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ABSTRACT

Most serious efforts aimed at linking social and behavioral sciences knowledge to medical practice have included "models" which integrate social and behavioral science concepts. We argue that such an integration is intellectually problematic due to an important analytic distinction between "social" sciences and "psychological" sciences. If the social explanation of illness is to become useful in medical education, a distinctly social model is necessary for conceptual clarity and for guidance of which is useful for explicating the link between social science knowledge and medical practice and for organizing the knowledge for teaching in medical schools.

Introduction

Most attempts to integrate the diverse knowledge generated by the social and behavioral sciences into medical education in the United States have been only marginally successful. Despite the fact that nearly all 120 U.S. medical

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schools have acknowledged the value of including these topics in the medical school curriculum and have hired faculty from these disciplines, there is still considerable dissatisfaction with the variety of ways that the social and behavioral sciences are organized and taught [1]. As Hartings and Counte describe the teaching of social/behavioral science in medicine:

> Though experimentation has spawned multiple forms of faculty organization for behavioral science, and a seemingly endless procession of courses and formats, basic problems of organization and content remain unsolved [2].

In response to this situation a significant body of literature has been generated in which authors suggest ways to revise the teaching of social and behavioral science in medical schools [e.g. 3–6]. Representative of these proposals is the work of Van Egeren and Fabrega, who state that the difficulty in translating "medical behavioral science" into effective teaching programs derives, in large part, from the fact that such efforts ate not guided by a "precisely articulated model which links the *behavioral sciences* to clinical medicine" [7, emphasis added]. As they correctly describe it, "medical behavioral science" is rejected by medical students who already believe that the material is not relevant to medical practice, a belief reinforced by the lack of conceptual clarity, fragmented courses, the student's chronic information overload, the perceived lack of "hard" facts, and the struggle to integrate this material with the biomedical sciences.

While we share the emphasis that these authors (and others) place on the lack of a model, the idea of a unifying model that *integrates* the interdisciplinary behavioral science concepts is not only premature but inappropriate as well. The idea is premature mainly because at this point there is little agreement about the exact nature of the teaching problem; it is appropriate because unifying models have tended to obscure, rather than illuminate, both the overlap and the important differences among the various disciplines encompassed by the term "social and/or behavioral sciences."

Confronted with a lack of consensus about the most effective way to teach the social and behavioral sciences, medical school educators are faced with a multitude of alternatives and no means to evaluate uniformly the relative merits of the options. This confusing situation can be traced to several interrelated problems that are both intellectual and organizational in character. In this paper we identify an important dimension of intellectual diversity in the social and behavioral sciences and discuss the implications of the difference for the organization and teaching of these subjects in medical schools. We argue further that a resolution of the problems in the organization and teaching of the social and

behavioral sciences must begin with an appreciation of fundamental intellectual differences within the social and behavioral sciences. Finally, we propose a unifying "social model" of illness and present a curriculum derived from it in the hope that such a model will furnish a more coherent way of organizing and teaching *social science* knowledge in medical schools.

Intellectual Diversity in the Social and Behavioral Sciences

An important source of intellectual diversity in the social and behavioral sciences is the distinction between social and psychological interpretations of human behavior. These two interpretations constitute alternative models for understanding individual behavior in general, and the personal and institutional context of health and illness in particular. The social explanation is concerned with the impact of social structure on individual behavior. In this view, most abstractly, social structure consists of the organization of a set of social positions, with "social position" referring to the role expectations faced by all individuals by virtue of their placement in this social structure. In contrast, the psychological explanation represents individual behavior as the outcome of psychic processes occurring within the individual. (Clearly, this is a matter of emphasis—the psychological explanation does not completely deny the importance of external social factors.)

Lack of recognition of this difference leads to conceptual confusion which is manifested in several ways. First, conceptual confusion is reflected by the practice of assuming that frequently-used terms, such as "social and behavioral science" or "behavioral science" have common definitions and shared meanings. Misunderstandings and miscommunication occur when authors unknowingly assign different meanings to these and other frequently-used terms, or use different terms, such as "human behavior" or "social behavior," to refer (perhaps) to the same phenomena. A thorough linguistic analysis of terms used in the medical behavioral science literature would be valuable.

This conceptual confusion typically leads to debate in the literature over the best definition of these terms. Authors seem unaware that it is impossible to define these terms in any absolute way because such definitions are dependent on each author's explanatory framework. Some of the terminological disputes result from the failure to distinguish, at a minimum, the definitions which derive their meaning from social explanatory models and those which derive their meaning from psychological models. Once such distinctions are recognized the definitional debates will become more fruitful.

A second manifestation of the conceptual confusion is the indiscriminate grouping of concepts from diverse disciplines, such as psychology, sociology, anthropology, economics, and the humanities into an "integrated" curriculum.

Faculty from these generally independent intellectual disciplines often are organized into a single department, as well. It is mainly in medical and other professional schools where such mergers, which blur the distinctions between autonomous disciplines, even are attempted. One simply cannot group faculty from diverse disciplines in a single course and assume that an "integrated" curriculum content results. One may achieve a "coordinated" course, but not a course derived from a coherent model that gives concepts appropriate interpretations. When well-intentioned interdisciplinary teams attempt to force conceptually distinct knowledge into an integrated framework, the result is more confusion. Such a task is logically impossible. Furthermore, developments in the history and philosophy of science [cf. 8,9] suggest that conceptual clarity is a necessary condition for the growth of knowledge in both the applied and basic sciences.

Distinguishing among the Behavioral Sciences

The conceptual confusion we refer to above implies the need when referring to "behavioral science" to make a distinction between "social science" and "psychological science." The dominant mode of thinking about how to combine the relevant knowledge from the behavioral sciences is again represented by Van Egeren and Fabrega, who define "medical behavioral science" as a "highly specialized interdisciplinary field embracing subspecialties within psychology, sociology and anthropology" [7]. The conceptual model they offer to unravel the confusion defines the "interplay of *sociopsychological* factors and disease factors in an integrated *biobehavioral* process occurring in time in distinct, delimited states" [7, emphasis added]. This model, and the implicit assumption imbedded in the underlined terms, simply confound the issue [see also 3, 4, 10].

The central problem with such a conceptual model is that it does not make a distinction between the biological and psychological levels of explanation, on the one hand, and the social level of explanation, on the other. To repeat, the social explanation of behavior analyzes an individual process, illness, as a result of external structural influences.* The biological and psychological levels of explanation analyze an individual process, illness or disease, as a result of biological and psychological influences within the individual.

Biological and psychological explanations are compatible with the medical model of disease, which explains disease as an abnormality in the individual's biological or psychological processs. Both levels focus on individual health and

*We prefer the term "illness" when describing the social explanation of behavior because "disease" connotes an organic etiology.

pathology, for the most part independent of the social structure. In teaching this perspective, the material is presented in a straightforward way such that direct causal linkages of biological and psychological factors to disease are demonstrated to exist *within* the individual patient.

The relationship of the social structure to illness is less explicit than is the relationship of biological and psychological factors. The link between biological and psychological factors and disease is clear and generally is acknowledged. The link between *social* factors and illness is less clear and requires more explanation and justification; this is indicated by the familiar criticism that social science knowledge is not relevant to medical practice [11]. As Harper states:

> The contribution of social science to medical education needs to be defined and presented in the very frame of reference in which it is to be used by the future practitioner[3].

The conglomerate courses subsumed under the title "social and behavioral science" traditionally have focused on the psychological content and level of explanation, covering the development of personality and life stages, or "human behavior" [cf 12]. The courses often are taught by psychiatrists or other medical doctors, whose training leads them to interpret social science concepts as part of a psychological or biological framework. The dominance of the psychological perspective is reflected further in the National Board examination questions on the behavioral sciences.

To clarify the differences between the social and psychological explanations and the implications for teaching these subjects in medical schools, consider the application of the explanations to two major topics in social and behavioral science courses. One major topic focuses on the acknowledged link between stress and coronary disease. An example of the mainly psychological interpretation of this link is the Jenkins description of the "coronary-prone personality" which utilizes the research on Type A-B behavior patterns [13]. An example of the social interpretation is to link stress to coronary disease through social positions, such as occupation or status incongruity [14].

Another major topic is the doctor-patient relationship, which most practitioners and researchers acknowledge has an impact on the efficacy of medical intervention. A psychological interpretation of this relationship focuses on the personality characteristics of the doctor and patient. One article on the psychology of illness explains the patient's reactions to the doctor as instances of negative or positive "transference," the patient's reaction to illness as "regression," and the doctor's reaction to the patient as "countertransference" [15]. A social interpretation of this same phenomenon might center on the relative social positions occupied by the doctor-patient relationship as an example of authority

relations produces a discussion of the interaction on the basis of the distribution of power [cf. 16,17].

These illustrations emphasize that the two explanatory frameworks which we have designated as social and psychological can provide rather different interpretations for the same observed phenomena, and that these differences have real implications for medical practice. In order for the social explanation of behavior to develop a coherent model which can be used effectively for clinical training, we must separate, at least conceptually, the social from the psychological sciences. The term "behavioral science" merely blurs, for purposes of this argument, a necessary distinction.** In the remainder of this paper, we delineate a conceptual model linking social structure with illness. We then describe its utility for organizing and teaching social science in one medical school program.

A Model for Organizing Social Science Knowledge

The model presented in Fig. 1 organizes knowledge generated by the social sciences that is relevant to the practice of medicine. The model provides a way of understanding how elements of the social context influence the illness process. In previous models, social positions are not included explicitly or are not linked to the patient (see, e.g. Hughes and Kane's "health-sickness" continuum model [18]; Fabrega's decision-theoretic model of illness behavior [19]; McKinlay's "patient career" model [4]; Donabedian's model of the medical care process and its environment [20]). Relevance is achieved by organizing the model presented here around the *illness process*, which is the center of the physician's activity. The *social context* of illness includes consideration of all non-organic factors which influence illness.

The social explanation of behavior places illness in a wider social context. Knowledge of the patient's social context aids the physician in developing empathy, making the appropriate diagnosis, prescribing a realistic treatment regimen and predicting the outcome of the illness episode.

In the social model, the illness process is defined by 4 overlapping stages. Each stage of the illness process is influenced by structural factors, such as social institutions, cultural values, and technology, and more directly by social positions of both the patient and clinician. The following are examples of social positions of patients and clinicians: age, sex, race/ethnicity, occupation, education, income/social class, religion, marital/family situation, and geographic location.

**This distinction does not deny the obvious fact that a combination of social, psychological and biological factors determines the onset of and response to illness.

The first phase in the illness process is conceptualized as the "Onset" stage. In the social model with the onset of illness it is not always possible to identify a single, organic cause or a disease syndrome as it is in the medical model. After the onset of the illness, individuals react differently due to various social factors, making "Response" the second stage in the illness process. The organic onset of disease may not be perceived as illness, symptoms may be denied or

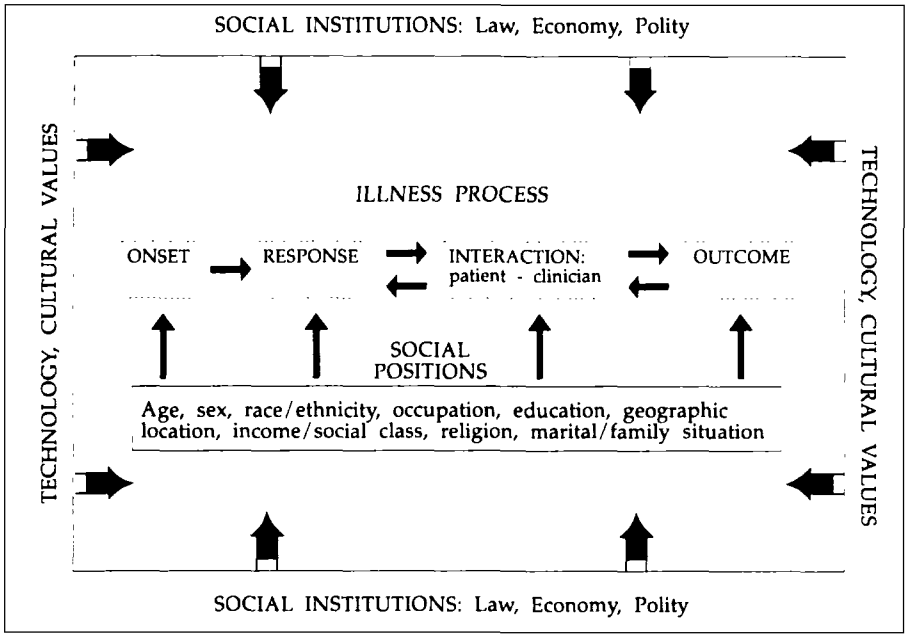

Fig. 1 A social model of the illness process

ignored, or a sick role may or may not be adopted, depending on the social context. An individual's socially conditioned response may or may not lead to interaction with some type of clinician. Because we particularly are concerned with those circumstances when this does occur, the third stage in the illness process is the "Interaction" between patients and clinicians. At this stage, social positions shape the attitudes, behavior and role performance of the clinician and affect the interaction with the patient. The interaction eventually leads to some kind of "Outcome," which defines the final stage in an illness sequence or leads to onset of another sequence.

As indicated above, illness proceeds within and is influenced by legal, political and economic institutions, technology, and cultural values. These general, abstract forces influence the development and distribution of societal resources for coping with illness and disease. For example, cultural values incorporated into sex role socialization can be used to help explain the differential morbidity and mortality rates of males and females [21, 22]. National and state laws, such as those governing Medicare and Medicaid, affect utilization behavior of patients and treatment patterns of providers.

The above process description oversimplifies a complex process, of course, but the social model of illness gives an analytic framework for understanding the influence of and interrelations among various social factors and the process of illness.

Implications of the Social Model for Social and Behavioral Science Education

Adoption of the social model has definite implications for the organization and teaching of behavioral and social science in medical schools. It follows from our argument that material treating illness as an individual biological or psychological process should be presented in courses separate from those covering the social context of illness, and psychologists, psychiatrists and other physicians in most cases would not be appropriate for teaching the social sciences. Traditionally, this has not been the case. The most common home for courses in behavioral science currently is Departments of Psychiatry [2], and as a result behavioral science often is presented as a subfield of psychiatry. A perusal of behavioral science teaching content reported in the literature shows the predominance of knowledge from psychology [e.g. 23–26].

At the University of North Carolina at Chapel Hill (UNC-CH) first year medical students are being presented much of the wide range of knowledge illustrated in the social model. The 160 students are taught a year long course by 8 teams of clinicians and social scientists in small groups of 20. Social scientists present research results and clinicians provide case illustrations from their practices of the same principles. The social scientist/clinician teams teach from a uniform curriculum and together attempt to achieve the integration and relevance necessary for the effective teaching of the social model. In this way medical students still have physician role models to identify with and social scientists to provide complementary perspectives on illness. Medical students strongly approve of the team teaching, with 97% of them recommending it over solo teaching by a physician or social scientist in an evaluation of the fall semester, 1979.

Table 1

Organization of Social Science Knowledge for Medical School Course

Introduction: A Social Model of the Illness Process

A. The Illness Process
   1. Onset
   2. Response
   3. Patient-clinician interaction
   4. Outcome
B. Social Positions and the Illness Process: age, sex, race/ethnicity, occupation, education, income/social class, religion, marital/family situation, geographic location
C. Structural Influences and the Illness Process: law, economy, polity, technology, cultural values

Section I: The Onset of Illness and Responses to Illness

A. Gender, Sex Role and Illness
   1. Patterns of illness
   2. Preventive measures and the role of the clinician
B. Occupation and the Risk of Illness
   1. Coronary heart disease
   2. Cancer, brown lung, black lung
   3. Preventive measures and the role of the clinician
C. Social Class/Income and Illness
   1. Patterns of illness by social class/income levels
   2. Preventive measures and the role of the clinician
D. Ethnicity and Perceptions of Pain
E. Religion and Attitudes Toward Health and Illness
F. Aging and Attitudes Toward Health and Illness
G. Cultural Conceptions of the Sick Role
H. Legal and Political Influences on the Labelling of Illness
I. Legal, Political and Economic Influences on the Demand for Health Services

Section II: The Training of Clinicians

A. Types of Clinicians: Roles and Relationships
   1. Physicians, osteopaths, dentists, optometrists, podiatrists, chiropractors, nurses, pharmacists
   2. Allied health workers
   3. Alternative healers
B. Age, Sex, Race and Social Class of Clinicians
   1. Description
   2. Implications for patient care

C. Education and Socialization of Clinicians
   1. Attitudes toward patients
   2. Uncertainty in medical judgment

Section III: The Patient-Clinician Interaction and Its Outcomes

A. Models of the Patient-Clinician Interaction
B. Ethical Dilemmas in the Patient-Clinician Interaction
   1. Confidentiality and truth-telling
   2. Informed consent and medical intervention
C. Racism and Sexism in Diagnosis and Treatment
D. Social Factors and Compliance
E. Outcomes of the Patient-Clinician Interaction
   1. Coping with chronic illness
   2. Death and dying
      a. Cultural values
      b. Organization of death
F. Cost of Health Services
G. Distribution of Scarce Resources for Health Services

Teaching of the medical social science course ideally would begin with a discussion of the organizing model, as shown in Table 1. Table 1 also gives a suggested outline for material to be taught to first year medical students. This outline was used to plan the UNC-CH first year course, "Social and Cultural Issues in Medical Practice". As shown in Table 1, the course proceeds from a discussion of the social model to material on the influence of social factors such as occupation, social class and religion on the onset and response to illness. Then the training of healers in our culture and other cultures is explored (Section II). In the last major section of the course, the influence of social factors on the patient-clinician interaction is discussed. Ethical problems are subsumed under this topic, along with problems in death and dying and the cost and distribution of health care resources.

The social model of the illness process has proven to be a useful means of organizing the case material presented to students by clinical faculty. For example, research has suggested a relationship between cultural values emphasizing occupational achievement and individual competition in the United States and a high coronary heart disease rate. This general social influence affects the illness process at the individual level through social positions such as occupation, and through psychological concepts, such as personality [13,14]. The clinician provides examples of patients whose social positions have influenced the onset of, response to, and outcome of coronary heart illness and describes in detail

the natural history of the interaction with the coronary illness patient.*** Also, throughout the course physicians relate case examples from clinical practice illustrating such topics as religion and illness behavior, uncertainty in medical judgment, patient "compliance," and the cost of health services. In this way the medical student comes to understand both the general concept and its specific application.

Results of a student evaluation of the UNC-CH course are reported elsewhere [11]; that evaluation and subsequent ones have shown a high degree of student receptivity to the course. One drawback to teaching the course to first-year students is the lack of clinical involvement that students could use for immediate application or validation of knowledge.

Summary

We have argued that an important analytic distinction must be made between the social sciences and the psychological and biological sciences in order for social science knowledge to be presented and perceived as relevant to medical practice. If the social explanation of illness is to become useful in medical education, an alternative social model is necessary for conceptual clarity and for guidance of course material selection and teaching format. We have outlined a preliminary model which organizes social science material relevant to the clinical practice of medicine and has proven useful in organizing and teaching social science knowledge in one medical school. We contend that it is misleading to try to integrate distinctive explanations of illness process into a single model. It is hoped that this discussion will stimulate further interchange regarding the most effective means of utilizing social science knowledge in applied settings such as medical schools.

References

1. Kleinman A. Eisenberg L. and Good B. Culture, illness, and care. *Ann. Intern. Med.* 88, 251, 1978.

2. Hartings M. F. and Counte M. A. An administrative and curricular model for behavioral science teaching. *J. Med. Educ.* 52, 824, 1977.

***A very interesting case study of the interaction between social and psychological influences and coronary heart disease can be found in the book *A Coronary Event* written by Michael Halberstam (a physician) and Stephen Lesher (the patient) [27]. This case-example, which is used in the course, demonstrates in a concrete way how social positions such as age, sex role, marital situation and occupation shape the attitudes and behavior of patient and physician during the illness process.

3. Harper A. C. Towards a job description for comprehensive health care—a framework for education and management. *Soc. Sci. Med.* 7, 985, 1973.

4. McKinlay J. B. The concept "patient career" as a heuristic device for making medical sociology relevant to medical students. *Soc. Sci. Med.* 5, 441, 1971.

5. Coe R. M. Teaching behavioral sciences in schools of medicine. *Soc. Sci. Med.* 9, 221, 1975.

6. Kane R. L. (Ed.) *The Behavioral Sciences and Preventive Medicine*. DHEW Publ. No. (NIH) 76–878, 1977.

7. Van Egeren L. and Fabrega H. Behavioral science and medical education: a biobehavioral perspective. *Soc. Sci. Med.* 10, 535, 1976.

8. Kuhn T. S. *The Structure of Scientific Revolutions*. Univ. Chicago Press, Chicago, 1970.

9. Suppe F. (Ed.) *The Structure of Scientific Theories*, 2nd edn. Univ. Illinois Press, Chicago, 1977.

10. Dacey M. L. and Wintrob R. M. Human behavior: the teaching of social and behavioral sciences in medical schools. *Soc. Sci. Med.* 7, 943, 1973.

11. Begun J. W. and Rieker P. P. Social science in medicine: the question of "relevance." *J. Med. Educ.* 55, 181, 1980.

12. Simons R. C. and Pardes H. (eds.) *Understanding Human Behavior in Health & Illness*. Williams & Wilkins, Baltimore, 1977.

13. Jenkins C. D. The coronary-prone personality. In *Psychological Aspects of Myocardial Infarction and Coronary Care* (Edited by Gentry W. D. and Williams R. B.), p. 5. Mosby, St Louis, 1975.

14. House J. S. Occupational stress and coronary heart disease: a review and theoretical integration. *J. Hlth Soc. Behav.* 15, 17, 1974.

15. Blumenfield M. The doctor-patient relationship. In *Understanding Human Behavior in Health and Illness* (Edited by Simons R. C. and Pardes H.), p. 397. Williams & Wilkins, Baltimore, 1977.

16. Szasz T. S. and Hollender M. H. The basic models of the doctor-patient relationship. *Archs Intern. Med.* 97, 585, 1956.

17. Kaplan A. G. Toward an analysis of sex-role related issues in the therapeutic relationship. *Psychiatry* 42, 112, 1979.

18. Hughes C. C. and Kane R. L. The behavioral sciences and community medicine: intersection, interaction, or interpenetration? In *The Behavioral Sciences and Preventive Medicine* (Edited by Kane R. L.), p. 1. DHEW Publ. No. (NIH) 76–878, 1977.

19. Fabrega H. *Disease and Social Behavior*. MIT Press, Cambridge, 1974.

20. Donabedian A. *Aspects of Medical Care Administration*. Harvard Univ. Press, Cambridge, 1974.

21. Harrison J. Warning: the male sex role may be dangerous to your health. *J. Social Issues* 34, 65, 1978.

22. Nathanson, C. A. Illness and the feminine role: a theoretical overview. *Soc. Sci. Med.* 9, 57, 1976.

23. Fletcher C. R. Study of behavioral science teaching in schools of medicine. *J. Med. Educ.* 49, 188, 1974.

24. Nadelson C. C., Notman M. T. and Poussaint A. F. Early clinical experience in behavioral science teaching. *J. Med. Educ* 52, 683, 1977.

25. Wales E. Behavioral scientist meets the practicing physician. *J. Fam. Practice* 6, 839, 1978.

26. Williamson P., Oktay J. S. and Bennett B. Behavioral scientists as clinical educators of primary care physicians. *J. Med. Educ.* 53, 191, 1978.

27. Halberstam M. and Lesher S. *A Coronary Event*. Popular Library, New York. 1978.