

# Improvement Proposals For The Official Statistics On Social Determinants Of Health: An Experience From The Users' Perspective

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## **Abstract**

The objective was to identify and select indicators to assess the impact on health of the social context and the latest economic recession in Spain and its regions. The proposals for improvements that emerged during this work may be useful to increase the quality of the statistical processes and products from key sources that use official statistics.

**Keywords:** Social determinants of health, contextual indicators, official statistics, quality.

## **1. Introduction**

Social determinants of health (SDH) are the circumstances in which people are born, grow up, live, work and age (Whitehead, 2006). Their variable distribution explains almost all the social inequalities in health, which are avoidable, systematic and unfair (Solar, 2010).

The WHO framework on health inequalities was adapted for the Spanish context by the Commission to Reduce Social Inequalities in Health in Spain (2012).

There is abundant evidence to study the impact of SDH on social inequalities on health (Marmot, 2013). However, evidence regarding the recent recession (Achuthan, 2008) is controversial. While some authors have observed a negative impact on health (Karanikolos, 2013; Gili 2013), others have observed less evident and even contrary effects (Catalano, 2011; Kondilis, 2013, Pickett, 2015). This recession has had consequences on the austerity politics implemented by many countries (Gool, 2014). In Spain, social and economic inequalities between its regions as well as the different policies implemented (e.g. on health, labour, support of vulnerable populations; Bacigalupe, 2016), might have contributed to these geographical variations in the recession's consequences on health and health inequalities (Segura, 2014; Rodríguez, 2014).

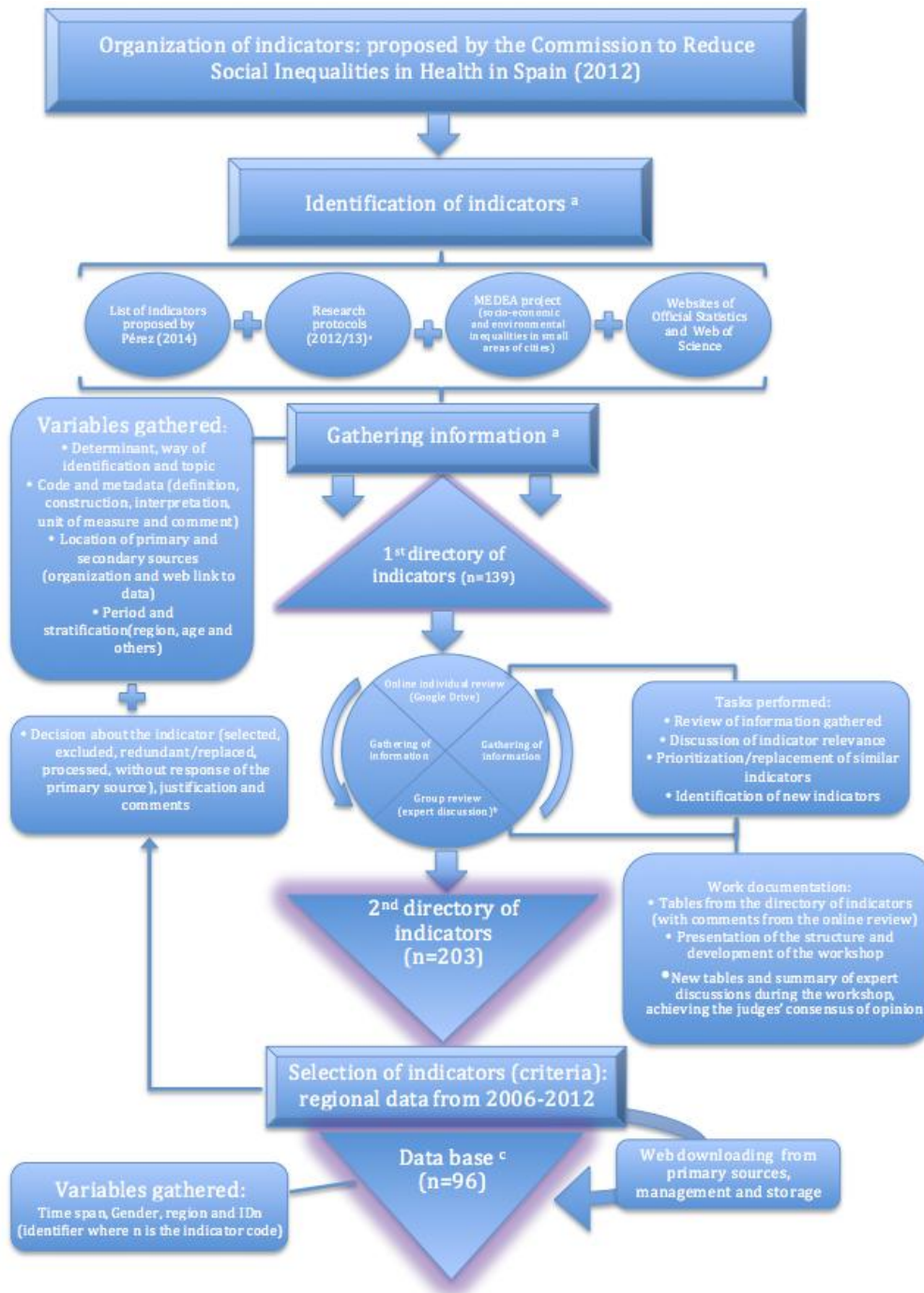
The study of the possible variability among the Spanish regions could contribute to the assessment of the health policies implemented. In that sense, our objective was to provide indicators to assess the impact of the social context and the latest economic recession on health, in Spain and its regions.

## **2. Methods**

Based on the Spanish conceptual framework of the social inequality determinants in health, we identified indicators sequentially from key documents, Web of Science, and organizations using official statistics. The information gathered resulted in a large Directory of Indicators that was reviewed by an expert panel formed by members of the Biomedical Research Networking Centre on Public Health and Epidemiology ([www.ciberesp.es](http://www.ciberesp.es); Spanish Health System). We then selected a set of those indicators according to geographic (availability of data for regions) and temporal (at least from 2006 to 2012) criteria.

Finally, we created a database for the selected contextual indicators. We had to process a lot of them to make them suitable for the research requirements (e.g. to merge databases, to build new indicators, to transform the unit of measure, to standardize the format of variables). Figure 1 depicts the whole process followed.

Figure 1. Process for the identification and selection of contextual indicators on Social Determinants of Health.



<sup>a</sup> Workshop of members of the Biomedical Research Networking Centre on Public Health and Epidemiology ([www.ciberesp.es](http://www.ciberesp.es); Spanish Health System), on 2<sup>nd</sup> September 2014 in Alicante, Spain.

<sup>b</sup> Workshop, on 27th and 28th November 2014 in Barcelona, Spain. Attended by 22 researchers from: Andalusian School of Public Health; Andalusian Health and Environmental Observatory (OSMAN); Public Health Agency of Barcelona; Carlos III Health Institute; Research and Public Health General Directorate of the Valencia Regional Government; Research Group on Statistics, Econometrics and Health from the University of Girona; University of the Basque Country; Health Ministry of the Madrid Government; and Andalusian Health Ministry.

We detected various areas in need of improvement during the phases of the identification, selection and information gathering of contextual indicators on Social Determinants of Health. Some of them could have been solved after the publication of this paper.

We used the statistic software R (R Core Team, 2016) and its auxiliary packages ‘pxR’ (Viciana, 2014), ‘gdata’ (Warner, 2015) y ‘dplyr’ (Wickham, 2015).

### **3. Results**

We identified 203 contextual indicators related to social determinants of health. Of those indicators we excluded 84 (41.4%) due to them not satisfying either the geographical criteria or the temporal criteria (16.3% and 35% of the identified indicators, respectively). We finally selected 96 indicators (47.3% of the indicators identified).

The Spanish Statistics Institute provided the main information sources for the selected indicators (43.7%), followed by the Spanish Ministry of Health, Social Services and Equity (14.6%), Spanish Ministry of Education, Culture and Sport (9.4%) and Eurostat (7.3%).

At least 80% of the identified indicators related to dependency and healthcare services were excluded in the selection process. The final selection of indicators covered all social determinants of health. 62% of these were not available on the Internet.

During the identification and selection of indicators and data, we detected various areas in need of improvement. Some suggested improvements are: to include data segmentation by regions and age groups; to expand the time span of indicators on migrant populations; to offer bookmarks for data queries; and to publish the indicators and data already requested by users. Table 1 depicts all the improvements identified.

Table 1. Indicators on Social Determinant of Health: improvement proposals <sup>a</sup>.

Area	Improvement proposals <sup>a</sup>
Contextual indicators	<ul style="list-style-type: none"> <li>• More indicators on residential environment and psychosocial factors.</li> <li>• More indicators related to childhood and people 65 years old and over.</li> <li>• To create indicators on ethnic minorities, especially Spanish Roma.</li> </ul>
Data for regions	<ul style="list-style-type: none"> <li>• More indicators for macroeconomic politics.</li> <li>• To incorporate the stratification variables of gender and age groups.</li> <li>• To increase the sample sizes (e.g the EU statistics on income and living conditions, EU-SILC, or the Spanish <u>Survey of Household Finances</u>).</li> </ul>
Data for time spans (years)	<ul style="list-style-type: none"> <li>• More indicators on health services.</li> <li>• More indicators related to migrant populations.</li> <li>• To provide complete time spans, without separate files o different Web access (e.g. for the sources from the Spanish System for Autonomy and Disability Care or the Spanish Centre of Sociological Researches).</li> </ul>
Identification of indicators	<ul style="list-style-type: none"> <li>• To establish an unique web link to the indicator or, at least, the same information in the different links regarding time span, units of measure and stratification variables.</li> <li>• To minimize the breaking of web links, indicating the new URL.</li> <li>• To expedite the data request process and to minimize the server errors (e.g. the Population and Household Census).</li> <li>• To publish the indicators and data of the most frequent users' request.</li> </ul>
Information quality	<ul style="list-style-type: none"> <li>• To make tables with the same information but different formats comparable (e.g. between Excel and Pc-axis).</li> <li>• To produce different base years according to the years on which the main surveys are performed.</li> <li>• To include the sampling errors or intervals of confidence in the tables (as another measure).</li> </ul>
Collaborative data access	<ul style="list-style-type: none"> <li>• To provide direct links to the tables for the data requests realized (e.g. the bookmarks provided by Eurostat).</li> <li>• To facilitate the link or Web contact from secondary sources of the organization responsible for the primary information source.</li> <li>• To add web links to the same indicators but from larger geographical areas (e.g. direct links to Eurostat from the Spanish Statistics Institute).</li> <li>• To implement or expand the Data Warehouse Systems into other statistics in order to increase the possibilities of selection and crossing of variables (like the Population and Household Census does).</li> <li>• To review the confidentiality restrictions for crossing variables in registers (e.g. the Population and Household Census of 2011).</li> <li>• To answer the users' data requests, although those data are not available (in our study, 26% of our requests received no reply; e.g. requests related to the Spanish Health System, or the Ministries of Labour, Education or Interior).</li> </ul>

<sup>a</sup> They were identified during the phases of the identification, selection and information gathering of contextual indicators on Social Determinants of Health. Some of them could have been solved after the publication of this paper

#### **4. Conclusions**

We have provided a directory with detailed information of contextual indicators on social determinants of health and a database to facilitate assessment of the impact of the latest economic recession on health and health inequalities in Spain and its regions.

The proposals for improvements that emerged during this work may be useful to inraising the quality of the statistical processes and products from the key sources that use official statistics.

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