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THE IMPORTANCE OF MULTISCALAR CONTEXT IN MEDICAL GEOGRAPHY

Case study: IASI MUNICIPALITY

PHD THESIS SUMMARY

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Abstract

In the context of globalization, which apparently favors developed countries while maintaining significant gaps with developing countries, the issue of population health and the quality of medical infrastructure is a subject of real interest. The increase in life expectancy, the growing disparities at all scales of analysis and the evolution of the concept of health as a whole led to a complex approach to medical geography. Initiated in 2018, this scientific approach took on new dimensions during the SARS-CoV-2 (Covid-19) pandemic, which demonstrated the fragility of global healthcare systems and the authorities' limited capacity to react to unpredictable situations that can lead to loss of life. Medical geography studies that explained the spatial distribution of virulent diseases were brought back into the debate, to the detriment of cutting-edge research that focused more on health improvement or ageing. The idea of a work on medical geography was born from the low interest in this field at national level, despite the fact that health is a vital social variable, any deficit in this domain can significantly constrain human potential in every respect.

The study was based on the premise that a topical geographic study must respond to a contemporary problem, be of practical use in academia and the public-private sector, and capture realities on the grounds that are often ignored by public health policies.

*How important and necessary is the study of population health from a geographical perspective?
How topical is the study of medical geography in today's globalized world?*

These questions have certainly become more important during the period of the SARS-CoV-2 pandemic, as we have seen that poor health affects society as a whole and lack of access to health care and early diagnosis greatly decreases life expectancy and even quality of life.

The Importance of Multiscale Context in Medical Geography. Case study: MUNICIPALITY OF IAȘI is structured in 5 chapters: *Introduction, Research Methodology, Literature Review and Synthesis, Case Study on the Geographical Relevance of the Medical Function, Medical Polarization* and has as a starting point the achievement of the proposed objectives.

In the first chapter titled “Introduction”, I have presented some ideas about the structure, the aim, and the objectives of the proposed study.

In the second chapter we presented the methodological framework of the proposed scientific approach: approaches, principles, methods and geographic means, multivariate analysis, stages of geographic research, data-metadata structures and their processing, justification of the choice of statistical models used, socio-demographic and economic indicators analyzed, methodological limitations of the study.

Chapter III, “Review and synthesis of the literature”, deals with the theoretical background of the thesis and situates the topic in the field of medical geography. It mentions the most important studies that have been the basis for the conceptualization of medical geography as a sub-branch of geography, at international and national level and the main concepts used in the study of medical geography: medical geography - Health Geography, Health Status, Public Health, Quality of Life, Disease Status, Medical Function, Medical Polarization.

Chapter IV presents a multi-scalar analysis of mortality by causes of death and health care between 1990-2017 from a global perspective, an analysis of mortality trends by causes of death and health care at the European level, an analysis of the dynamics of premature mortality in Europe between 1990-2015, an analysis of the health status of the population in the European Union analyzed in terms of healthy life years and access to high quality health care, an analysis of mortality trends by main causes of death in Romania (1990-2023) and a study on the challenges posed by the Covid-19 pandemic at global and national level. The purpose of this chapter is to capture regional typologies and disparities evaluated according to certain socio-demo-economic indicators less commonly used in the literature and to show Romania's place in a multiscale context, from the perspective of the topic studied. The spatial distribution patterns of causes of death in Romania are intended to illustrate the importance of multiscale studies that also include the local level of analysis.

In the last chapter, a case study on the municipality of Iași, the largest urban centre in Moldova, an important medical and university center has been conducted. The aim of the case study was to highlight the importance of the evolution of the medical function of the municipality of Iași, to

highlight the contribution of the medical function in structuring a functional profile specific to large urban centers, to identify functional medical areas specific to the municipality of Iasi, to analyze relevant indicators in shaping the medical function in the municipality of Iasi and to capture the medical polarization in the municipality of Iasi induced by the large specializations through the analysis of patient flows (19- 98,621 patients for 2019) from specific medical units.

The entire scientific endeavor has been built on specific objectives linked to working hypotheses leading to the fulfilment of the overall goal:

O1: Founding the methodological framework of the study and reviewing and summarizing the literature, in order to substantiate the theoretical framework of the paper, based on the current knowledge of medical geography studies at international and national level.

I1: The development of medical geography as a branch of human geography is underpinned by both theoretical and practical rationales (Objective 1, Chapters 2,3).

O2: Highlighting regional spatial structures, from a spatial and temporal geographical perspective, in a multi-scalar context, between 1990-2017.

I2: The distribution, intensity and frequency of causes of death associated with a wide range of diseases and the socio-economic implications for global and European health care are shaping highly regionalized spatial structures that could be correlated with the quality of the health system in particular countries (Objective 2, Chapter 4).

O3: Highlighting spatially and temporally differentiated manifestations of the evolution of Covid-19 infection at global and national levels.

I3: The spatially and temporally differentiated manifestations of the evolution of Covid-19 infection have been influenced at the global and even national level by other favoring or restricting factors (Objective 3, Chapter 4).

O4: A more complex analysis of the dynamics of mortality by cause of death at national level, taking into account the correlation between the main pathologies causing death identified at national

level and a series of socio-demographic indicators that capture the quality of the health system, the standard of living or the level of education.

I4: The distribution, intensity and frequency of causes of death associated with certain diseases and the socio-economic implications for health care are shaping strongly regionalized spatial structures at national level that could be correlated with the quality of the health system, the standard of living or the level of education. (Objective 4, Chapter 4).

O5: Analysis of the evolution and contribution of the medical function of the municipality of Iasi in structuring a specific functional profile and highlighting its role as a polarizing medical pole at the national level, and especially in western Moldova.

I5: Iasi municipality can be considered as a regional medical center due to the evolution of its medical function, its concentration and the influence it exerts in general at national level and in particular on western Moldavia (Objective 5, Chapter 5).

The study appropriately integrates qualitative and quantitative research methods, using advanced statistical techniques (multivariate analysis models) and GIS mapping that facilitates the visualization of statistical information. The quantitative and qualitative data used are original, especially those used for the case study on the municipality of Iasi. In this way, the work contributes to the enrichment of the informative material necessary for medical geography or interdisciplinary studies.

In this interdisciplinary context in which we have placed this study of medical geography, I believe that we have succeeded in capturing from a geographical perspective the essential role of analysis in conceptualizing, investigating the importance of space and place and how public health policies can be improved to increase life expectancy and decrease the risk of premature death.