

INSEF-ExpoQuim: Assessing the exposure of the Portuguese population to chemicals

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BACKGROUND

Exposure to hazardous chemicals may endanger human health and pollute the environment.^{1,2} To assess and minimize the risks associated with the use of chemicals it is essential to know whether and to what extent these substances are present in the human body.^{3,4}

Here we report preliminary results of the recruitment phase in the study **Exposure of the Portuguese Population to Environmental Chemicals: a study nested in INSEF 2015 (INSEF-ExpoQuim)**.



INSEF-ExpoQuim aims to characterize the current environmental exposure of the Portuguese adult population (20-39 years old) to prioritised chemicals, namely cadmium, bisphenols and Polycyclic Aromatic Hydrocarbons (PAHs).⁵



METHODS

Study design: INSEF-ExpoQuim is an epidemiological study, whose sample was selected from the participants in the Portuguese National Health Examination Survey (INSEF)⁶ developed in 2015.

Target population: Individuals aged 28 to 39 years old, residents in Portugal, not institutionalized and able to follow an interview in Portuguese.

Sample size: Total sample size was set at 300 individuals, stratified by sex. To account for the expected response rate (approximately 40%) original sample size was inflated and all 848 participants in INSEF eligible for this study were invited to participate.

Ethical issues: Study protocol was approved by INSA's Ethics Committee and by 10 regional Ethics Committees.

Participants sign an informed consent regarding the interview, urine collection, long-term storage and use of biological samples and data for research purposes in the future.

Fieldwork: June – December of 2019. Procedures follow HBM4EU guidelines. Urine samples for determination of cadmium, bisphenols and PAHs are collected, as well as data on socio-demographic characteristics, living conditions and residential history, habits/lifestyle, nutrition, health, occupation and recreational exposure substance specific information.

Recruitment: Selected individuals receive an invitation letter and are later contacted by phone to schedule sample collection and the telephone interview.

FUNDING

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RESULTS

Until the end of September 2019, 384 of the 848 eligible individuals were successfully contacted (45,3%), of which 253 accepted to participate in INSEF-ExpoQuim (Table 1).

Table 1 – Sample size and number of contacted individual and participants per region

Region	Sample size	Contacted individuals	Accepted to participate	Participants
Norte	141	*	*	*
Centro	113	77	52	42
LVT	118	*	*	*
Alentejo	114	80	53	31
Algarve	83	59	35	21
Açores	166	133	90	58
Madeira	113	34	22	19
TOTAL	848	384	253	172

* Fieldwork will start in October 2019.

Of the individuals that accepted to participate in this study 172 have completed the telephone interview, corresponding to a participation rate of 20% at national level. Participation rates per region are shown in Figure 1.

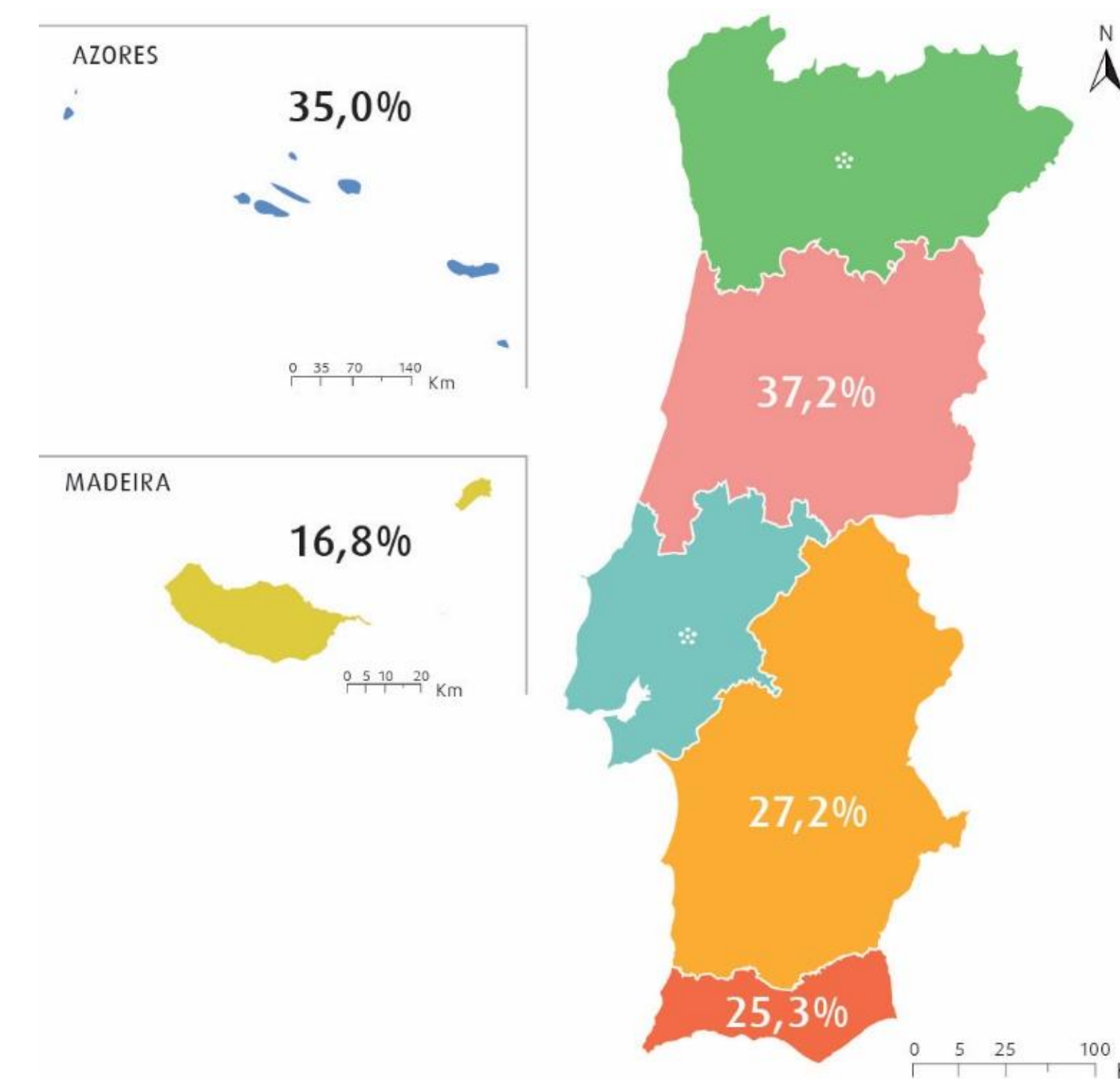


Figure 1 – Participation rates per region (*Fieldwork will start in October 2019)

CONCLUSIONS

Results from INSEF-ExpoQuim will contribute to reduce the health impact that could result from exposure of the population residing in Portugal to environmental chemicals, by producing high quality data on the actual exposure to hazardous chemicals. This will support the development and implementation of policy measures aimed at minimizing exposure to those chemicals.

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