

## Letters to the editor

**Immigration, tourism and the heart:  
a descriptive analysis of cardiovascular diseases  
in different populations****Immigración, turismo y corazón: análisis descriptivo de  
enfermedades cardiovasculares en diferentes poblaciones**

Dear Director:

Over the past two decades, deaths from cardiovascular diseases (CVDs) have been declining in high-income countries, but have increased in low and middle-income countries.<sup>1,2</sup> There is a lack of data across European countries in relation to CVD in migrants and minority ethnic groups.<sup>3,4</sup> Spain is a common touristic destination for European Union citizens, but also for people from other continents, specially Latin America and Africa.<sup>5</sup> As they come from different geographical areas and the reason to visit our country is different, we hypothesize that the profile of CVD is different too. To know these differences we conducted a retrospective study of foreign citizens admitted to Hospital General Universitario de Alicante from 2000 to 2012. Patients were divided in two groups:

- 1) Foreign citizens from high-income countries (FCHICs): European Union, United States, Canada, Australia and New Zealand.
- 2) Foreign citizens from low and middle-income countries (FCLMICs): Latin America, North Africa, Sub-Saharan Africa, Eastern Europe and Asia.

The following variables were collected: demographic characteristics, nationality and diagnosis at discharge. We used IBM SPSS® 21.0 version for statistical analysis.

In the period 2000–2012, a total of 387,862 patients were admitted to the hospital, of whom 32,020 were foreign citizens, representing an 8.2% of admissions. Within this group of patients, 3,728 (11.6%) had a discharge final diagnosis of CVD. **Table 1** shows admissions for CVD vs. non-CVD in foreign citizens from high-income countries and from low and middle-income countries and also among regions of low and middle-income countries. The percentage of women was higher in low and middle-income countries than in high-income countries (36% vs. 26.9%) (odds ratio: 1.53; 95% confidence interval: 1.33–1.76;  $p < 0.001$ ), being

Latin American women the majority in this group. Foreign citizens from low and middle-income countries were younger than those from high-income countries (median age, 57.9 vs. 67.2;  $p < 0.001$ ). According to region of origin, patients from Sub-Saharan Africa were the youngest (median: 37.8 years). Prevalence of admission for CVD in low and middle-income countries was lower than in high-income countries (7.1% vs. 22.4%) ( $p < 0.001$ ). The most common diagnosis was coronary heart disease (37.3%), followed by vascular disease (25.9%), arrhythmia (13.7%), myocardopathy and heart failure (7.9%), valvular heart disease (6.8%), hypertension (5.5%), pulmonary hypertension/pulmonary embolism (2.1%) and pericarditis (0.8%). Accordingly to country of origin, United Kingdom had the highest percentage of coronary heart disease (31.6%), Morocco and Algeria were the countries with more admissions because of valvular heart disease (17.1% and 8.3% respectively), the majority of cases of pericarditis came from Morocco (21.4%) and Ecuador (17.9%), and 17.7% cases of pulmonary hypertension and pulmonary embolism came from Argentina. In the group of high-income countries the prototype patient was a man in his sixties with coronary heart disease from an European high-income country, while in the group of low and middle-income countries the profile was a woman in her fifties with a long-term myocardopathy or valvular heart disease, coming from a Latin American or North African country.

The main limitation of the present study is that it is focused only in admitted patients, not including out-patient consultations or visits to the emergency room, so we have only analyzed the most severe cases that required hospital admission. Patients from low and middle-income countries are younger than patients from high income countries, leading to a lower number of admissions in this group because coronary heart disease but not for other CVDs (as valvular heart disease or pericarditis). Additionally, it is important to note that patients with severe CVDs have difficulties for travelling abroad, so we could have been seeing only the “tip of the iceberg”, those who arrived to our country. In the same way, some foreign citizens returned to their countries when they were recovered, limiting their follow-up.

In summary, we can conclude that the profile of CVDs in high-income countries and low and middle-income countries is different. Differences according to country of origin are discovered when a large group of people is analyzed.

**Table 1**

Cardiovascular and non-cardiovascular disease admissions of foreign citizens from high-income, low and middle-income countries admitted to Hospital General Universitario de Alicante from 2000 until 2012.

	CVD N	CVD (%)	Non-CVD N	Non-CVD (%)	OR	95%CI	p
Total	3,728	11.6	28,292	88.4			
FCHICs	2,142	22.4	7,432	77.6	1		
FCLMICs	1,586	7.1	20,860	92.9	0.264	0.246-0.283	< 0.001
Latin America	650	5.8	10,612	94.2	1		
North Africa	600	9.8	5,503	90.2	1.780	1.586-1.998	< 0.001
Eastern Europe	200	7.7	2,414	92.3	1.353	1.147-1.595	< 0.001
Asia	81	8.4	878	91.6	1.506	1.184-1.917	0.001
Sub-Saharan Africa	55	3.6	1,453	96.4	0.618	0.467-0.818	0.001

CI: confidence interval; CVD: cardiovascular disease; FCHICs: foreign citizens from high-income countries; FCLMICs: foreign citizens from low and middle-income countries; OR: odds ratio.

## Authorship contributions

This manuscript has not been submitted to another journal and all authors have made substantial contributions to all of the following: 1) conception and design of the study, acquisition of data, analysis and interpretation of data, 2) drafting the article or revising it critically for important intellectual content, 3) final approval of the version to be submitted.

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## Conflicts of interest

The authors declare that they have no competing interests.

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## Health-related quality of life in young people at risk of exclusion in Melilla (Spain)



### Calidad de vida relacionada con la salud en jóvenes en riesgo de exclusión en Melilla

Mr. Editor:

There are small isolated human groups within our communities with a lot of possibilities of being involved in exclusion processes. The aim of this study is to show the quality of life related to health (HRQL) and how it is influenced by certain factors on two teenagers groups at risk of exclusion in Melilla, as they represent approximately 10% of young people of their age. The first group is Unaccompanied Foreign Minors (UFMs) which represent a new migration currently in Europe; the second group, students in Initial Professional Qualification Programs (IPQP). The study was developed during 2010 in Melilla (Spain), City of a multicultural character located on the Mediterranean coast of North Africa which has a land border with Morocco, affected by migration.

Therefore, we designed a cross-sectional study and a probability sampling by conglomerates was performed, with a single-stage procedure and with a second stage of simple randomness. From the study population (169 UFMs plus 211 IPQP), 172 surveys were conducted, of which 28 were discarded remaining 144 (71 UFMs plus 73 IPQP). The HRQOL was measured using the Spanish version of *Vécu et Santé Perçue de l'Adolescent* (VSP-A).<sup>1</sup> A descriptive statistical analysis (Student's t, effect size, d to Cohen and correlation r) was performed and a multivariate analysis was included. All data were analyzed using SPSS and Excel.

The characteristics of the sample were briefly the following: mainly boys (71,7%) with a median age of 16,3 years, 56,3% born in Morocco, who largely came from broken homes (Loss of a parent or separated: IPQP 25,3%, UFMs 50% and poor parental level of education as they had no studies or did not finished primary school: IPQ 30%, UFMs 53,7%). All domains had an acceptable internal consistency (Cronbach  $\alpha$  range, 0.75 to 0.84). The results show scores significantly lower than reference population in vitality, physical, psychological wellbeing and relationship with parents. UFMs lower

scores. Significantly lower scores of girls in physical, psychological and self-esteem (Table 1). The variables associated with HRQL in the multivariate analysis were: sex, age, religion, sports and the prevalence of consumption in the last 30 days of tobacco, alcohol and tranquilizers.

These observations are consistent with previous findings that have used the same questionnaire in Spain<sup>2</sup> as in Belgium<sup>3</sup> (n=158) with immigrant adolescents. Our study provides HRQL in UFMs. The quantitative study approach may complement other qualitative ones as the performed in the Basque Country (Spain)<sup>4</sup> with a sample of 60 UFMs. The difficulty of the study and approach to this group lies, among others, in the dispersion due to the different flats host and centers where they live. They can explain smaller sample sizes, such as a study of Hodes et al.<sup>5</sup> (n=78 UFMs between 12 and 18 and 35 foreign children accompanied), or Gilgen et al. (2005) in Basel.

Multiple linear regression analysis corroborates findings already discussed in relation to sex, providing moreover the possible influence of the consumption of certain easy to get substances by adolescents such as tobacco and alcohol, in the different domains of HRQL, reducing their significantly scores. It also shows the positive influence that certain adolescent's attitudes have in HRQL such as religiosity and sports.

The main limitation of this study is the one inherent in cross-sectional studies.

The results reflect the need to design preventive programs<sup>1</sup>: programs of health promotion, related to leisure, peer relationships, interpersonal relationships, self-esteem, empowerment and autonomy of women, and such as the action on conflicts experienced in relationship with their parents. These results provide clues too on how to investigate other youth groups.

<sup>1</sup> «Abandoning children on the streets involves placing delayed effect bombs on the heart of cities» «Laisser des enfants dans la rue revient à poser des bombes à retardement au cœur des villes». Tessier S, director. L'enfant des rues et son univers: ville, socialitation et marginalité. Paris: Syros; 1995. 227p.