n=365) were categorised as health immigrants (Table 1). Health immigrants were more often suffering from chronic morbidity (82% vs. 39%) and they perceived their health status to be worse than the non-health immigrants. Health immigrants also used more public health services and they got more often reimbursement from their medicines than the non-health immigrants (Table 1).

Half of the respondents (50 %, n=263) reported analgesics use during the two weeks before the query. Health immigrants were more often analgesic users and they used more commonly prescription analgesics (diclofenac, naproxen, tramadol and nimesulid) than the other respondents (Table 2). Health immigrants used analgesics more regularly than the others, daily use occurring among 27 % (n=49) of the health immigrants and 9% (n=6) of the others (Table 2). The concomitant use of prescription and non-prescription analgesics was also more common among health immigrants than the non-health immigrants (p< 0.001). Altogether, the concomitant use of prescription and non-prescription analgesics occurred among one quarter of analgesics users.

When considering analgesics purchasing habits, differences between groups were not found. Almost 30 % (n=70) of analgesic users bought their analgesics from Spain and 20 % (n=47) from Finland. It was still most common to buy analgesics in both countries (Table 2).
Table 1. Characteristics of the respondents

|                          | Health Immigrants | Non-health Immigrants | P-value between groups |
|--------------------------|-------------------|-----------------------|------------------------|
|                          | %     | n   | %     | n   |          |
| Gender                   |       |     |       |     |          |
| Male                     | 70    | 365 | 30    | 157 | 0.055    |
| Female                   | 52    | 187 | 61    | 96  |          |
| Age                      |       |     |       |     |          |
| Less than 45             | 1     | 2   | 7     | 11  | <0.001   |
| 45-54                    | 7     | 26  | 11    | 16  |          |
| 55-64                    | 37    | 133 | 31    | 47  |          |
| 65-74                    | 41    | 147 | 46    | 69  |          |
| 75 or more               | 14    | 48  | 5     | 8   |          |
| Working situation        |       |     |       |     |          |
| Working                 | 3     | 9   | 19    | 29  | <0.001   |
| Retired                 | 91    | 332 | 73    | 113 |          |
| Other                   | 6     | 22  | 8     | 12  |          |
| Chronic morbidity        |       |     |       |     |          |
| Yes                     | 82    | 290 | 39    | 59  | <0.001   |
| No                      | 18    | 62  | 61    | 93  |          |
| Perceived state of health|       |     |       |     |          |
| Good                    | 33    | 120 | 63    | 99  | <0.001   |
| Moderate                | 60    | 217 | 34    | 54  |          |
| Poor                    | 7     | 26  | 3     | 4   |          |
| Pain symptoms            |       |     |       |     |          |
| Backache                | 25    | 92  | 17    | 27  | 0.053    |
| Headache                | 18    | 67  | 14    | 22  | 0.255    |
| Joint ache               | 35    | 126 | 14    | 22  | <0.001   |
| Years of staying in Spain|       |     |       |     |          |
| 1-3                     | 26    | 92  | 30    | 44  | 0.777    |
| 4-6                     | 26    | 91  | 24    | 35  |          |
| 7-9                     | 14    | 50  | 11    | 16  |          |
| 10-14                   | 23    | 81  | 25    | 36  |          |
| 15 or more              | 11    | 37  | 10    | 14  |          |
| Use of public health services in Spain |      |     |       |     |          |
| Regular                 | 41    | 148 | 22    | 33  | <0.001   |
| Occasional              | 34    | 123 | 31    | 48  |          |
| No use                  | 25    | 92  | 47    | 71  |          |
| Reimbursement from analgesics |     |     |       |     |          |
| No                      | 46    | 89  | 72    | 46  | <0.001   |
| Yes                     | 54    | 105 | 28    | 18  |          |

Table 2. Analgesic use

|                          | Health Immigrants | Non-health Immigrants | P-value between groups |
|--------------------------|-------------------|-----------------------|------------------------|
|                          | %     | n   | %     | n   |          |
| Analgesic use            |       |     |       |     |          |
|                         | 54    | 196 | 43    | 67  | 0.034    |
| Type of analgesics       |       |     |       |     |          |
| Non-prescription (OTC)   | 30    | 57  | 62    | 41  | <0.001   |
| Prescription (Rx)        | 43    | 80  | 24    | 16  |          |
| OTC+Rx                   | 27    | 50  | 14    | 9   |          |
| Source of purchase       |       |     |       |     |          |
| Spain                    | 26    | 50  | 30    | 20  | 0.715    |
| Finland                  | 18    | 34  | 19    | 13  |          |
| Both                     | 56    | 109 | 51    | 34  |          |
| Frequency of use         |       |     |       |     |          |
| Daily                    | 27    | 49  | 9     | 6   | 0.020    |
| Weekly                   | 21    | 39  | 20    | 13  |          |
| Occasional               | 52    | 94  | 71    | 46  |          |

Factors related to analgesic use

Table 3 illustrates the proportions of analgesic users according to the background variables. Men used prescription analgesics more frequently and regularly than women. Differences were also found between different age groups (p < 0.05) in chi-square testing. Among health immigrants, analgesic use decreased with age. Similar decreasing trend could not be found among the non-health immigrants, even though differences between age groups were measured.

The clear association between the occurrence of different pain symptoms and the amount of analgesic use were found. In the health immigrant
group those who suffered from different aches: headache, joint ache or backache were analgesic users more often than the asymptomatic respondents. Backache was not an explanatory factor in the group of non-health immigrants. Self reported health status was not significantly associated with analgesic use, nor was chronic morbidity and the use of public health services. In the health immigrant groups, differences in the amount of analgesic use were associated with the living time in Spain: those who had lived in Spain 7-9 years were clearly more commonly analgesic users than the non-health immigrants.

| Table 3. Factors related to the analgesics use among health immigrants and non-health immigrants (% of those using analgesics). |
|--------------------------------------------------|------------------|------------------|
|                      | Health immigrants | Non-health immigrants |
| Gender               |                  |                  |
| Male                 | 45               | 30               |
| Female               | 59               | 48               |
| Age                  |                  |                  |
| 45-54                | 65               | 63               |
| 55-64                | 59               | 50               |
| 65-74                | 46               | 28               |
| 75 or more           | 44               | 50               |
| Working status       |                  |                  |
| Working              | 67               | 57               |
| Retired              | 51               | 34               |
| Other                | 64               | 75               |
| Chronic morbidity    |                  |                  |
| Yes                  | 52               | 43               |
| No                   | 48               | 40               |
| Perceived state of health |          |                  |
| Good                 | 46               | 38               |
| Moderate             | 54               | 45               |
| Poor                 | 62               | 50               |
| Backache             |                  |                  |
| Yes                  | 72               | 48               |
| No                   | 46               | 40               |
| Headache             |                  |                  |
| Yes                  | 84               | 77               |
| No                   | 45               | 35               |
| Joint ache           |                  |                  |
| Yes                  | 66               | 50               |
| No                   | 45               | 39               |
| Years of staying in Spain |              |                  |
| 1-3                  | 57               | 50               |
| 4-6                  | 52               | 24               |
| 7-9                  | 74               | 44               |
| 10-14                | 40               | 39               |
| 15 or more           | 43               | 36               |
| Use of public health services in Spain             |                  |
| Regular             | 57               | 42               |
| Occasional          | 53               | 44               |
| No use              | 45               | 41               |

**DISCUSSION**

This study suggests that a large number, almost 70%, of Finnish people who had moved to Spain had done so for health reasons. In our study we focused on Finnish immigrants, but it is likely that these large proportions of health immigrants also exist among immigrants from other nationalities. Given the health immigrants’ poorer state of health, it would be predictable that these people have greater needs for using health services than the normal population. This kind of results already appeared in this study: health immigrants were using public health services more often than the non-health immigrants. This fact needs to be taken into account in planning health services for the future. Otherwise, it might be a factor causing problems if the amount of immigration increases.

Almost half of all the Finnish living in Spain had taken analgesics during the previous two weeks. The analgesic use of health immigrants differed from the using habits of the non-health immigrants: there were more analgesic users in the group of health immigrants, the use was more frequent among them and they were more often the users of prescription analgesics. The differences in the analgesic use patterns among health immigrants and non-health immigrants can give us valuable information about medication usage patterns in general. The increased use of medications, especially the use of prescription medication, generally leads to a regular use of health services. Health services should be carefully designed to serve the immigrants needs. Co-operation between those European Union nations having immigrants in Spain would be highly recommended. For example
building up an EU-funding public healthcare centre for immigrants from different EU member states would be one suggestion to improve immigrants’ health care in the future.

The possibility of bias due to the sample taking must be taken into consideration. It might have been better to take random samples from the resident registers, but this was not possible because of a lack of registers for Finnish people living in Spain. We tried to prevent the possibility of selection bias by collecting participants from different associations representing the whole Finnish population in Spain. The population in this study (age distribution, health state) is similar one used in a previous study of Finnish people living in Spain in 1998.\(^\text{1,3}\) The participation rate in our study was 53, which is acceptable for such a study. Normally the response rates range from 20 to 80% in such surveys.\(^\text{1,6}\) The accuracy of the responses is a factor that might also decrease the validity of the study.

The rates of analgesic use in our study were relatively high (50%), because immigrants from European countries are often retired and therefore this population includes a large number of elderly people suffering from different aches. It is alarming that some of the prescription analgesics were used as non-prescription analgesics and bought directly from the pharmacies. It could be easier to find pharmacy than to visit doctor in the foreign country, but this might cause problems in patient safety matters. It is not unusual that those immigrants who are advanced in years have no Spanish or even English language skills and the fact that many of them might suffer from different health problems makes them even more challenging customers to the local pharmacies. Immigrants and tourists are a remarkable source of income to these pharmacies, but could be an asset in the competition that pharmacists in the tourist/immigrants areas would develop their language skills? Or could there be multilingual pharmacies in immigrants areas where pharmacists from those EU-countries having immigrants in the area could work? In the absence of the common language, giving the drug information in pharmacies might become impossible and the consequences might be serious. Another alarming factor is the concomitant use of non-prescription and prescription analgesic, which occurred among one quarter of the respondents.

The number of immigrants in Spain continues to increase and majority of these people are retired. Our study revealed, that two-thirds of the Finnish people in Spain suffer from some degree of health problems and especially the health state factors have a large influence on the emigration into Spain. These people will burden the local Spanish health care services in the future and even at the moment the medical expenditure of these people generate costs of millions euros every year. As medical expenditures increase, knowledge of the medical statistics (including information such as health state and drug usage) of Finnish people will become increasingly vital. More studies about health immigrants and about how their health services are managed inside EU would be needed. Economical factors are not the only drivers of these kinds of studies; it is important, also for the patient safety matters, to understand how the medical care of these people is managed in a foreign country.

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References

1. Väännänen M H, Pietilä K, Airaksinen M. Self-medication with antibiotics – Does it really happen in Europe? Health Policy 2006;77(2):186-71.
2. Figueiras A, Caamano F, Gestal-Otero JJ. Sociodemographic factors related to self-medication in Spain. Eur J Epidemiol 2000;16(1):19-26.
3. Mason P. Pharmacy in Spain. Pharm J 1999;263(7067):649-50.
4. Elliott AM, Smith BH, Penny KI, Smith WC, Hannaford PC, Penny K: The epidemiology of chronic pain in the community. Lancet 1999;354(9186):1248-52.
5. Blyth FM, March LM, Brnabic AJ, Jorm LR, Williamson M, Cousins MJ. Chronic pain in Australia: a prevalence study. Pain 2001; 89 (2-3):127-34.
6. Kind P, Dolan P, Gudex C, Williams A. Variations in population health status: results from a United Kingdom national questionnaire survey. BMJ 1998;316:736-40.
7. Mäntyselkä P, Kumpusalo E, Ahonen R, Kumpusalo A, Kauhanen J, Viinamäki H, Halonen P. Takala J. Pain as a reason to visit the doctor: a study in Finnish primary health care. Pain 2001;89:175-80.
8. Antonov KIM, Isacson DGL. Prescription and Nonprescription Analgesics Use in Sweden. Ann Pharmacother 1998;32:485-94.
9. Fury K, Straume B, Thelle DS. Legal drug use in a general population: Association with gender, morbidity, health care utilisation and lifestyle characteristics. J Clin Epidemiol 1997;50(3):341-9.
10. Hanlon JT, Fillenbaum GG, Studenski SA, Ziqbu-Page T, Wall WE Jr. Factors associated with suboptimal analgesics use in community-dwelling elderly. Ann Pharmacother 1998;30(7-8):739-44.
11. Paulose-Ram R, Hirsch R, Dillon C, Lsocnocy K, Cooper M, Ostchega Y. Prescription and non-prescription analgesic use among the US adult population: results from the third National Health and Nutrition Examination Survey (NHANES III).Pharmacoepidemiol Drug Saf. 2003;12(4):315-26.

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12. Ahonen R, Enlund H, Klaucka T, Vohlonen I: Use of analgesics in a rural Finnish population. J Pharmacoepidemiol 1991;2:3-17.
13. Eggen AE: The Tromso Study: frequency and predicting factors of analgesic drug use in free-living population (12-56-years). J Clin Epidemiol 1993; 46(11)1297-304.
14. Finnish Statistics of Medicines 2002.Publications of the National Agency for Medicines and Social Insurance Institution. Edita Prima Oy. 2003.
15. Karisto A.: Satumaa? Tutkimus Espanjaan muuttaneista suomalaisista eläkeläisistä [Fairyland ? A study about retired Finns moved to Spain ]. Manuscript in Finnish, 2002.
16. Heikkilä T: Statistical analysis. Oy Edita Ab, Helsinki 2001. (In Finnish).