

Breast cancer's impact in Europe: first results from the ELISAH Project



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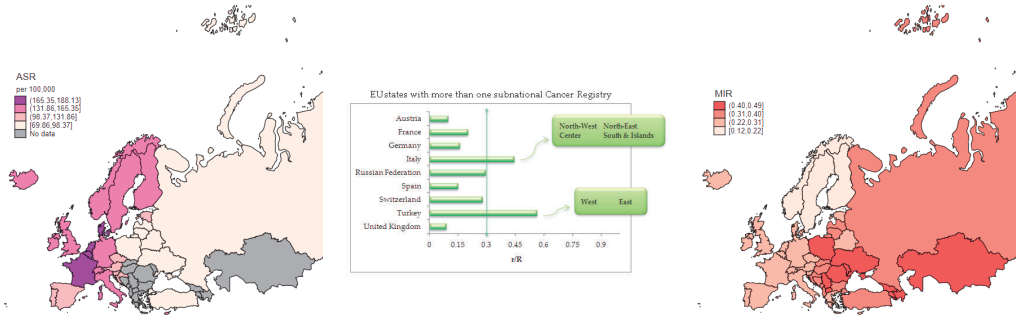
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Introduction

The European Linkage of Initiative from Science to Action in Health (ELISAH) project is a “multi-directional and holistic” initiative that aims to examine prevention across the entire spectrum of cancer control in the perspective to reduce the burden of breast cancer in Europe by acting on modifiable risk factors and involving NGOs and patient groups, following the general EU4Health agenda. Among the specific objectives of the ELISAH project, WP2 plans to map breast cancer incidence rates, risk factors, and national cancer plans, in all European States as to identify gaps in the risks to which European populations are exposed.

Results



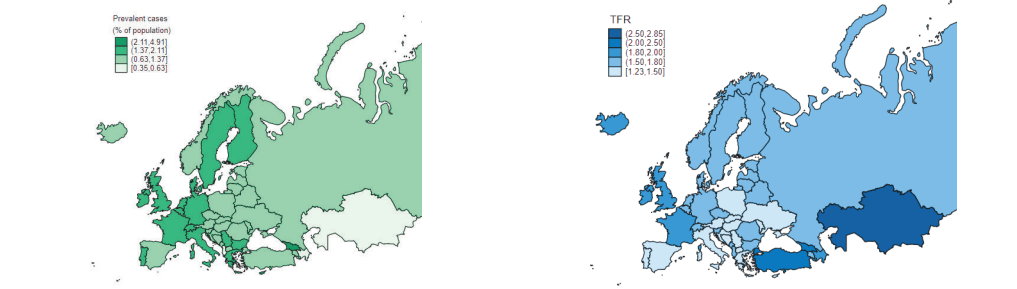
ASR. Rate of incidence from 133 Cancer Registries of 30 EU countries (IARC data, 2013-2017).
r/R index. A value above 30% indicates that at least the incidence rate of one subarea is likely to differ from the total of the area (IARC data, 2013-2017).
MIR. The mortality-to-incidence ratio can be used to identify population groups with poorer survival outcomes (GBD data, 2013-2017).

Aim

To these ends, the impact of breast cancer incidence, mortality, and prevalence, in Europe was assessed for 49 Countries and the main results are presented in this poster.

Methods

All territorial countries of the European continent were considered, including the transcontinental states. We used data from 133 European cancer registries (CRs), that contributed to the latest publication of Cancer Incidence in Five Continents (Volume XII), and from the Global Burden of Diseases, Injuries, and Risk Factors Study, 2021 (GBD) [1, 2]. The age-specific breast cancer rates and age-standardized incidence rates (ASRs) were calculated for the European population in 2013, both for IARC data and GBD data [3]. We also calculated the r/R index to estimate geographical variability for IARC data [4]. We further evaluated age-standardized mortality rates (ASMR) for the European population 2013 and the mortality-to-incidence ratio (MIR) using GBD data. We have also retrieved prevalence data from GBD and we estimated the percentage of prevalent cases on 2021 European population. The analysis also included various demographic indicators, for example total fertility rate (TFR) and other fertility-related factors.



Prevalence. Percentage of prevalent cases on female population in 2021 (GBD data).
TFR. Mean TFR in the period 2011-2022, except Andorra and Russian Federation that refer to 2010 (EUROSTAT or national statistical institute).

Discussion

Breast cancer incidence varies across Europe, with Northern and Western countries showing higher rates than Eastern and transcontinental regions. The IARC data comes from CRs and provides detailed territorial insights but does not cover all of Europe, whereas GBD data offers a broader view but based on estimation models. Countries with lower incidence rates tend to have higher MIR, indicating disparities in screening and treatment. In general, higher MIR values are observed in nations with lower screening levels. Finally, countries with prevalence rates below 1 have low incidence rates. From the combined analysis of all variables it appears that the breast cancer prevalence in European countries is closely correlated with its incidence and mortality rates. Research findings indicate that giving birth and having children at a younger age reduces the risk of oestrogen receptor (ER)-positive breast cancer, while having a first child at an older age or remaining childless are risk factors. Recent studies suggest that known fertility-related risk factors differ depending on the molecular profile of the tumour cells, in particular hormone receptor status. In conclusion, this first phase of the study highlights important differences in the impact of breast cancer in terms of incidence and mortality, reaffirming the importance of prevention. As observed in countries with regional and/or provincial CRs, internal geographical differences are not negligible. However, the lack of access to more detailed territorial data has limited in-depth analyses in countries covered by national CRs. CRs remain the most precise and detailed source for epidemiological data and ensuring researchers have access to them is essential for estimating the impact of a disease such as cancer, identifying significant geographical patterns and developing targeted prevention strategies. Only through greater data sharing and availability can healthcare policies be refined and intervention planning be improved at both local and national levels.

References

[1] Cancer Incidence in Five Continents, Vol. XII, <https://ci5.iarc.fr/ci5-xii/>
[2] Global Burden of Disease, 2021, <https://ghdx.healthdata.org/gbd-2021>
[3] Eurostat. Eurostat Methodologies and Working Papers. Revision of the European Standard Population - Report of Eurostat's Task Force - 2015 edition.
[4] Crocetti E, Giusti F, Martos C, Randi G, Dyba T, Bettio M. Variability of cancer risk within an area: Time to complement the incidence rate. Eur J Cancer Prev 2017;26:442-6. <https://doi.org/10.1097/CEJ.0000000000000389>.

Acknowledgements



For more information about the project, visit the official site (www.elisah.eu)