Health studies: Opportunities for the development of Human Biomonitoring in Europe

Sónia Namorado1,2, Anna-Maria Andersson3, Stine Agergaard Holmboe3, Baltazar Nunes1,2, Carlos Dias1,2, Hanna Tolonen4

1Department of Epidemiology, National Health Institute Doutor Ricardo Jorge, Portugal; 2NOVA National School of Public Health, Public Health Research Centre, Universidade NOVA de Lisboa, Portugal; 3Department of Growth and Reproduction, Rigshospitalet, Denmark; 4Department of Public Health Solutions, Finnish Institute for Health and Welfare (THL), Finland
sonia.namorado@insa.min-saude.pt

BACKGROUND

Human Biomonitoring (HBM) and surveys with a health examination component are very similar regarding infrastructure and procedures necessary for their implementation. Both rely on planned fieldwork for collection of data and biological materials, which usually needs considerable financing. Thus, combined planning and fieldwork could result in more cost-effective ways to conduct health and environmental monitoring. As such, within the HBM4EU project an inventory of the health studies available which could include an HBM module was performed.

METHODS

An online questionnaire was developed to collect information on recently conducted, ongoing or planned health studies in the EU and EEA countries, in which an HBM module could be included. The link to the questionnaire was distributed with the help of the National Hub Contact Points of the HBM4EU project.

RESULTS

From the 58 different studies included in this inventory, one quarter were health examination surveys (HES), one quarter were targeted health studies and another quarter were combined HES and HBM surveys (Figure 1).

Half of the studies were longitudinal and presented the possibility of introducing an HBM component in the future (Figure 2).

Most studies for which data was reported had public funding either from governments or from other public grants (national or European) (Figure 3).

The vast majority of the studies which did not have an HBM component, included the collection and storage of biological samples, frequently blood, plasma, serum or DNA (Figures 4 and 5).

More than 50% of the studies reported that measurement of chemicals had already performed or was planned to be performed. The most frequently measured chemicals were phthalates, bisphenols and cadmium.

CONCLUSIONS

In vast majority of the studies included in the inventory, biological samples were collected and stored, raising question of its use in HBM studies for the analyses of chemicals of interest. About 50% of these studies already had ethical approval to measure chemicals from collected samples.

FUNDING

HBM4EU has received funding from the European Union’s Horizon 2020 research and innovation programme (grant agreement 733032).