

## GEOGRAPHY OF HEALTH AND MAPPING IN NIGERIA

### Cartographie et géographie de la santé au Nigéria

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#### RESUME

*Après un long monopole du monde médical pour les études relatives à la santé au Nigéria, l'intérêt des géographes s'est éveillé à la fin des années 70. Leur intérêt s'est porté essentiellement sur :*

- *la localisation et l'affectation spatiale des ressources,*
- *l'écologie des maladies et les études de diffusion,*
- *la distribution et l'utilisation de l'équipement sanitaire.*

*L'outil principal du géographe qui est la cartographie est devenu impératif pour une analyse sérieuse. Elle permet l'identification des zones à haut risque de certaines maladies et parant, la répartition spatiale de l'équipement sanitaire nécessaire. Elle met aussi l'accent sur les effets des facteurs socio-domestiques dans une évolution différentielle d'une maladie.*

*Toutefois, les méthodes utilisées actuellement au Nigéria pour la recherche cartographique dans le domaine médical ne sont encore qu'exemplatives. C'est ainsi que dans les centres urbains, l'habitat et l'hygiène de l'environnement sont des facteurs très importants. De nouveaux progrès sont donc souhaitables pour que la cartographie puisse contribuer à une planification en matière de santé.*

#### ABSTRACT

*After a long monopoly of the medical practitioner for the studies relating to health in Nigeria, the interest of geographers took root in the late 1970s. The areas of interest are largely :*

- *location/allocation of health resources,*
- *disease ecology and diffusion studies,*
- *distribution and utilization of health facilities.*

*The use of the geographer's basic tool, that is mapping has become imperative in the various analyses. The use of maps has been in the area of identification of high-risk areas of specific diseases besides depicting distribution patterns of health facilities. They also highlight the variations in the socio-domestic environmental factors that seem to promote differentials in disease incidence.*

*However, the cartographic methods employed by the Nigerian medical geographers are presently for illustrative purposes. The disease picture, especially in the urban centres, relate more to housing and environmental sanitation. Hence, more*

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*dynamic cartographic techniques are required by the medical geographers to make more meaningful contribution in health planning for the country.*

## INTRODUCTION

During the colonial period, especially in the 1930s and early 1940s, the close interrelationship between the environmental (geographical) factors and the high prevalence of certain devastating diseases (e.g. trypanosomiasis) was realised (PROTHERO, 1983). Indeed, the colonial administration organized epidemiological surveys specifically to investigate the spread of certain diseases such as trypanosomiasis in Nigeria (NASH, 1944, 1948). Such surveys focused mostly on the role of the environmental factors and the population variable on disease incidence.

In spite of the fact that the Nigerian health landscape demonstrates profound impacts of various geographical factors, studies and issues relating to health were before the 1970s, dealt with mainly by medical practitioners and other scientists to the exclusion of geographers. Nonetheless, some changes have become apparent especially now that there are a few indigenous medical geographers and other geographers who utilize medical data in their various analyses.

The main objective of this paper is to attempt to highlight the role of geographers in health issues in West Africa, using Nigeria as a case study. The paper illustrates the significant contributions which geographers have made and could make as imprints of their actual and potential roles in solving health-related problems. To achieve this objective, the Nigerian geographers more often than not have adopted the use of cartographic techniques as the most important methodological strategy.

This paper, therefore, starts by highlighting the fact that physicians and other scientists especially entomologists initially usurped the geographers' roles by utilizing geographical factors to analyse disease issues. The present paper therefore depends on a brief review of research and studies done in areas of medical geography and personal observations.

## NIGERIAN GEOGRAPHERS AND THE USE OF HEALTH-RELATED DATA

There are about three categories of Nigerian geographers that concern themselves with analyses that relate to health matters. There are those who utilize medical data especially data on the location and allocation of health resources and medical records on child nutrition and disease ecology (OKAFOR, 1977; UYANGA, 1981; SULE, 1981). Such researchers are more interested in questions that concern spatial efficiency, equity and social justice (OKAFOR, 1979, 1987). While OKAFOR, for instance, is more concerned with location/allocation problems to answer questions on efficiency and social justice (OKAFOR, 1987), EGUNJOBI (1977, 1983) is more interested in the characteristics of health care resources and their implications for Regional Planning.

By the late 1970s, another category of Nigerian geographers received formal training in medical geography. Presently, they are quite few in number, but strong enough to raise their voices.

Since the early 1980s, courses at both undergraduate and post-graduate levels in a few Nigerian Universities have been introduced. This third category of Nigerian geographers have indeed produced some dissertations that are now available in such Universities.

### RESEARCH IN GEOGRAPHY OF HEALTH IN NIGERIA

By and large, research efforts in medical geography in Nigeria have concentrated on three major areas. Firstly, some geographical analyses have been done on distribution and utilization of health facilities within the country. Such studies range from analyses of the spatial efficiency of the various health facilities (OKAFOR, 1977) to the identification of factors that bring about variations in the utilization of such facilities (EGUNJOBI, 1983; IYUN, 1983).

The second and third areas of research by medical geographers tend towards achieving similar overall objective of identification of high-risk areas as well as offering explanations for planning purposes. With respect to the second area of research, the focus is on disease ecology especially in the urban environment (IYUN, 1978, 1984, 1985, 1987; SULE, 1981; UYANGA, 1981). The major interest here is to highlight how the socio-domestic and cultural factors as well as environmental factors,

in particular, factors relating to housing, water supply, refuse disposal, exert some significant influence on the health of Nigerians.

Also, a significant study on disease diffusion in respect of cholera epidemic in Ibadan has tried to highlight the spatial characteristics of the cholera spread as well as identification of the diffusion waves (ADESINA, 1979, 1981).

Before this section is concluded, it must be mentioned that indigenous researchers engaged in geography of health have also gone a step further to interact with physicians, health planners and other health workers. SINCE, 1984, such workers have taken active parts in health planning, in particular, the implementation of Primary Health Care (PHC) in which they served as resource persons.

#### THE USE OF CARTOGRAPHIC TECHNIQUES IN GEOGRAPHY OF HEALTH IN NIGERIA

As can be observed from this short paper, medical geography is still in its infancy in Nigeria. Most of the achievements made by geographers working in this field in the country still relate to the state-of-the-art of the disease landscape. Within a relatively short time, some baseline data on morbidity, epidemics, etc. have been provided. However, the cartographic methods employed by the key researchers have helped to provide geographical expressions of the disease landscape of some parts of the country. Such illustrations (maps) have helped to highlight the important contributions that geographers can make on issues that relate to health and disease.

Of particular importance in this respect are the works of IYUN (1978, 1984, 1987) and ADESINA (1981) in the area of disease ecology and diffusion studies respectively.

This author came out with a series of maps in 1978 to illustrate the spatial variations of the ten top diseases in Ibadan City (YIUN, 1978). Simple choropleth maps were utilized to provide geographical expressions of some diseases in the former largest Black City in Africa. The attempt was made to provide visual baseline data that could be more convincing than statistical tables to the health workers. By so doing, high-risk census tracts of the City were identified.

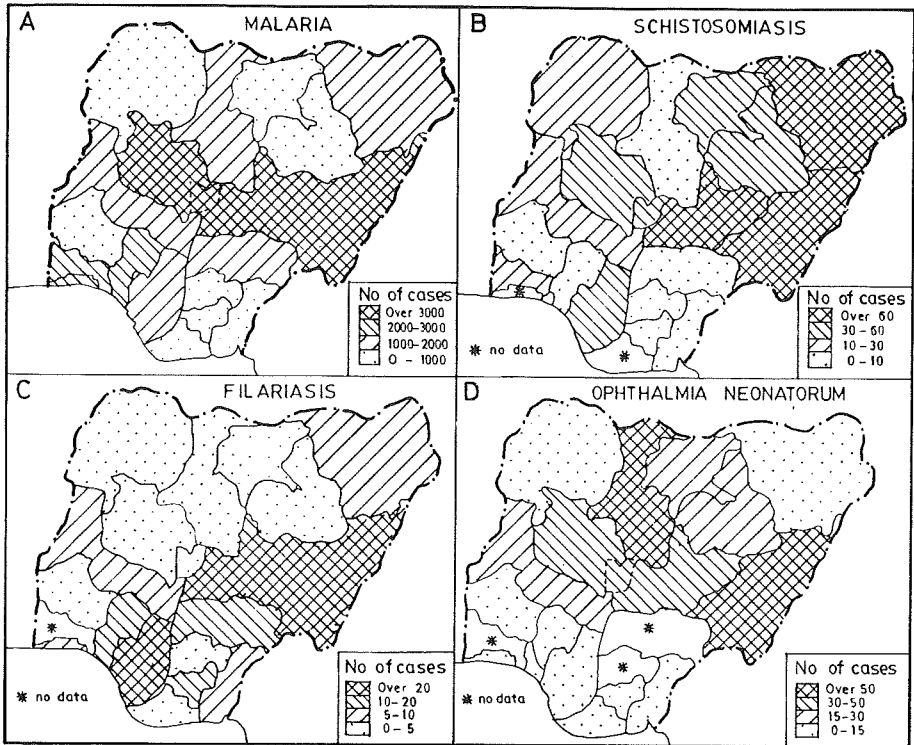


Fig. 1 : Weighted averages of reported cases per 100.000 persons - Vectored diseases and ophthalmia Neonatorum

For the same purpose, ADESINA (1979) also based his doctoral thesis on the cholera epidemic in Ibadan that had attracted the attention of medical practitioners working in the City. However, ADESINA's work was unique in that the spatial characteristics of the cholera spread, the waves of the processes involved were clearly illustrated in ward maps and diagrams.

The present author has also carried out other important studies on chicken-pox (19484) and tuberculosis (19484) incidence in Ibadan City. The emphasis has been to give geographical (visual impressions) of specific disease problems in the City and to relate these to specific housing and environmental sanitation problems which bear spatial components of the health problems.

One of the most recent works of the author, "Ecology and Disease in Nigeria", also utilized several maps as illustrated in Figures 1 and 2 at the National

level and several illustrations to bring into focus, the role of some geographical or environmental factors in the incidence of certain diseases (IYUN, 1987).

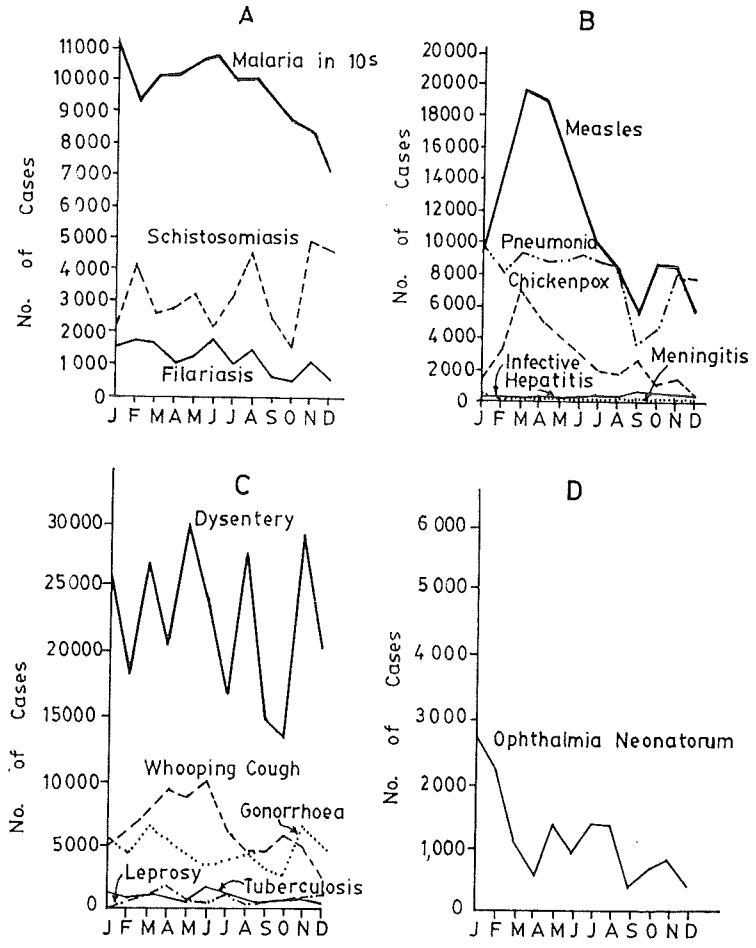


Fig. 2 : Monthly distribution of the major diseases, 1982

## CONCLUSION

In conclusion, most of the cartographic works produced by the Nigerian medical geographers are concerned more with disease mapping. On the other hand, very little has been done in producing maps that focus on the major environmental factors that bring about spatial variations in disease incidence in the country.

One major setback in the use of cartographic methods by the Nigerian medical geographers is the inadequacies and problems that relate to reliability of the baseline data that are required. Even though, it is appreciated that many of our disease problems relate to housing, water supply and environmental sanitation, the background information for the preparation of such maps cannot be solely provided by the medical geographer.

Thus, an integrated effort is required for the development of more dynamic cartographic technique in the solution of health-related problems in Nigeria. Such maps are required to 'open up' the eyes of medical practitioners and other health workers. This is necessary to enable them appreciate the need to adopt an interdisciplinary approach to health planning. LIKEWISE, such an approach is needed in the area of eradication of some of the most prevalent diseases whose 'cure' has eluded the basic medical therapy despite huge amounts of money already expended by the various Nigerian governments.

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