

GEOGRAPHIC MEDICINE: AN INTRODUCTION

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Keywords: health geography, development, environment

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Summary

This chapter has a double purpose. Firstly, it will introduce the four contributions which make up this topic. Secondly, it intends to tackle various other features. After having considered the evolution of the concept of health geography, some major actual problems are illustrated. These are population-related aspects (such as urbanization, ageing, migrations) and the broad topic of development and health. In the conclusion we enumerate main current research trends.

1. Introduction

In this chapter we shall first give a more precise definition of the concept of geographic medicine (versus geography of health). Then, in a broad statement we shall justify the choice of the related chapters of this topic. Finally we shall comment on other broad themes tackled in geography of health.

"Geographic Medicine" can be defined as the geographical perspective of health and disease. This means the analysis of spatial distribution of health linked phenomena such as the spread of disease and mortality, but also the location of health care facilities. The analysis of the spatial distribution includes the mapping of the statistical data and the analysis of spatial patterns. Exploring explanatory hypothesis involves the search of

links with environmental factors in a broad sense, as well physical as human induced.

2. Topical Highlights

The four chapters of this topic on "geographic medicine" illustrate some main research trends. Firstly, J.M.Amat-Roze overviews major items of geography of health today focused on health disparities in the perspective of globalization and fragmentation. In the chapter on geography of health care systems, D.R. Phillips, M.W. Rosenberg and K. Wilson tackle the problem of location of medical services covering the hierarchy from basic care at the bottom to university hospitals at the top.

Environmental change is a key issue with regard to the spread of vector borne diseases and its evolution. The impact of these changes has been analyzed by the technique of remote sensing and spatial analysis by S. Van Wambeke and E. Lambin. Chagas' disease (the American sleeping sickness), will be presented as an example of endemic disease from the viewpoint of bio-environmental correlates by S. Curto.

2.1. Health Disparities, as a Reflection of Globalization and Fragmentation of the Contemporary World

J.M. Amat-Roze describes the most striking features of the recent evolution of the health picture of the world. Among the positive trends, we note the eradication of smallpox, the control containment of river blindness (onchocerciasis) and above all the remarkable increase of life expectancy. On the other hand we have to ascertain the re-emergence of well known diseases, such as malaria, tuberculosis, diphtheria, sleeping sickness, etc, mainly caused by the deterioration of health conditions and lack of control. Another negative feature of the global health evolution is the emergence of new pathologies: HIV-AIDS, Ebola, SARS, just to name a few of them.

Specific health threats are becoming widespread on a world scale. Diabetes, hypertension, obesity, linked to "westernized" life styles are extending beyond the "rich countries", leading to a globalization of chronic diseases.

J.M. Amat-Roze emphasizes the convergence of the relationship between poverty and health status in all societies. Health disparities are no longer limited to the dichotomy developed/developing. This is another feature of globalization. Besides major socio-economic features, other disparities have to be considered, such as gender-based disparities, spatial disparities (e.g. between nations, between regions within countries).

Gender-based disparities mean male-female differences in life expectancy. On a whole male life expectancy at birth is lower. The highest gap occurs in Russia where the difference reaches fourteen years. On the contrary, in those regions where conditions of reproductive health are unfavorable, it is the reverse, due to high maternal mortality. Statistics indicate that every year half a million of women die due to maternal mortality. The rates are high in Sub-Saharan Africa. This is also true for infant mortality. HIV/AIDS prevalence is particularly significant in Southern Africa.

While the poverty level is decreasing in Asia, the situation in Sub-Saharan Africa still

remains problematic.

2.2. The Geography of Health Care Systems

D.R. Phillips, M.W. Rosenberg and K. Wilson are the authors of the second theme concerning the geography of health care systems. The evolution of the concept and the access to health care services are analyzed. There is a growing complexity of both health care systems and access to health care services. Access to and utilization of health care services depend on several variables: geographic (measured in time and distance according to infrastructure and means of transportation), economic (financial) and socio-cultural. In some States health care systems are no longer "national", as health is the responsibility of other administrative entities (for example provinces). Some health measures necessitate international collaboration (e.g. in case of world epidemics). Alternative and traditional medicines add to the complexity of health care systems. Trajectories for health care systems are changing (for example the evolution towards group practices). Deinstitutionalization in mental health care is taking place. The restructuring of health care systems is going on. New spaces of health care delivery are defined. In developing countries fewer resources are available for rural areas than for big cities. Moreover the structural adjustment programs (SAP) have often led to cutbacks in the health expenditures, while HIV/AIDS is a growing challenge.

2.3. Environmental Change and Vector-Borne Diseases: The Contribution of Remote Sensing and Spatial Analyses.

In the third part of this section the big issue of environmental change and vector-borne diseases is discussed by S.O. Vanwambeke and E.F. Lambin. Vector-borne diseases still represent an important share in the total health situation. Mosquito-borne diseases cause the highest number of victims, of which malaria is the main cause. Also leishmaniasis, trypanosomiasis, dengue may be considered as re-emerging. Vector-borne diseases are directly linked to the environment through the ecology of the vector, but also through the human habitat (cf. housing and Chagas' disease). The question of climate change has been debated. All environmental modifications (including land cover changes) should be taken into account as they are interwoven. This complex relationship of close ties can be synthesized in a conceptual model linking landscape, people and vectors. The landscape reflects the spatial activities of a society. Interaction between human activities and the environment determines the contacts between host and vector. Remote sensing techniques have been applied for studying the spatial distribution of vectors. The use of GIS (Geographic Information System) enables to link remote sensing data to field observations and to socio-economic information.

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Biographical Sketch

Yola L.G. Verhasselt has a doctorate in science. She is professor emeritus at the Free University of Brussels. Her special field of research is the geography of health. She has wide experience of developing countries.

Professor Verhasselt has been president of the Commission on Health and Development of the International Geographical Union. She is honorary permanent secretary of the Royal Academy of Overseas Sciences of Belgium. She has been an officer of the International Council for Science (ICSU) and is currently a trustee of the International Foundation for Science (IFS). For several years she was director of the WHO Collaborating Center on Spatial Health Modelling.

Yola Verhasselt is a member of several academies and learned societies, a member of the editorial board of scientific journals, and the author of more than 120 scientific publications. Dr. Verhasselt has been awarded the Prix Rahir of the Royal Belgian Society of Geography and received the Lauréat d'Honneur of the International Geographical Union.