

3. The history of the illness, its onset, and prior treatment are obscured by unclear definition ("insidious onset") or by failure of the system to attend to them.

4. Treatments provided by the clinician reduce the intensity of symptoms rather than effect a complete cure. Under these conditions, there is less need or motivation to follow the patient to the point of full recovery.

5. Treatment is provided by specialists who are unlikely to encounter the recovered patient in the context of different problems or routine care.

THE CLINICIAN'S ILLUSION AND DISPARITIES AMONG RESEARCH FINDINGS

Distortion of population characteristics by the unequal occurrence in currently ill samples of patients with different duration of illness is by no means a phenomenon limited to clinicians. It has become a familiar convenience to accept persons with some established diagnosis who attend some clinical service as representing a larger population of persons with the disorder being investigated. It may be recognized that patient selection may be affected by the service system, that the patients may differ from those in other geographic regions, and that in any case, they are not a randomly sampled group from a definable population.²⁷ Nevertheless, these sources of selection bias are not often considered as seriously invalidating the conclusions drawn from the investigation. This expectation of validity may be often or even usually justified. That is, when the conclusions are suitably limited to and appropriate for those patients who are being seen in services like the source of the sample, and no more general inferences about the disease as such are drawn, such studies are useful.

However, Fletcher and Fletcher's²⁸ review of 30 years of medical research articles suggested that data necessary to describe the sample, and therefore the population to which generalization may be appropriate, are increasingly absent from published reports of research on medical conditions. In spite of this inconsistency in reporting relevant sample descriptors, researchers are often concerned about the great variability in outcome observed in these populations. Indeed, these concerns have led to increased efforts to improve the diagnostic system for mental illness. The frequent admonition that inconsistencies in outcome cannot be expected to disappear without valid, consistent, and rigorously applied diagnoses should be accompanied by an equal concern for population definition.

Not only are samples drawn from well-defined current cases likely to be heterogeneous and biased with regard to duration of illness, but even samples of new intakes to treatment are often subject to the same problem. For example, it has been found that patients diagnosed as having schizophrenia on first admission to a psychiatric facility had manifested psychotic symptoms for durations varying from less than one week to more than five years.²⁹ Furthermore, duration was substantially correlated with the nature of the symptoms.

Another by-product of the clinician's illusion is an overestimate of the number of new patients entering a treatment system. It is, of course, possible to estimate incidence from prevalence figures, given the validity of certain assumptions.³⁰ In the absence of explicit estimates, those operating clinical facilities for chronic diseases are likely to overestimate the number of new cases. This problem, which causes an "accrual shortfall" in studies based on new cases, is apparently endemic to research on chronic or recurring diseases.³¹

It is not necessary to invoke a treatment setting in order to find the kind of biased representation we have discussed. As must follow from the fact that in our illustration we assumed that all those with an illness were being treated as long as they were ill, the phenomenon will be present in untreated or "true" prevalence studies as well. These studies will, of course, avoid the problems associated with treatment settings, as enumerated previously. However, they will still overrepresent the long-term ill. This problem may not seem so serious because it is often thought that an understanding of the more lasting forms of an illness is the most urgent need. However, in comparing such a biased sample with controls, there is likely to be no way to separate characteristics that have an effect on the duration or course of an illness from those

with a causal connection *per se*.

This problem of biased sampling needs to be kept distinct from the more familiar reason for preferring incidence to prevalence samples, namely, the difficulty in the latter samples in distinguishing causes of the disease from consequences. Unfortunately, incidence samples of relatively rare diseases are difficult to locate; longitudinal samples of populations must be impractically large to include enough cases to examine. For this reason, for example, the "high risk" designs for following children at genetic or other risk of contracting a disease are employed. Even here, in theory, one must beware lest parents are selected not only for the illness but also for traits that are etiologically irrelevant but affect the course of the illness, such as intelligence or criminality, which they may pass on to their children.³²

One real possibility for many of the diseases discussed previously is that these etiologically uncorrelated conditions may have a pernicious influence on the course of the illness. Thus, low intelligence may not affect one's risk of becoming a felon but, once a felon, may adversely affect the likelihood of successfully changing vocations. Similarly, inadequate social skills and friendship bonds may have no causal connection with schizophrenia but may impair opportunities for reality testing and improving adaptive skills in those in whom thought disorder develops.

Research findings will be most distorted when based on a point prevalence of treated patients rather than a period prevalence, ie, one including all identified cases over a span of time. A sense of how extremely different these populations may be is suggested by the following illustration.

At any given moment, about 15,000 New York City patients are being treated in facilities sponsored or licensed by the New York State Office of Mental Health. Furthermore, there are about 15,000 annual admissions to these facilities. If one examines the census of these treatment facilities, that is, takes a point prevalence of treated patients, about 96% of the patients will have been hospitalized for more than one year (the average length is more than 20 years). At least 60% of these patients will still be there if another census is examined two years later. On the other hand, if one examines the period prevalence, approximately 30,000 patients treated during the year (more exactly, 95% of 15,000 = 14,250 plus 15,000 admissions = 29,250), one will find a very odd-shaped distribution with large peaks in the three-weeks-or-less and 20-years-or-more treatment duration groups, perhaps a third of the sample in each of these categories and the other third strung out in between.

If one examines intakes alone, the median duration may be about three weeks and only a tiny proportion will be in treatment two years later. In other words, these two treatment groups, the census on a given date and the intakes over a year's time, have only about a 5% overlap. These figures are, of course, approximate and depend on the nature of the treatment system.

If all treated patients in one year were included regardless of treatment provider, these figures would change; they also will vary depending on the mix of outpatient and inpatient service. The moral of the story is, however, independent of these details. It is that without a careful specification of the treatment history and the nature of selection, the population to which research findings can be generalized is unknown. Current conventional standards for research reports are quite inadequate for this purpose.

COMMENT

The phenomenon described herein as the clinician's illusion should be understood in the context of other illusions; that is, as a natural consequence of a combination of certain human perspectives and information-processing tendencies.³³ Thus, it is not intended to be a pejorative term and does not connote delusion; nor is it asserted that the basic problem is entirely unfamiliar to workers and methodologists in clinical fields.³⁴ Nevertheless, the possible magnitude of the effects on prognostic inferences may well have been insufficiently appreciated in the published literature. Therefore, the following recommendations are offered.

First, researchers should be careful to report the duration of illness and/or number of prior episodes in studies of

but may be the prob. of getting caught. Some goes for hospitalization patients & IQ - most likely to need to relate to IQ & unrelated.