

Biological Anthropology and Health Issues

Exploring the influence of sex and country of origin in the health status of particular collectives such as immigrants and children with severe health conditions



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Biological anthropology working with demographic and medical variables could contribute to get a more precise picture of some vulnerable collectives of the health system

Health status of immigrants of low-income countries living in downtown Barcelona



The autonomous community of Catalonia, one of the most heavily industrialized regions of Spain, has multiplied per 12 the immigrant population since 1999, with a crucial moment in 2001 with 48.5% of year-to-year growth of immigrant population (257.320 immigrants).

Some districts of downtown Barcelona, capital of Catalonia, show the highest migratory density of the city. **El Raval, one of the two neighborhoods of the historical center, is home to 200,000 people, from which at least a 47.4% was born abroad.**

To clarify the degree of **gender and other demographic differences** among 5 infectious diseases in immigrants from low-rent countries

Screening of 3,132 immigrants

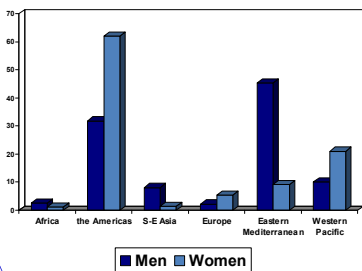
from low-rent countries attended for first time
Public Primary Care Centre
El Raval district
from 2001 to 2005

5 Infectious diseases

- Hepatitis B (HBV)
- Hepatitis C (HCV)
- Human immunodeficiency virus infection (HIV)
- Syphilis
- Tuberculosis (latent and active)

There are two markedly different male/female pictures ($p < 0.001$) in El Raval district: women in the extreme ranges of age (<25 years and ≥ 40 years) from the Americas, and men of 25 to 35 years from the Eastern Mediterranean region.

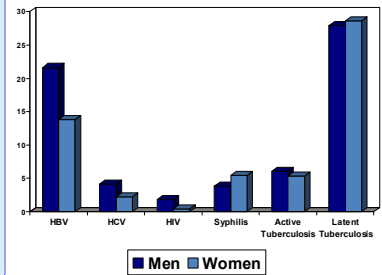
Distribution of patients (%) by WHO regions



Taking home message

- ✓ Immigrant men and women attended at El Raval district from Barcelona showed a clearly different demographic profile. However, differences in disease frequencies are only noticeable for Hepatitis B.
- ✓ Latent tuberculosis in both sexes showed alarming high frequencies, particularly among immigrants reporting more than 5 years of residence in Spain.
- ✓ Cost-cutting exercises such as the exclusion of non-regular immigrants from public PHC services could result in negative health effects for immigrants, increasing health needs in the medium and long term.

Distribution of patients (%) by disease



Sex Differences In Children With Severe Health Conditions



Do girls show better survival than boys under severe health conditions?
Analysis of sex differences in morbidity and mortality patterns in children admitted in a Pediatric Intensive Care Unit (PICU)

Although **more male embryos are conceived**, a **higher number of male fetuses result in stillbirth**.

It has been observed that **males have worse neonatal and infant health** and are more prone to suffer preterm births, sudden death syndrome, congenital malformations, developmental retardation, and respiratory afflictions, among other conditions.

Taking into account environmental factors, male fetuses and infants seem to be more affected by environmental stress and damaging factors.

In children, the effect of severe stress on sex-related survival has only been analyzed for concrete diseases. In these cases, boys had higher mortality and worse prognoses.

Screening of 2,609 patients

from 2006 to 2008
admitted in a PICU

Analyses of :

- demographic variables
- clinical markers of severity
- diagnoses



More boys were admitted
 $p < 0,01$

1,500 Boys
(57.5%)

1,109 Girls
(42.5%)

Higher incidence in boys of

Respiratory diseases (worst fetal maturation of lungs)

Polytraumatic injuries (careless behavior, risky activities and sports, traffic accidents)

2,609 patients

103 in-hospital deaths
(3.95%)

49 Boys
(3.3%) \neq **54 Girls**
(4.9%)

The excess of girls' mortality could be explained by:
Higher occurrence of nosocomial infection
Younger age
Wide range of admission diagnoses

Taking home message

- ✓ This is a study about mortality and morbidity in a PICU. It is not representative of the general trends of mortality among children.
- ✓ **Under severe health conditions:**
- ✓ 15% more boys were admitted but mortality was 1.6% higher in girls.
- ✓ Girls died of a broader range of causes. Boys' main causes of death were respiratory diseases and polytraumatic injuries.

More information and references in:

Hladun O, Grau A, Esteban E, Jansà JM. Results from screening immigrants of low-income countries: data from a public primary health care. J Travel Med. 2014 Mar-Apr;21(2):92-8.

Esteban E, Bujaldon E, Esparza M, Jordan I, Esteban ME. Sex differences in children with severe health conditions: Causes of admission and mortality in a Pediatric Intensive Care Unit. Am J Hum Biol. 2015 Sep 10;27(5):613-9. Part of this work has been the final dissertation thesis of Esther Bujaldon for the Master in Biological Anthropology from the Universities of Barcelona and Autònoma de Barcelona.