

Changing Nature of Anthropological Research Design in Understanding Health and Diseases: an Overview

CHANGEMENT DE NATURE DU MODÈLE DE RECHERCHE ANTHROPOLOGIQUE DANS LA COMPRÉHENSION DE LA SANTÉ ET DES MALADIES:

UNE VUE D'ENSEMBLE

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Abstract: The increasing involvement of anthropologist in health issues has intensified debate concerning the substantive contributions to be made by this discipline and the types of strategies to be encouraged by its professionals in the promotion of culturally appropriate public health programmes. There are many ways of approaching the problems of health and disease in a population. Anthropological investigations tend to focus conceptually on the complex changes in patterns of health and disease and on the interactions between these patterns and their biologic, sociologic and demographic determinants and consequences. This paper is an attempt to explore mainly on the analytic anthropological research paradigm in the understanding of health problems in cross-cultural settings.

Key words: Research method, Public health, Analytical epidemiology, Biomedical model. Etiological Continuum

Résumé: L'implication accrue du nombre d'anthropologistes dans les affaires de santé avait intensifié le débat concernant la contribution substantielle que cette discipline pourrait faire et les types de stratégie que les professionnels pourraient encourager dans la promotion des programmes de la santé publique culturellement appropriés. Il existe plusieurs moyens d'aborder les problèmes de santé et de maladies d'une population. Les investigations anthropologiques tentent de focaliser sur les changements compliqués dans les modèles de santé et de maladie, ainsi que sur les interactions entre ces modèles et leurs déterminants et conséquences biologiques, sociologiques et démographiques. Cet article est une tentative de trouver un paradigme de recherche analytique et anthropologique dans la compréhension des problèmes de santé dans les cadres interculturels.

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1. INTRODUCTION

The problem of health and disease have been the research concern of medical sciences for long time. The magic of medical sciences have contributed significantly in the promotion of health as well as elimination of diseases through medical intervention. The curse of epidemics and pandemics thus have been removed to a significant scale. Nonetheless, with the passage of time, the disease pattern itself in the human societies have undergone concomitant transformations, which could not be explained by western medical sciences. This disciplinary limitations essentially called for renewed attention from the health professional and researchers beyond the horizon of medical sciences.

In recent years, among the behavioral scientists, anthropologists in particular produced valuable theoretical and methodological knowledge in explaining the causality behind the changes in health patterns over time. The increasing involvement of anthropologist in health issues has intensified debate concerning the substantive contributions to be made by this discipline and the types of strategies to be encouraged by its professionals in the promotion of culturally appropriate public health programmes. There are many ways of approaching the problems of health and disease in a population. Anthropological investigations tend to focus conceptually on the complex changes in patterns of health and disease and on the interactions between these patterns and their biologic, sociologic and demographic determinants and consequences. The anthropologic epidemiological approach to health, one which is gaining wide currency in recent anthropological research, examines illness in terms of behavioral indicators along with their bio-medical implications. This essentially requires more concentration on relationship between cultural content and indigenous practices on the one hand and on the other health problems emanating from such behavioral patterning.

This paper focuses mainly on the analytic anthropological research paradigm in the understanding of health problems in cross-cultural settings. It seems pertinent in this context to provide a brief review of the 'biologicistic approach' that so far dominated in health research by virtue of its powerful remedial capability.

2. BIOLOGISTIC APPROACH

The conception of disease is essentially a biological or medical problem. From bio-medical viewpoint, 'health' is a condition of equilibrium, whereas 'illness' can be defined as the disruption of that balanced bodily state. Defining characteristics of diseases refer to biologically construed processes, and indicators of disease are constituted of data derived from the examination of the bodily structure and functioning by means of specialized procedures (Weiner and Lourie 1981). Health professionals working within this framework examine the 'causes' of a set of measurable and empirically verifiable symptoms called as 'disease', and the unit of analysis is the individual organism (patient) itself. In such biologicistic framework, health problems are studied with reference to criteria that are amenable to clinical diagnosis in western medical terms. This biomedical perspective as noted above. has been the most important aspect and organizing principle of modern medical science.

Although the specific details of the biological paradigm are outside the sphere of this paper, it needs to be mentioned that an essential emphasis in modern medical system entails hospital based curative approach, oriented to the measurement of particular symptom- complex, that is emphasis is given primarily on the abnormality in the structure or function of any system of the body and the evidence of

malfunction in the biological system serves as indicators of disease.

One practical implication stemming from this approach is that bulk of medical studies tend to seek presumed causes within the narrow limits of an individual's biology in disregard of social context in which it occurs (Fox et. al. 1970, MacMohon and Pugh 1970). Practise, habits and belief of the group are not emphasized, which are no less important factors in the pathogenesis of a health disorder. Despite invaluable contributions made by modern medical science to the understanding of the molecular and patho-physiological basis of human diseases, such a framework could hardly provide answers to the questions why and under what circumstances disease and health patterns undergo alteration in a population.

In recent years the study of health became gradually a focus of concern in other behavioral and health sciences such as anthropology. Without going for detailed discussion, the key distinguishing features of the bio-medical or biologicistic framework are presented briefly : a) In bio-medical model, the problem of investigation is "patients" in opposition to "normal subjects"; b) The "hospital setting" constitutes the core arena of research activity, in lieu of "community or society" in general; c) The main thrust is placed upon "cure" (removal of abnormalities) rather than "prevention" of maladies.; d) the researcher engages in the collection of pure biological and clinical data using medical technologies and tests in contrast to any other non-biological information from the subjects under investigation; e) "Patients" are identified by clinical diagnosis based on pure medically variable syndromes, as opposed to the application of the method of randomization; f) the procedural methodology of the bio-medical research lies in the execution of clinical method towards the collection of medically verifiable data for confirmation of the illness in question in opposition to "observational" data. Another important characteristic of the bio-medical research is the use of 'retrospective' or experimental design which emphasis on between 'case control' group, carefully selected using the matching technism of age and sex. h) the findings generated by the bio-medical research are valid and reliable placing no more speculation. i) the major drawback of this paradigm predictability of the result finding in the general population at large; j) it is toward 'curative medicine' than 'preventive medicine'.

3. COMPETING ANTHROPOLOGICAL FRAMEWORK: "ANTHROPOLOGY AND EPIDEMIOLOGICAL NEXUS"

One of the most outstanding conceptual frameworks for the study of disease that emerged in recent years is the epidemiological frame of reference. Epidemiological approach as a research paradigm emphasizes the web of relationship and interdependence of various components within the whole and markedly identifies the socio-environmental variables as the influencing factors among other variables. In a recent formulation, Zimmet and king define epidemiology as "the study of the occurrence, distribution, and the determinants of health related status and events in population, and the application of this knowledge to the control of diseases" (1985:67). The primary goal of epidemiological research in anthropological domain is to elucidate etiologial factors involved in a disease incidence; and in its emphasis on population variation in incidence and occurrence that epidemiology contrasts with clinical investigations, the latter drawing inferences from the facts observed in examination of individual patients (Roberts 1983).

Medical anthropology in broader sense attempts to specify how diseases distribute in relation to socio-cultural as well as biological factors. In addition, it seeks increased specifically in diagnosis, understanding of pathogenesis and determination of transmission, reservoir mechanism, evaluation of contributing factors, and development of measures for prevention and control (Corruccini and Kaul 1983, Corruccini and Choudhury 1986).

Anthropologists, therefore, attempt to determine, who in a particular population develops a disease, on what occasions and under what influences. Stated in a different way, it searches for the clues of

disease by studying the incidence in different groups, defined in terms of their composition, their inheritance, their experience, behaviour and environment. Seen from this standpoint, it forms one of the most important investigative perspectives in the study of health and disease.

Towards an Explanation of “Disease- Causality”

It is emphasized that identifying causal factors requires a merging of medical anthropological and analytical epidemiological perspectives- perspectives that share a fundamental concern with the causes of poor health. Although many medical anthropologists approach illness causation from the perspective of ethno medicine (e.g. Foster 1979; Young 1991). In recent years, a number of scholars have pointed to the merits of an interdisciplinary anthropological- epidemiological approach to the study of health problems (e.g. Janes, Stall and Gifford 1986, Myntti 1991, True 1990). Its focus is not on the individual case of ill health, but rather on groups of people, both healthy and diseased. When investigating a particular disease (such as lung cancer), epidemiologists try to relate its occurrence and distribution to a variety of factors, associated with most victims of that condition (such as smoking behavior), in order to discover its probable etiology (Helman, 1994). The factors most commonly examined are the age, sex, marital status, occupation, socio- economic position, diet, environment (both natural and man made) and behavior of the victims. Their aim is to uncover a causal link between one or more of these factors and the development of the disease.

While early epidemiologists focused their attention on describing patterns of disease prevalence, transmission and spread, studies conducted during epidemiology's 'boom period' (Rothman 1981) of the past 40 years tend to focus on identifying the determinants or causes of disease in defined populations (Kelsey, Thompson and Evans 1986). Analytical epidemiology, as the emerging branch of epidemiology, is specifically concerned with discovering the underlying causes of diseases in various populations, especially population manifesting levels of diseases higher than statistically normal (Kelsey, Thompson and Evans 1986).

Given the recognition of the variety of causative factors, epidemiologists have largely abandoned the term 'agent' of disease and replaced it with 'risk factor'. The purpose of analytical epidemiology is to identify risk factors and to quantify their effect on disease causation (Kelsey, Thompson, and Evans 1986). As analytical epidemiology recognizes, culturally prescribed behaviors may serve as risk factors. In fact, epidemiology like anthropology is behaviorally oriented; according to Dunn and Janes, this focus on human behavior is the "basis of the complementarity of the two disciplines". They note:

"It is the goal of epidemiology to identify and measure the relative importance of factors within the causal web of a disease or disorder. Because all diseases are caused, at least in part, by the behavior of individuals, groups, or communities, epidemiology must be a behavioral science.... Whereas epidemiology may be concerned primarily with determining the relationship of behavior to disease, medical anthropology most often focuses on the social and cultural correlates of behavior, or on the contexts of such behavior. The point of greatest possible complementarity and practical collaboration thus lies in exploring the nexus between the health consequences of behavior and the social and cultural correlates of that behavior (Dunn and Janes 1986:3)."

Anthropology's and epidemiology's mutual interest in human behavior-especially behavior that places human beings at risk of disease has been noted by a number of medical anthropologists, many of whom have specified culturally prescribed human behaviors that may be deleterious to human health (Fabrega 1974; Helman 1984; Brown and Inhorn 1990). Thus epidemiology and medical anthropology have an important task in examining the behavioral component of health problems. As Dunn and Janes (1986) note, medical anthropology's contribution in this process is the exploration of social and cultural contexts in which health-detracting behaviors are maintained.

4. DIFFERENTIAL RESEARCH DESIGNS IN ANTHROPOLOGICAL EPIDEMIOLOGY

Two basic types of research designs are usually followed in anthropological studies. These are (a) retrospective (a backward-looking) design and (b) prospective or Cohort (forward-looking) design. Design of a formal retrospective study involves identification of a population with disease and an appropriate control group free of disease for comparison. Observation is focused on events, chiefly possible 'exposures' and disease occurrence in a given sample in the course of normal living. The analysis consists of statistical comparisons of two study groups with respect to exposures. The retrospective method is often the method of choice, particularly as a first step, since it is quick and inexpensive. Such a study generates first hand information to develop hypotheses that can be latter tested through longitudinal or cohort study (Pelto and Pelto 1970, Ward 1983). Through such inquires may reveal association, retrospective data provide no direct measure of the risk related to exposure. Such design yields data from which indirect estimates of relative risk (exposure rate) may be obtained.

More sophisticated in concept and design are prospective studies (forward-looking approach), in which sample is based on exposure to the determinants. An association would be indicated if researchers observe that a condition develops significantly with greater frequency among the exposed than among those unexposed. Here, both the groups are followed through time and the development of the defined condition is carefully noted. The key features of a cohort design are: (a) use of appropriate procedures in sampling, (b) the availability of reliable methods for clinical diagnosis of defined traits, when develop, and (c) provision for continuing observation and recording with accuracy during follow-up stage. The advantages of prospective studies are indeed important. By following this procedure, the occurrence of the health disorders can be interpreted as incidence rates and thus it provides a direct measure of the risk attributable to suspect determinants. Information concerning exposure is usually current at the time of study, and so is less subject to misclassification. However, one great limitation of a prospective study is that both the original sampling efforts and the long period of follow-up mean that such a design may be expensive, labor-intensive and time consuming (Omran 1971, Nichter and Nichter 1983).

5. COMPONENTS IN ETIOLOGICAL CONTINUUM

Three major categories could be recognized along the etiological continuum, The first category is represented by those diseases where the primary etiological component is due to some environmental insult. The germ model of diseases causation in this category continues to hold immense significance for understanding of the prognosis of an infectious disease. In the second category, both genetic and environmental factors operate to give a multi-factorial etiology. As a class of diseases the generative diseases as opposed to pure genetic disorders and infectious diseases, have a greater impact on the health of the adult population (manifesting at 40 years around) than the simple errors of chromosomal abnormalities (Choudhury 1988, Weiss 1985). Weiss notes,

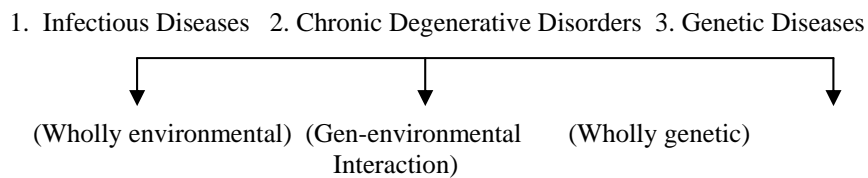
“ Genetic variants may arise in environments in which their phenotypic expression is only slightly different from that of the gene already present. In particular, such genes may be clinically ‘silent’ producing no ill effects. Major environmental changes (from agrarian to urbanization) could serve to exegerate the phenotype differences expressed by different genotypes to the point that some become pathological” (Weiss 1985;182).

Chronic diseases can be regarded as occurring in a spectrum or continuum; at the one end of the

continuum; at the one end of the continuum are infectious diseases that originate from environmental insult and are independent of the genetic constitution of the individual. At the other end of the spectrum are those disorders that are totally genetic in nature, which occur no matter what environment an individual grows in. The classic epidemiological approach has been particularly useful at the infectious and non-genetic end of the spectrum. There is little point for carrying an epidemiological analysis for those disorders that belong to the genetic pole of the continuum. There is a class of diseases in between genetic and infectious disorders which originates from the middle of the spectrum. Anthropological studies yield much knowledge on such disorders where both genetic and environmental factors interact.

In the third category are the traditional genetic diseases, whose proximal pathology tend to be genetically determined. This area falls within the sphere of geneticists predominantly, who emphasize the utilization of complex genetic analysis in an attempt to resolve which etiological components are genetic. This has been presented through a diagram below:

Etiological Continuum:



Distinguishing feature of two Paradigms in Health Research

BIOMEDICAL / BIOLOGISTIC MODEL	EPIDEMIOLOGICAL MODEL
Focus: Disease	Focus: Health
1. Research Setting: Hospital Setting	Social Setting: Community Setting
2. Target group: Patients Clinically Diagnosed Cases	Normal Subjects Chosen by Random Sampling Method
3. Nature of Data Clinical Data	Epidemiological Data
4. Method of data collection Clinical Tests and examinations	Observational and Documentation
5. Prospective Research Design Longitudinal Study, Experimental Method	Retrospective Design Cohort Study and Quasi-Experimental method
5. Research Status: Scientifically Valid and Reliable	Tentative and Probabilistic
6. Curative Emphasis	Preventive Emphasis

By focusing attention on attributes that have relevance to the functional adaptation of the population, medical anthropologists have proposed a theory of epidemiological transition which explains the mechanism behind the alteration of disease pattern among variant population groups. As a society undergoes changes in cultural patterns from rural agricultural lifeways to modern, urban, industrial life ways, morbidity and mortality pattern among populations follow a concomitant shift. The

communicable, infectious diseases, a characteristic feature of rural environment, are replaced in phases by non-infectious, degenerative disorders (for example, cancer, stroke, circulatory disorders, diabetes etc.) as the chief form of morbidity and mortality. Urbanization endows its population with a new level of adaptive capacity that tends to inter-act with behavioral patterning, nutritional balance, and the degree of energy expenditure level (physical activity). The altered conditions are not entirely beneficial, for some intrinsic aspects of urban life ways often act adversely on the physiological mechanism in population undergoing transition, leading to a considerable change in health status. An important aspect of this socio-cultural change is the emergence of new disease patterns. This complex alteration in the patterns of health and disease is conceptually characterized as the 'epidemiological transition' (Omran 1971).

6. CONCLUSIONS

It has been emphasized in this paper that for understanding of disease pattern, contemporary transitional societies provide an ideal laboratory condition, particularly for anthropological model-building. Since such societies present a quasi-experimental research context (having environmental contrasts like rural and urban sectors), it is often possible to make inferences about underlying causal relationships. A bio-medical research not only gives rise to a more deserving set of scientific questions, but also provides an opportunity for the investigation to benefit the people being studied. As Ward maintains, "The current major challenge to biological anthropology is to identify such populations (Transitional) and carry out appropriate studies which focus on the identification of etiological components. In so doing, Medical anthropologists may also begin to repay the debt they owe to traditional societies, by helping to alleviate the burdens caused by the changing patterns of disease as societies adjust to new environments"(1985:175).

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