Epidemiology and Anthropology: an Integrated Approach Dealing with Bio-Socio-Cultural Aspects as Strategy for the Control of Endemic Diseases

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The control of endemic diseases has not attained the desired level of effectiveness in spite of the use of modern efficient thecnologies. The classic interventionist approach for the control of schistosomiasis is centered on systemic control of the snail hosts combined to large scale medical treatment and is usually carried out without social preocupation due to the assisted communities. It is easy to understand the interest and the ethical compromise of public health research while producing studies in which the biological and social determinants as well as the cultural components should be considered and also encompass the historical dimensions and symbolic representations. In face of the recent political decision in favor of decentralizations of health administration to municipal level, we suggest, in the present paper, an integrated approach for the epidemiological diagnosis of an endemic situation at local level. Theoretical and methodological aspects from both, epidemiology and anthropology are discussed. Epidemiological methods can be used to detect the dependent variables (those related to the human infection) and the independent variables (demographic, economic, sanitary and social). Another methodological approach of anthropological /etnographic nature can be conducted in order to make an articulation of the knowledge on the various dimensions or determinant levels of the disease. Mutual comprehension, between researchers and the people under investigation, on the dynamic transmission process would be relevant for a joint construction, at local level, of programmed actions for the control of endemic diseases. This would extend reflections on the health/disease process as a whole.

Key words: epidemiology - anthropology - endemic disease control

THE PROBLEM

Programs for the control of the endemic, even when carried out using efficient technologies, in general have not attained the desired efficacy. This is due to the fact that are implemented under centralized, interventionist and medicalized logistics. In addition, such programs are implemented uniformly for different endemic regions. The operational actions are usually limited to the use of pesticides and the medical treatment of infected persons.

In the case of schistosomiasis, recent studies have shown the stability of endemic rates in some localities of the sugar-cane zone of the State of Pernambuco in spite of repeated medical treatments of the population and the use of molluscicides (Barbosa & Barbosa 1997). An experimental control study in limited areas of Pernambuco was able to keep prevalence rates to low levels during the control period. After this period the prevalence rates returned to the original figures within a short period of time (Pieri 1997).

Continuous schistosomiasis reproduction cannot be understood, nor interrupted, by means of single biological approach, but should be understood in its social-cultural context as a process capable of producing an epidemiological structure containing several determinant levels for its occurrence. Biological, social, political and cultural factors contribute together in the formation of specific endemic profiles.

The structural process of schistosomiasis production occurs within a socially constructed space and is expressed in terms of the life conditions of the populations. The way this space is occupied ensures the reproduction of the endemic and the inequal distribution of the different risk groups.

It is of paramount importance to have a knowledge of the local context of the micro level, or in other words, the local peculiarities such as differentiated practices of risk, local sites of active transmission and popular disease perceptions. This conditioning level has high social significance in a way

Supported by Programas de Pequeñas Becas - TDR/OMS
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Received 4 May 1998
Accepted 31 August 1998

that shapes the behavior of individuals or groups making them assume preventive or risk practices in the transmission of infectious diseases (Laurrell & Gil 1975).

Recent political decisions favoring the decentralization of control of the endemic allows the municipal authorities to plan the health policies in accordance to the local needs. This makes the effective use of the community health workers, possible.

With regard to the present process of municipalization and attending the needs of the local health services, a project was developed with the aim of evaluating an epidemiological situation, at local levels, in a schistomiasis endemic area (Barbosa 1996). This project was carried out under theoretical and methodological principles proper to epidemiology and anthropology disciplines. The methodological design of this project is the object of discussion in the present paper.

THE RACIONAL

The epidemiological research, based on a risk model, understands the causal explanation of a morbid issue as synonymous of independent associations between one or more risk factors and disease. The group, understood as the whole of the individuals, are used as a means of demonstrating independent associations among characteristics or requisites defined in terms of individuals and diseases, without taking into account the historical nature and social-cultural health problems. Owing to these limitations, the possibility of learning and explaining phenomena of an essentially collective nature are lost (Albuquerque 1995).

By considering individuals as independent statistical units, one completely ignores the existence of social relations under which the representations, the behavior, the knowledge, and ways of life are produced (Goldberg 1990).

However, the limitations of the epidemiological method do not invalidate its operational practice in building morbidity and mortality rates indicating the identification and distribution of the diseases. Epidemiological methods, as a whole, are able to enhance the identification of diseases causes, giving support to the decison-making process in planning and programming the actions for health protection (Sabroza & Leal 1992). On the other hand, they cannot provide the necessary components for comprehension and explication of causes that maintain the endemic levels. This impediment limits the interventions aimed prevention and control of the disease.

Much has been said on epidemiological and anthropological integration for the comprehension of health/disease process. Although the above disciplines do not share basic concepts and theories, they possess clear insertions in their methods and instrumental research technics that when used together, may characterize mediator processes for the several levels which determine the endemic. Social scientists and epidemiologists can be qualified in the construct and methods of both disciplines, with the purpose of holding under cultural views the pathologic process of the somatic events (Dunn & Craig 1986).

Epidemiology defines the diseases having as reference the abnormalities found in the structure and functioning of the organs and the external inference of the casuality. Epidemiologists are preoccupied with who, where and when in relation to the pathologies under investigation.

Medical anthropology is a bio-cultural discipline that deals with the biological aspects and the social-cultural components influencing the health/disease process (Helman 1994). The discipline goes deeper trying to understand the interactions of both of the above mentioned aspects. Taking into account the individual experience, anthopologists look for the why of the disease.

Thereafter, both disciplines try to understand the distribution and causal factors of the disease with regard to human populations. Although epidemiologists use specific designs and methods for investigation, the means of data collecting tend to be familiar to anthropologists. This frequently allows specialists in both scientific fields to attempt to integrate of their knowledge (Ingeborg & Kromhout 1987, Inhorn & Brown 1990, Uchôa & Vidal 1994, Inhorn 1995).

It is as important for epidemiologists to understand the complex nature of the human behavior, as it is for anthropologists to recognise the powerful models used in epidemiology for identification of the cause/effect disease patterns. Thus, medical anthropological investigations are covered by these complementary theoretical and methodological components, which are needed when planning health actions (Dunn & Craig 1986).

Events linked to health/disease should be approached from the views of an structural epidemiological process. According to an articulated perspective, both the biological and social determinants deserve to be considered as casual attributes (including their environment and social - economic stratification) without forgetting the cultural component in its historical dimensions and symbolic representations.

Taking schistosomiasis as an example, we understand that there are great number of factors and processes (politically and culturally determined) that can be exhibited as “schistosomiasis” and ingenuously presented simply as a disease produced

by one parasite transmitted by fresh-water snails.

Based on the above principles, the methodological design that follows was put into operation by the project mentioned earlier in this paper (Barbosa 1996)

MATERIALS AND METHODS

An epidemiological cross-section study carried out in a small village in the State of Pernambuco, allowed the identification of the risk factors for schistomiasis, associating the social-economics, sanitary and behavior variables (quantified ones) with prevalence and intensity of the infection. The main methodological instrument used in this type of study was a closed questionnaire, which was basically produced with those quantifiable variables suggesting possible casual factors. As result of this, a rapid, although incomplete epidemiological diagnosis for the local research area was performed.

To obtain a deeper comprehension of the structural and dynamic aspect of the disease transmission process, qualitative methodology, based on anthropological and ethnographical concepts (Minayo 1993), was used. This allowed analysis at the local cultural aspects of the endemic and the analysis of the macro and micro determinants involved in the endemization process. It was than possible to recover informations concerning perceptions, beliefs, attitudes, risk behaviors and prevention concepts of the local inhabitants in relation to etiology and disease transmission. This qualitative approach was performed through participating observation technique, open or semi-structured interviews and group discussions (Barbosa & Coimbra 1998).

The design of this type of study allows the interaction between the epidemiological quantitave data with those collected by means of the ethnographic-anthropologic work. Moreover, such a study makes it possible to perform a more indepth and consistent final analysis of the transmission and maintenance of the determination and risk behaviors. The superficialities of the collected variables are broken and the information within the social context where they are enclosed can be evaluated.

DISCUSSION

The academic challenge of this working proposal was the comprehension, in its possible totality, of the process of transmission and maintenance of an endemic, such as schistosomiasis, having as a starting point the articulated interpretation of the bio-ecological and social-cultural elements as they were worked. This was oriented using the theory and practices of two different complementary scientific disciplines. The methodological construction of this proposal took into consideration the possible dimensions of determination of a specific endemic situation, giving emphasis to the qualitative analysis of the collective speech in relation to disease and the social-working relations of the community.

The understanding of the reality of an endemic situation, by the use of these two analytical methods, was considered the best option to permit a holistic and more human conception of the endemic process. The comprehension of the determinant elements of the morbidity process, quantified and observed, was amplified, complemented and enriched.

This integrated model for the analysis of an endemic situation proved to be capable at providing a fairly good knowledge of the health problems of small communities. This makes it possible to point out the social and public health measures needed for the control of the transmission of the endemic. On the other hand, the practical viability of this methodology indicates its usefulness in decentralized projects for the control of endemic at municipal level. In addition, it will help to improve the analysis and will promote discussion of joint solutions which involve co-operation between public health technicians and the community members.

We wish to emphasize that in discussing the role of the community in their health/disease process we are not excluding or minimizing the role of the state in its responsibility concerning the control of the edemic. The State of Pernambuco, as an example, centralizes public services such as FIBGE (Brazilian Foundation and Institute of Geography and Statistics) and CONDEP (Developing Council of Pernambuco). These institutions are responsible for the systematization of demographic, social-economics and sanitary (among other) data distributed by counties and smaller localities. This allows the counties to have access to those data and information on the specific field of public health. Data on sanitary conditions within the localities could be considered a local environmental risk indicator of schistosomiasis. This indicator when paired to an epidemiological indicator such as infection rates, available from data locally collected by the National Health Foundation - FNS, would give support to the basic network of the municipal health services in the planning and developing of specific intervention measures. Obviously, localities showing environmental risk indicators allied to high schistosomiasis prevalence rates, would deserve higher priority. Qualitative evaluation would allow the identification of specific epidemiological and anthropological aspects which would be used to develop the intervention

practices which would be discussed with the community.

Even so, regarding the state commitments, we accept that emergency actions and those against the snail vectors, when needed, would be better rationalized at this operational level. The State Vigilance System, in close integration with the municipality, could contribute by providing norms and enlarge the endemic areas in the search for incident cases.

Finally, this proposal was built over a social reality and a concrete political posture. Fernand Braudel, historian and scientist of the French School of Annales, says with much promptness: "... research should be always conducted from the social reality to the model, from this to that, and so on, following by touching sequences and patiently renewed journeys" Sevalho (1997).

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