

Rational therapy publication rate correlates with wealth of a society

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Two recent articles published in the consecutive issues of the Journal suggested that health professionals in Brazil have recently showed the rising interest for rational therapeutics including medical and economic consequences of widely prescribed drugs^{1,2}. Inspired with these efforts and taking into account limited resources of healthcare systems in many countries as well as recent worldwide financial crisis³ we decided to investigate whether there is a correlation between rational therapy publication rate and national indicators of welfare and healthcare investments.

We have taken some of the indicators from the World Bank internet database of countries: total population (for 2012), gross domestic product per capita (GDPpc, for 2012) and health expenditure per capita (HEpc, for 2011). We have also

retrieved the journal indexing databases, Pubmed and Scopus, with appropriate key words (rational, treatment, management, therapeutics, pharmacotherapy, drug, therapy) limiting to the title field and using Boolean operators “AND” (rational) and “OR” (others). The total search was narrowed with a country name (the world as a whole was also included) and number of articles was standardized per million inhabitants (publication per million-Ppm). In general, the search adjustments were performed only in exceptional cases, taking into account a country’s specificity and data outliers. Our analysis included only complete tripartite country’s data per a database, excluding those outside 95 percentiles of Ppm which gave 75 pairs from PUBMED and 128 ones from SCOPUS database. The data distributions for all three parameters were highly skewed and log₁₀ transformation converted them to normal distribution pattern. The results showed high correlation of Ppm with both GDPpc (Pearson $r = 0.598$, $p < 0.001$; $r = 0.638$, $p < 0.001$) and HEpc ($r = 0.642$, $p < 0.001$; $r = 0.679$, $p < 0.001$) (Figure 1). In addition, we found statistically significant linear regressions in all four sets of data and it is illustrated with the coefficients of determination (r^2) shown next to the data series in Figure 1 ($p < 0.001$).

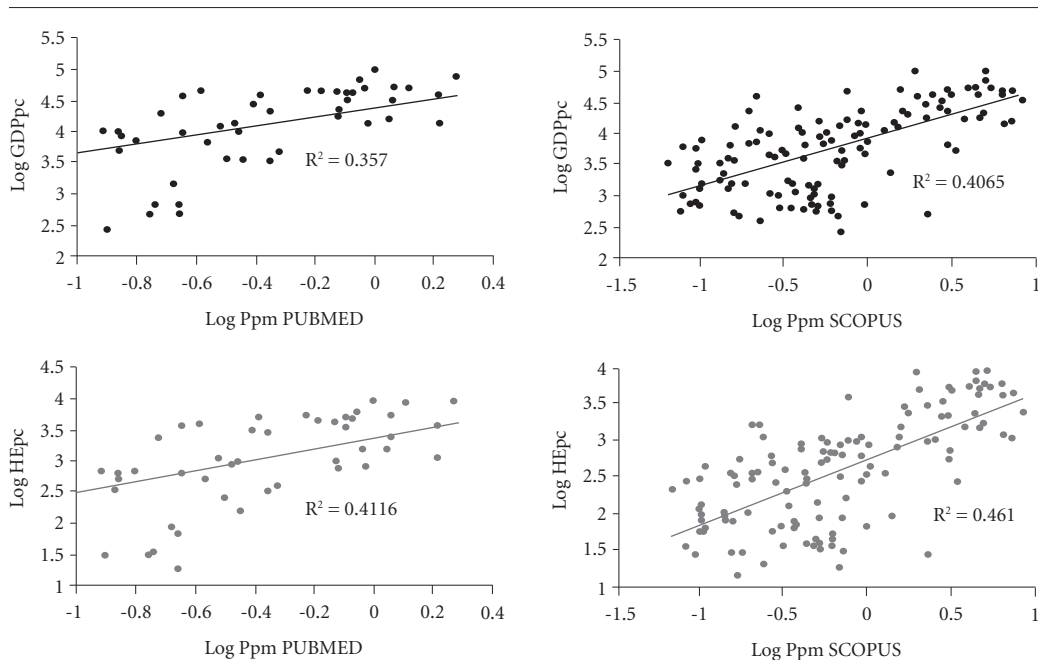


Figure 1. Relationships between log₁₀ transformed data of the number of published papers in the field of rational therapy standardized per million inhabitants (Log Ppm), the gross domestic product per capita (Log GDPpc) and the health expenditure per capita (Log HEpc), for 75 (PUBMED search) and 128 countries (SCOPUS search) including the world population, too.

