

OBJECTIVES

- **To assess the geographical inequities** of per capita consumption for 4 product ATC/OTC group categories:
 - ATC B01AE direct thrombin inhibitors & B01AF direct factor Xa inhibitors;
 - ATC G03G gonadotropins and other ovulation stimulants
 - OTC 86H2 hair loss; and
 - OTC 13A sleep without prescription

METHODS

- An **ecological study** was conducted using aggregated information on product sales, mean income, age groups and gender. Information was retrieved from the **IQVIA sell-in database**, which is provided with a wholesalers' panel that **cover 99% of the market** and regularly provides the sales units distributed to retail pharmacies.
- This database was used as it has the better coverage rate, with **information provided for each of the 2,568 sanibricks**, which are geographic territories that comprise the **area of influence of the Primary Care centers** of Spain.
- To assess the inequity in consumption an **ecological correlation** was estimated to assess the linear relationship between per capita consumption and socioeconomic characteristics (age, gender, mean income) in each geographical territory. The **Pearson correlation coefficients** were used to estimate the linear relationship between two continuous variables.
- A **sensitivity analysis** was done using the **Spearman correlation** to evaluate non-linear, monotonic relationship between each of the pair of variables.

RESULTS

- During a **3-year period** the mean (standard deviation, minimum-maximum) units of consumption per capita for each product category was:
 - ATC B01AE/B01AF: **0.56 (0.14, 0.08-1.92)**,
 - ATC G03G: **0.02 (0.03, 0.00-0.57)**,
 - OTC 86H2: **0.10 (0.07, 0.01-1.58)** and
 - OTC 13A: **0.41 (0.24, 0.07-2.58)**.
- A moderate **positive correlation (0.669, $p < 0.001$)** between **ATC B01AE/B01AF** and **proportion of ≥ 65 years old**, and **low correlation (0.42, $p < 0.001$)** between **ATC G03G** and **mean income were observed**, Table 1 & Figure 1.
- Interestingly a **high positive correlation (0.74, $p < 0.001$)** between **OTC 86H2 and OTC 13A** consumption was also observed (Figure 1(c)).
- The relationships observed in above analysis have been confirmed in sensitivity non-linear analysis, Table 2.

CONCLUSION

IQVIA sell-in database allows to analyze relationship between retail pharmacy drug consumption and socio-demographic characteristics.

A low **positive correlation of gonadotropin/ovarian stimulants and mean income** was observed, as well as a high positive correlation between **hair loss and sleep without prescription consumption** and a moderate correlation between **thrombin/Xa inhibitors consumption and age**.

Corresponding author: Daniel Callejo, Daniel.CallejoVelasco@iqvia.com

Table 2. Correlation between per capita consumption and socio-demographic variables

Variables		Pearson Correlation Coefficients (r) Prob > r under H0: Rho=0 (p-val) Number of Observations (N)								
		< 20 y.o.	20-64 y.o.	65+ y.o.	Women	Mean income	OTC 13A	OTC 86H2	ATC B01E	ATC G03G
OTC 13A	r p-val N	-0.1466 <0.001 2566	0.0493 0.0124 2566	0.0658 <0.001 2566	0.3576 <0.001 2566	0.3156 <0.001 2566	1 <0.001 2566			
OTC 86H2	r p-val N	-0.0715 <0.001 2566	0.0342 0.0834 2566	0.0268 0.174 2566	0.3529 <0.001 2566	0.2707 <0.001 2566	0.7353 <0.001 2566	1 <0.001 2566		
ATC B01E	r p-val N	-0.6213 <0.001 2566	-0.5393 <0.001 2566	0.669 <0.001 2566	0.054 0.0062 2566	-0.0174 0.3771 2566	0.2766 <0.001 2566	0.2452 <0.001 2566	1 <0.001 2566	
ATC G03G	r p-val N	0.0772 <0.001 2545	0.0385 0.0518 2545	-0.0685 <0.001 2545	0.3331 <0.001 2545	0.4171 <0.001 2545	0.3647 <0.001 2545	0.3591 <0.001 2545	0.0893 <0.001 2545	1 <0.001 2545

Figure 1. Scatterplot and linear correlation: (a) gonadotropin and mean income; (b) hair loss and sleep; (c) thrombin/Xa inhibitors and age

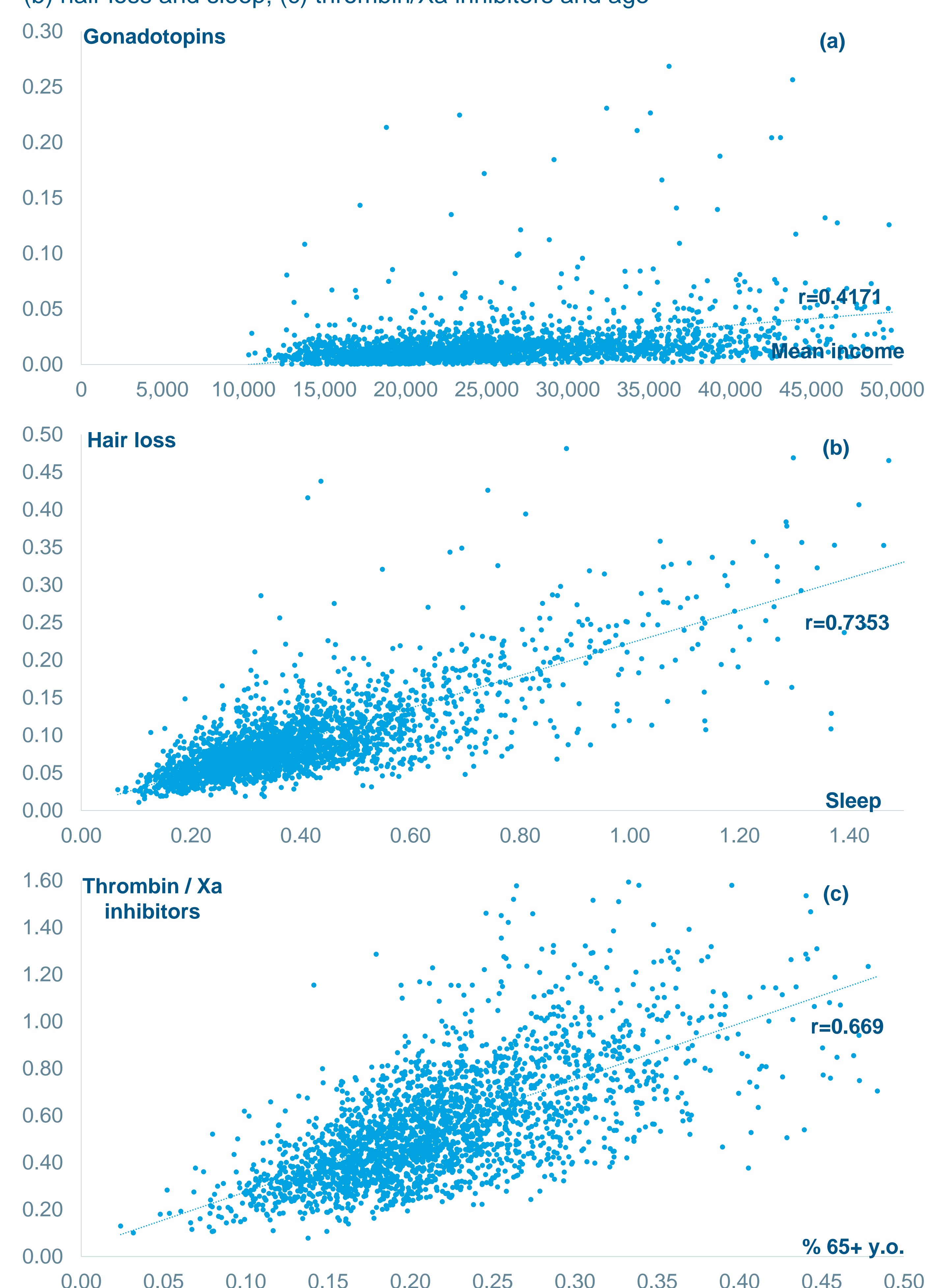


Table 2. Sensitivity analysis, non-linear relationships between per capita consumption and socio-demographic variables

		Spearman Correlation Coefficients (r) Prob > r under H0: Rho=0 (p-val) Number of Observations (N)								
		< 20 y.o.	20-64 y.o.	65+ y.o.	Women	Mean income	OTC 13A	OTC 86H2	ATC B01E	ATC G03G
OTC 13A	r p-val N	-0.18 <0.001 2566	0.0011 0.9545 2566	0.1085 <0.001 2566	0.3519 <0.001 2566	0.1831 <0.001 2566	1 <0.001 2566			
OTC 86H2	r p-val N	-0.0741 <0.001 2566	0.0689 <0.001 2566	0.0168 0.395 2566	0.4089 <0.001 2566	0.1268 <0.001 2566	0.7229 <0.001 2566	1 <0.001 2566		
ATC B01E	r p-val N	-0.6232 <0.001 2566	-0.5241 <0.001 2566	0.6704 <0.001 2566	0.0973 <0.001 2566	-0.0956 <0.001 2566	0.2812 <0.001 2566	0.2639 <0.001 2566	1 <0.001 2566	
ATC G03G	r p-val N	0.2842 <0.001 2545	0.2541 <0.001 2545	-0.3072 <0.001 2545	0.4992 <0.001 2545	0.4653 <0.001 2545	0.3113 <0.001 2545	0.419 <0.001 2545	-0.0961 <0.001 2545	1 <0.001 2545