

New diagnoses of HIV in Catalonia and socioeconomic inequalities: Spatial-temporal representation with ring maps

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INTRODUCTION

Spatial visualization of HIV surveillance data could contribute to strength program planning to face the HIV epidemics.

Objectives:

To identify geographic patterns of new HIV diagnoses in Catalonia and to describe the effect of the socioeconomic context on their distribution through ring maps, a powerful technique to visualize and interpret spatial-temporal information in a single graph.

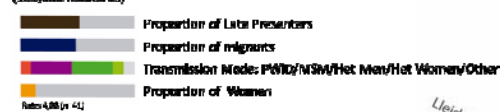
METHODS

Using data from the HIV Surveillance Registry of Catalonia (2012-2016), we constructed multivariate ring maps to visualize the rate of new HIV diagnoses and their distribution according to transmission pathways, gender, nationality, a deprivation index, and the Index of Concentration at the Extremes to measure economic inequalities. The study area was the Primary Care Health Areas (approximately 5,000 population each one). A lineal regression model was used to determine the associated factors to higher rates of new HIV diagnoses.

RESULTS

Figure 1. New HIV Diagnoses in Catalonia and Economic Deprivation (2010-2016)

Distribution by Typology on New HIV Diagnosis (100,000 inhabitants)



Deprivation Index of the Observatory of the Catalan Health System by Basic Health Area

Highest values (red) correspond to the lowest socioeconomic status

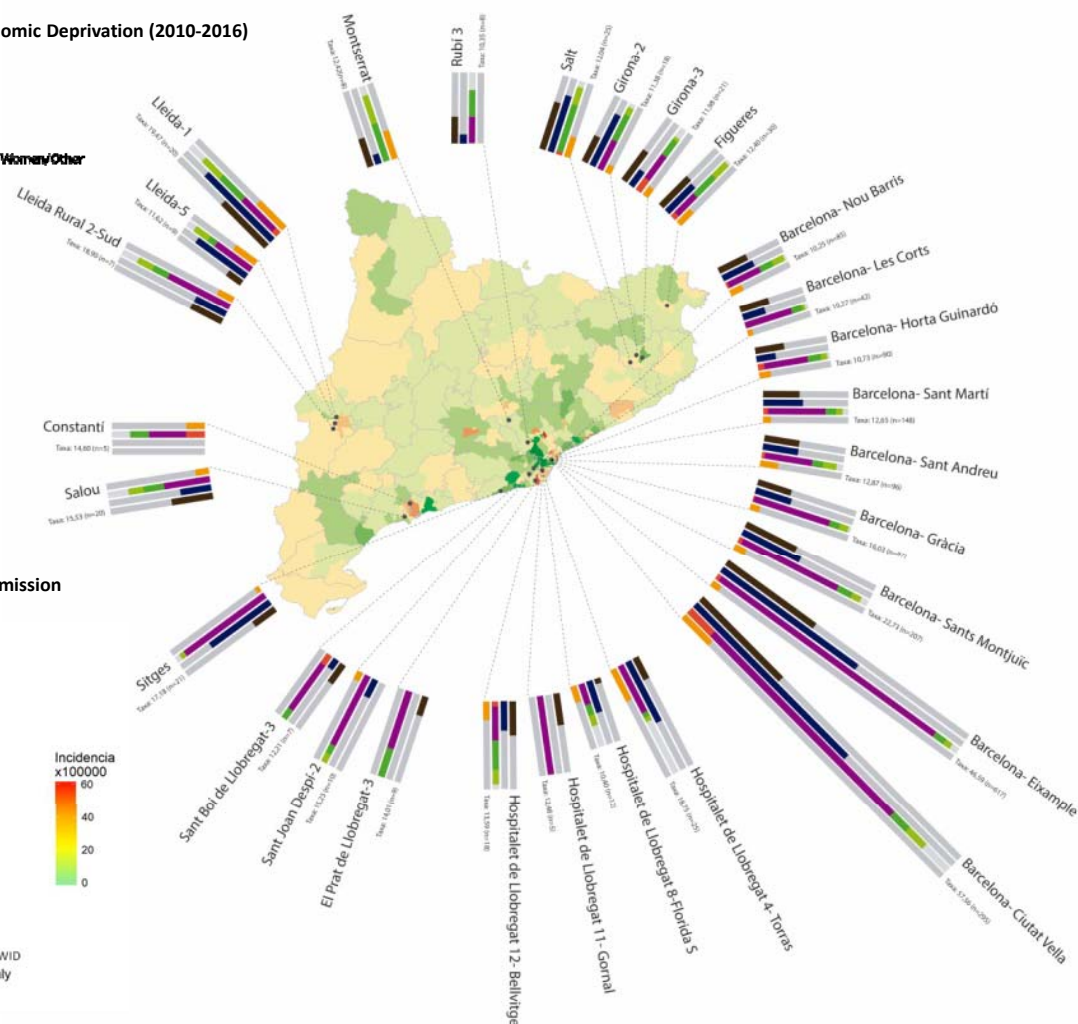
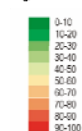
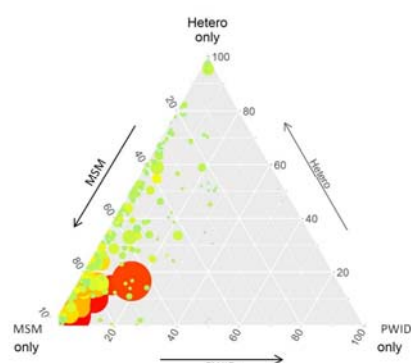


Figure 2. Health Areas Classification by Main Transmission Mode and rate of new HIV diagnoses



CONCLUSIONS

Ring maps revealed a substantial spatial association in HIV diagnosis rate. New diagnoses were concentrated in urban areas. Barcelona presented the highest HIV diagnosis rate (24,73 cases per 100,000 population). The primary care health areas with the highest assigned population, the highest proportion of men (15-65 years), the highest proportion of foreign men from high-income countries and the highest percentage of men who have sex with men (MSM) transmission were those with the highest incidence of HIV. No association was observed between HIV diagnosis rate and economic deprivation and economic inequality.