

## Is There an Epidemiology of Mental Disease?\*

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IT may be uninteresting to introduce the discussion of a subject by considering definitions, but it seems rather necessary to do so in the present instance as the science of epidemiology is not generally considered by those most concerned with it to include mental disease. I have looked over many texts and in none do I find any systematic discussion or treatment of mental disease as an epidemiological topic. In one book, *Epidemics and Crowd Diseases* by Greenwood (1935), there is a passing reference to dancing mania and similar emotional disturbances of crowds which are considered worthy of epidemiological study. The Vaughans in their textbook *Epidemiology and Public Health* (1923) define epidemiology as the science of epidemics, and state that for a disease to be considered of epidemiological concern a necessary criterion is that it be infectious, or at least possibly infectious, and further that the cause of infection be some germ or virus. A reading of Sir William Hamer's *Epidemiology: Old and New* would also lead one to the same way of looking at

epidemiology. A break with the need of requiring infection by germ or virus is made by Greenwood in the text mentioned above. We quote him as follows:

Epidemiology came to mean the study of diseases, any disease, as a mass phenomenon. It differs from the study of disease by a clinician primarily in respect of the unit of investigation. A physician is concerned with, say, typhoid fever from the point of view of the individual patient, to determine from his experience and the results of his examination (a) that the patient is suffering from typhoid fever, (b) how the case is likely to develop—its prognosis, (c) what treatment is likely to give the patient the best chance of recovery. An epidemiologist is concerned with a prevalence of typhoid fever; he wishes to determine the probable course of that prevalence, whether there are likely to be more cases, when the maximum will be reached, what should be done to reduce the prevalence. The physician's unit of study is a single human being, the epidemiologist's unit is not a single human being but an aggregate of human beings, and since it is impossible to hold in the mind distinctly a mass of separate particulars he forms a general picture, an average of what is happening, and works upon that (page 15).

Because of Greenwood's non-insistence upon an infectious *materies morbi*, he is able to include a whole chapter on cancer. Although it is perhaps the least valuable chapter in the book (because at the time it was written very little of definite epidemiological value about cancer had been deduced), nevertheless it is worthy of note because

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it means that epidemiology need not be limited to those diseases caused by some form of infectious agent. Greenwood's book, however, has no chapter on mental disease. So far as I have been able to find in the literature, there is no systematic work dealing with this important class of diseases.

My first conception of an epidemiology of mental disease came from Dr. Milton J. Rosenau, formerly Professor of Preventive Medicine and Hygiene at the Harvard Medical School and School of Public Health. When I was a student of his in 1923-1924, I heard him state that there was an epidemiology of mental disease, even though this was not generally recognized. As a matter of fact, in his department at least one worker was giving his full attention to the epidemiological study of mental disease.

The social and economic importance of mental disease warrants its being included in a science of epidemiology. This no one can doubt. Statistics show that more than one-half of all beds devoted to the care and treatment of disease throughout the country are filled by patients suffering from some form of mental disease. This fact alone entitles it to be a prime concern of public health. When we realize that a good part of the population residing outside of hospital walls suffers from some form of mental disease or disorder, this primacy cannot be challenged.

One might ask how has it come about that a factor of such importance to the public health failed to be included in the science of epidemiology. One of the reasons is perhaps that from early days public health departments have dealt with communicable diseases while other branches of government have had the care and treatment of mentally diseased persons. Undoubtedly another reason is the taboo that has surrounded mental diseases, a taboo which has in part resulted from the Christian atti-

tude toward the body-mind problem, the body being the concern of the physician and the mind of the church. Possibly another reason is the fact that it is only recently that psychiatry has been seriously interested in the matter of the control and prevention of mental disease, chiefly through the influence of the modern mental hygiene movement. A further reason may be the confusion which one may note in current psychiatry as to the nature and origin of mental disease.

For the past 20 or 30 years psychiatrists have been divided into various schools differing mainly in their way of looking upon etiology. These may be roughly classified as (1) the organic, (2) the psychological, and (3) the eclectic, this last having characteristics of the first two.

The organic school stresses etiology, with a noxious agent or organic change as being the prime cause of mental disease. The psychological school and to a considerable extent the eclectic school look upon mental disease rather as the various abnormal ways in which human beings react to difficult situations in life. These difficulties may be inheritance in terms of defective germ plasm, or noxious agents such as infectious metabolic and external poisons, or they may be psychic trauma, mental conflicts, trying situations, and the like. Each individual is looked upon as unique, with a personality which is the resultant of a constitution developing in a continuing series of experience from birth to death. Man is a gregarious individual, and one of the risks of life is the hosts of possible trauma coming about from his contact with his fellow men. He is not only a physical being but a feeling and thinking individual. In terms of present-day philosophy he is not to be looked upon as a mere machine reacting mechanically to internal and external stimuli but as an organism capable of creating

new reactions in response to the various stimuli of existence.

Perhaps an example cited here will help to clarify my discussion at this point. Two individuals may have an influenza infection. One has chiefly pulmonary symptoms, together with the usual mental depression and the general aches and pains which go with the disease. The second has as his main symptom-complex the so-called schizophrenic reaction—a special type of abnormal mental picture. I do not need here to enter into a description of this type of reaction, except to state that it represents in terms of the psychiatrist a splitting of the psyche, a bizarre reaction of the individual, resulting from the disintegrating effects of the toxins of the influenza infection upon the brain. For the group of psychiatrists belonging to the organic school, it is enough to note that we have a psychosis, a mental disease with a certain mental picture, the direct result of an influenza infection. For the other two groups of psychiatrists, it is more important to note the particular way in which the individual reacts to this toxic agent, to note the kind of mental picture and behavior that results, the kind of personality he had before the onset of the infection, and, what is most important, how the patient came to behave that way and to develop a psychosis. In other words, the more modern schools of psychiatry are interested in the dynamics of those influences which caused a certain personality to develop a particular psychosis, and the infective agent is only one of the many influences or factors.

Undoubtedly this discussion of the differences in etiological systems may be confusing to the non-psychiatrist. Essentially this situation is not unique to modern psychiatry, as we find something similar in epidemiological discussions of the last decade or two.

Particularly Greenwood and Hamer of England make much of the point that epidemiology until recently suffered considerably from being too exclusively concerned with the significance of the single etiological agent—the bacterium or virus—and neglected what is perhaps the more important contribution of epidemiology—a concern with all of the significant and pertinent etiological factors which cause a disease to appear in a community, including hereditary influences.

The way in which medical men look upon etiology may be simply a matter of temperament; some prefer to be single etiologically-minded while others prefer to be plural etiologically-minded. This latter tendency is fundamental to much of modern psychiatry, even though we are compelled to note a paradox in the acceptance of a new classification of mental disease adopted by the American Psychiatric Association as recently as 1934 which explicitly emphasizes the single noxious agent, or organic pathology, as the main discriminating criterion of disease entities. This more recent classification exhibits this new emphasis more definitely than the first classification approved in 1916.

There is perhaps another reason why mental disease has only recently come to be recognized as a topic of epidemiological study, and that is the fact that practically the only statistics available in the field of mental disease are of hospital population, in contradistinction to statistics from community populations of communicable diseases and the other physical diseases. Statistics of hospital populations are quite apt to suffer from administrative and legal practices which tend to vary from locality to locality as well as in time. This dependence upon hospital statistics leads one to lean too heavily and too exclusively upon the use of proportionate morbidity as the usual type of

statistical analysis, and this our statistical friends state is a dangerous practice when one uses these statistics for the purpose of inference.

When a man dies, there is no question about it, but there may be some question about the disease to which he succumbed. In many instances there is even more question as to what particular ailment a person is suffering from. The death certificate takes pretty good care of the first two categories, while the latter is quite dependent upon the vagaries of the reporting physician. It may be true, however, that because of the nature of the more serious mental diseases, we get a better picture of the incidence of mental disease from hospital statistics because of the necessity of the incarceration of these patients in a hospital for mental diseases. This picture may be found, however, only in those state administrations where the facilities for care and treatment are adequate and where popular opinion and medical coöperation favor the admission of patients to mental hospitals. This means, therefore, that there are only a few states whose statistics are fairly reliable from this point of view. There may also have been suspicion in the minds of some epidemiologists that some of the statistics available in the annual reports of state hospital administrations and particular institutions may not have been properly presented or prepared. The recent work of Dayton in Massachusetts, some of it unpublished, demonstrates this.

I might venture one final reason for the late interest by epidemiologists in mental disease as being that much of the factual material involves more or less intangible concepts, because psychiatry, dealing so much with the mind, must perforce concern itself with subjective experience, which is so difficult for scientific study and analysis. For example, sex in a statistical sense offers

no difficulty at all to the statistician, but the complicated concepts of the development of the libido are perhaps too much and too difficult for him. Another example may be given as follows: The epidemiologist in the field of communicable disease has generally little trouble with the determination of the onset of an attack of disease, but when one comes to the determination of the onset of a case of schizophrenia, it is one thing if one is a Kraepelinian, another if one is a Meyerian, and still another if one adheres to the psychoanalytic school. This difficulty with etiology, however, is not limited to psychiatry. It is to be noted more particularly in the field of chronic physical diseases, such as chronic nephritis, arthritis, cardiac disease, etc.

Up to this point the discussion has been more or less aimed at demonstrating that mental disease is a proper concern of epidemiology and giving reasons to explain why it has only very recently come to be considered worthy of attention by epidemiologists.

The balance of my discussion will cite a few important facts in the history of the epidemiology of mental disease, even though it be a recent and short one. This is done to further the thesis that there is an epidemiology of mental disease by demonstrating that actual work has been and is being done in this field. (A second paper, which may be available later, would do this more definitely.) Before going further I wish to make it plain that I differentiate between administrative statistics and such statistics as have been utilized for a definite epidemiological purpose. The reason for mentioning this is that so much of state hospital statistics are gathered and prepared just with administrative objectives in mind.

It is difficult to state exactly when statistical information was prepared

and made available and studied from an epidemiological point of view. It is my opinion that the best way to answer this question would be to say that the epidemiology of mental disease started in 1916 with the acceptance of the first classification of mental disease adopted by the American Psychiatric Association and the National Committee for Mental Hygiene. The person to be given credit for this pioneer development in the epidemiology of mental disease is Horatio M. Pollock, Statistician of the New York State Hospital Commission. He also became the first Director of the Bureau (later called Department) of Statistics of the National Committee for Mental Hygiene. Dr. Pollock's influence extended still further in connection with the Federal Census as he was largely responsible for the development of that section that deals with mental disease.

From 1916 to about 1928, the State of New York held the foremost position in this field. Of course, here and there isolated writers discussed some forms of mental disease in an epidemiological way, but what is meant here is any systematic, continued attack on the problem. About 1928, Massachusetts, under the leadership and stimulus of the late Dr. George M. Kline, then State Commissioner of Mental Diseases, offered the most elaborate and serious attack on the problem to be noted in this country.

With funds made available by the state and by the Rockefeller Foundation, a very large and competent research statistical department was organized under the direction of Dr. Neil A. Dayton, whose many contributions to the epidemiology of mental disease and defect are well known.

Almost coincident with the development of this work in Massachusetts came somewhat similar attempts, particularly in the State of New York

under the joint auspices of the Statistical Division of the State Department of Mental Hygiene and the New York State Committee on Mental Hygiene of the State Charities Aid Association. This work was directed by Raymond G. Fuller, assisted by Horatio M. Pollock and Benjamin Malzberg. A more intensive investigation in the social factors of schizophrenia was attempted for a period of 7 or 8 years under the auspices of the Boston Psychopathic Hospital and the Massachusetts Society for Mental Hygiene.

The U. S. Public Health Service has also been interested in this field and in conjunction with the National Committee for Mental Hygiene has recently made an organized advance. The stimulus for this most recent development comes from Dr. Walter L. Treadway, Director of the Division of Mental Hygiene of the U. S. Public Health Service.

Possibly the best statistics on mental diseases in this country are now provided by the Massachusetts State Department of Mental Diseases. This department was the first to recognize the urgent necessity of preparing adequate statistics on the resident population. Before that time statistics on mental diseases had been confined to admissions, discharges, and deaths. While this analysis gave an interesting picture of the movement of the population, it overlooked the serious problem of the accumulation of mental patients within our mental hospitals. The Department of Mental Diseases in the *Annual Reports* since 1928 inaugurated another important change. It divided all discharges, deaths, and resident population into first admissions and readmissions. Formerly it had been the uniform custom to divide admissions into first admissions and readmissions, but to group the discharges, the deaths, and the resident population. Thus, if anyone wished to

follow through what had happened to first admissions, for example, he would be blocked by the fact that statistics on this classification were not available in the discharges, deaths, or resident population. Massachusetts, in making this important division, enabled anyone to follow through and determine discharge rates, by age, for example, of all first admissions. These figures, based upon the present age distribution in the resident population plus the discharges and deaths, give ample opportunity for discriminating analyses of first admis-

sions. Owing to their method of division, similar studies can be made on readmissions.

We see then that mental disease is a proper concern of epidemiology from the point of view of contemporary definitions of this science. The past 20 years or so have witnessed an increasing amount of epidemiological knowledge in this class of diseases and it is my opinion that during the next decade or two mental disease will become an important part of epidemiological science.