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The neo-Kraepelinian revolution in psychiatric diagnosis

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Abstract New revisions of diagnostic categories have produced the most recent classification systems, namely DSM-IV and ICD-10. The diagnostic approaches exemplified by these two nomenclatures are very similar to one another and represent a return to descriptive psychiatry in which careful observation of symptoms, signs, and course of mental diseases become the diagnostic criteria themselves. In many ways, these newest classification schemata can be considered a return to phenomenological psychiatry perhaps best exemplified at the start of this century by Emil Kraepelin. Thus, recent developments in psychiatric diagnosis can be thought of as “neo-Kraepelinian”. Because they represent a relatively radical change from psychodynamic approaches to evaluation and diagnosis, they can also be called “revolutionary.” This paper traces the roots of current diagnostic systems and compares and contrasts these systems to the classification schema described by Kraepelin. Diagnostic criteria for schizophrenia are used as an example of how diagnostic conventions have changed dramatically over the past 50 years. Discussion of the implications of this neo-Kraepelinian revolution in psychiatric diagnosis is included.

Key words Psychiatric diagnosis · Kraepelin · Medical model · DSM-IV · ICD-10

Introduction

With the introduction of the ICD-10 and the DSM-IV, psychiatrists and other mental health clinicians are being confronted with another change in diagnostic classification. These revisions in the official diagnostic criteria afford an opportunity to consider how classification in psychiatry has changed over the years by comparing previous and current incarnations of ICD and DSM to the classical

descriptive approach to psychiatric illness. This classical approach was perhaps most elegantly displayed by Emil Kraepelin in his careful descriptions of major psychiatric illnesses at the end of the 19th and the start of the 20th centuries. Thus, we take this opportunity to consider how the most recent diagnostic conventions are related to the formulations of Kraepelin and his careful delineation of clinical syndromes based on careful observation of hospitalized psychiatric patients.

To illustrate how diagnostic traditions have changed over the years we discuss how the diagnosis of schizophrenia has been approached in several different diagnostic traditions. This is not meant to be an exhaustive discussion about the diagnosis of schizophrenia. Rather, the progression of approaches to the diagnosis of schizophrenia in the U.S. and internationally (i.e., the DSM system and the ICD system) is traced and contrasted with the approach taken by Kraepelin as an example of how modern diagnostic techniques in many ways represent a return to the classical medical approach. After these illustrations, we discuss how this reaffirmation of the “medical model” (Guze 1992) may represent the best hope for solving some of the thorny issues that confront psychiatric clinicians and researchers.

Kraepelinian diagnostic conventions

Kraepelin drew on the traditions of 19th century science in his quest to classify psychiatric disease. Like the Linnaean botanists, Kraepelin’s method for classifying cases was founded in a careful study of form. For a disease, this includes the presenting symptoms, the onset and offset of symptoms, the course, and the outcome. Using these time-honored traditions, most medical illnesses (not just those of psychiatry) were classified into categories by scientists of the 19th and early 20th centuries. Kraepelin based his descriptions and classifications on observations of patients from inpatient psychiatric settings. Even presently, for major psychiatric illnesses we are left with many of the same tools that Kraepelin used. Diagnosis and classi-

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fication in psychiatry still depends, for the most part, on careful observation of signs, symptoms, and course. Psychiatry has lagged behind other medical specialties in identifying specific pathological abnormalities and in determining the specific pathophysiology of mental illnesses. We are just recently beginning to elucidate the mechanisms of the underlying disease processes. Thus, a Kraepelinian approach to the study of psychiatric illnesses remains relevant, because it provides a means to improve classification and treatment even in the absence of fully informed causal mechanisms.

One of Kraepelin's most important contributions to modern psychiatry was the differentiation of manic-depressive psychosis from dementia praecox (Kraepelin 1919, 1921). In differentiating these two functional psychoses, Kraepelin laid the foundations for the modern understanding of the differences between affective and non-affective psychoses. These careful distinctions even provided the backdrop for the specific treatments of manic-depressive psychosis with lithium (and other antimanic agents) in contrast to the nonspecific treatment of other psychoses with neuroleptics.

In his work on dementia praecox, Kraepelin followed a traditional medical approach in describing the syndromes. His chapters cover psychic symptoms, the general psychic clinical picture, bodily symptoms, clinical forms, the course, outcome, neuroanatomy, possible causes, and differential diagnosis. These categories define a classical approach to diagnosis. However, like all good clinician scientists, Kraepelin was dissatisfied with his results. George Robertson, who wrote the introduction to the English-lan-

guage version of *Dementia Praecox* (Kraepelin 1919), writes "[Kraepelin] is not satisfied with his delimitation of its boundaries, nor with all the subdivisions which he has created, though he believes that his main thesis has been substantiated." The authors of the most recent diagnostic nomenclatures, namely ICD-10 and DSM-IV, would probably agree with this summation that the main issue of the presence of schizophrenia is hardly in doubt, but the subtypes and the delineation of the boundaries of schizophrenia remain problematic, even at this late date. Of course, one of Kraepelin's main theses, that dementia praecox had a core component of deteriorating cognitive functioning, is not so emphasized by other authors, but his precise, scientific approach to the clinical situation remains exemplary.

Table 1 contrasts Kraepelin's approach to the diagnosis of schizophrenia with the DSM and the ICD. This table illustrates the major conceptual framework for diagnosing schizophrenia according to each of the systems without specific comparison of the individual criteria. This is meant to be a comparison of diagnostic styles. Ratings in the table were based on careful reading of the sources (i.e., Kraepelin's treatise on dementia praecox and sections on schizophrenia from the various editions of DSM and ICD). A rating of "0" was made if that diagnostic system did not mention that component; a rating of "1" was made if the component was mentioned without elaboration or specific discussion; and a rating of "2" was made if the component was clearly operationalized or described. The purpose of Table 1 is to illustrate broad differences in diagnostic approaches. Thus, the specific inclusion or ex-

Table 1 Characteristics of approaches to the diagnosis of schizophrenia/dementia praecox. 1 vague; 2 clearly described; 0 not mentioned

Component	Kraepelin ^a	DSM-I	DSM-II	DSM-III	III-R	DSM-IV ^b	ICD-8	ICD-9	ICD-10
Psychotic symptoms	2	1	1	2	2	2	2	2	2
Bodily symptoms	2	1	1	2	2	2	1	1	2
Associated features	2	0	0	2	2	2	1	1	1
Age of onset	2	0	0	2	2	2	1	1	1
Clinical subtypes	1	1	1	2	2	2	2	2	2
Course	2	1	1	2	2	2	1	1	1
Impairment	2	1	1	2	2	2	1	1	1
Outcome	2	1	1	2	2	2	1	1	1
Risk factors	2	0	0	2	2	2	0	0	0
Prevalence	0	0	0	2	2	2	0	0	0
Gender ratio	1	0	0	2	2	2	0	0	2
Familial pattern	1	0	0	2	2	2	0	0	0
Differential diagnosis	2	0	1	2	2	2	0	0	1
Specific criteria	1	0	0	2	2	2	1	1	2

^a From Kraepelin (1919)

^b DSM-IV criteria are from the draft criteria. It is assumed that the discussion section, which has not yet been released, will be similar to DSM-III and III-R

clusion of any single component will not necessarily be important. Nevertheless, we think that the overall pattern may help to show important differences in the classification systems.

DSM approach

In 1952 the first edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-I) was published by the American Psychiatric Association (APA). This document followed in a line of manuals written by the American Medical Association for the classification of all diseases. In fact, DSM-I was the chapter on Diseases of the Psychobiological Unit from the Fourth Edition of the Standard Nomenclature of Diseases and Operations. With this edition the APA assumed responsibility for future revisions of statistical manuals for mental disorders, and therefore separate publications were undertaken, eventually leading to the second, third, third-revised, and (presently) the fourth editions of DSM!

The DSM-I represented a response to previous diagnostic manuals that had been published primarily for public mental hospitals. The experience of psychiatrists in World War II was such that the diagnoses used in public hospitals were very frequently inappropriate for the cases seen in the military. These military cases included minor personality disturbances, neurotic disorders, and psychosomatic disorders, all of which received short descriptions in manuals designed for public hospitals. The DSM-I was an attempt to standardize disparate approaches after World War II, namely the international statistical system, the Veterans Administration revisions of Army systems, and the experiences of psychiatrists from the War. Perhaps reflecting the theoretical constructs of the authors of DSM-I, all disorders in DSM-I were called "reactions." This may reflect a bias from the experience of the World War II psychiatrists who saw so many stress-related cases that "reaction" became the operative norm for psychiatric illness.

The descriptions and criteria for schizophrenia serve to illustrate the approach taken in DSM-I. Although it was written in DSM-I (p. 26) that the diagnosis of schizophrenia was "synonymous with the formerly used term dementia praecox," the operationalization of Kraepelin's concepts in DSM-I were much broader than those of Kraepelin. One telling detail is that the introductory description for the schizophrenic disorders is nine lines long and the entire section on the schizophrenic disorders is three pages. As shown in Table 1, no specifically operationalized criteria were given for the diagnoses. Differential diagnosis was not mentioned, and little information was provided about other related features of the disorders. This is in contrast to the careful delineation of dementia praecox by Kraepelin.

The second edition (DSM-II) was published in 1967 to coincide with the development of ICD-8. This second edition of DSM was promulgated with the express goal of facilitating "maximum communication within the profes-

sion and reduce confusion and ambiguity to a minimum". For this edition the term "reaction" was dropped from all labels. As seen in Table 1, DSM-II improved on DSM-I by adding differential diagnosis with discussion of the distinction between schizophrenia and affective psychoses. Unfortunately, DSM-II retained a vague impressionistic approach to diagnosis, which, like DSM-I, at best approximated the original Kraepelinian diagnoses (or those of the other major figures, Bleuler and Schneider) and was a much broader category because of the lack of specificity. Also like DSM-I, the description of schizophrenic disorders in DSM-II was brief: The introduction to these disorders is 13 lines and the entire section on schizophrenic disorders is 3 pages. Some of the difference between DSM-II and the Kraepelinian concepts may be accounted for by this brevity.

The third edition (DSM-III) marked a major shift in diagnostic style. This major shift was spearheaded by Dr. Robert Spitzer and was based on the success of the Washington University criteria (Feighner et al. 1972) and the Research Diagnostic Criteria (Spitzer et al. 1978) the latter of which were developed by Spitzer in collaboration with the Washington University group. Instead of imprecise, vague diagnostic categories, most of the DSM-III categories have precisely operationalized criteria with description of symptoms, associated features, age of onset, course, complications/impairment, prevalence estimates, gender ratio, familial pattern, and differential diagnosis. Thus, in many ways the approach in DSM-III was remarkably similar to the approach of classical diagnosticians such as Kraepelin.

Again, we consider the conceptualization of schizophrenia in DSM-III to illustrate differences and similarities with Kraepelin's approach to diagnosis. As seen in Table 1, the approach to schizophrenia in DSM-III is much more similar to Kraepelin than previous editions of DSM. Despite this similar approach, many details in the diagnoses remain different. The DSM-III has highly specified criteria and does not emphasize cognitive decline. In addition, DSM-III includes reference to family studies and prevalence rates that were not available to Kraepelin. These specific differences do not diminish our central thesis nearly so much as the similarities in style that are found in DSM-III support it; DSM-III has a characteristically medical approach to diagnosis that is very similar to Kraepelin's, despite that certain specific criteria differ. Even the length of the DSM-III section on schizophrenia is consistent with a return to an emphasis on diagnosis. The introduction is 7 pages, and the entire section is 12 pages. Although the length itself may not necessarily indicate quality, this increase over previous editions shows that ample space is provided to describe some of the intricacies of diagnoses.

The third edition-revised (DSM-III-R) and the (soon to be released) fourth edition (DSM-IV) approach psychiatric diagnosis in ways that are conceptually similar to DSM-III and markedly different from DSM-II and DSM-I. Certain specific criteria have changed in DSM-III-R and DSM-IV compared with DSM-III, but the approach to diagnosis

(particularly of the major psychiatric conditions) remains firmly medical, i.e., the approach is similar to that taken by physicians in other specialties where diagnoses are defined, in the absence of specific pathology, by descriptive criteria.

Like DSM-III, the two newer diagnostic systems have highly specific criteria, and in this regard, may even go beyond Kraepelin in delimiting the disorders on the basis of certain symptoms, signs, and course. This criterion specificity may give a false sense of precision, but the alternative, which is to use abstractly defined criteria, has been shown to allow so much variation in classification that clinicians in different areas approach diagnoses in markedly different ways. One example of such discrepancy is in the U.S.-U.K. Diagnostic Project, where differences in diagnostic rates between two different areas (namely the New York City area and London area) were almost completely due to differential labeling of cases, rather than to true prevalence differences (Cooper et al. 1972). The DSM-III and its newer versions, DSM-III-R and DSM-IV, help to avoid such methodological discrepancies by providing highly structured diagnostic systems that are face-valid and have acceptability to a broad range of clinicians (Spitzer et al. 1983). The danger in such systems is that precise criteria might be confused with precise boundaries of the diagnoses themselves. Precisely operationalized diagnostic criteria do not equate with valid diagnoses. Psychiatry has not progressed to where we can be certain of the limits of the conditions we diagnose even if the diagnostic systems are reassuringly specific.

To recapitulate, the DSM system underwent a radical shift with the introduction of DSM-III. Diagnosis in DSM-III and its newer progeny utilize a classical approach in which symptoms, course, predisposing factors, familial pattern, and differential diagnosis are considered. For schizophrenia, in particular, the first two editions of DSM gave up the Kraepelinian and Bleulerian criteria in favor of a broader definition that allowed a much wider range of symptoms. Perhaps most important, these three newer editions of DSM have reintroduced the importance of diagnosis to American psychiatry (and to many international colleagues).

ICD approach

The newest version of ICD, namely ICD-10, represents a significant paradigm shift to include operationalized diagnostic criteria. Previous versions of ICD were more rigorous than early U.S. diagnostic systems (i.e., DSM-I and DSM II), but still lacked the clearly defined criteria now found in ICD-10. In the introduction to the ICD-8's *Glossary of Mental Disorders and Guide to Their Classification* (WHO 1974), Sir Aubrey Lewis writes, "Since the disorders listed in this glossary are identified by criteria that are predominantly descriptive, its use should encourage an emphasis on careful observation." This perspective is markedly different from the perspective of DSM-I or

DSM-II (which was written at about the same time as ICD-8). The international scene, it seems, remained closer to Kraepelin and his generation of descriptive classifiers than the U.S., where inferences about hypothetical etiologies reigned supreme and diagnosis was minimized. Nevertheless, both ICD-8 and ICD-9 retained a simple descriptive style that avoided specific criteria in favor of "guidelines." Not until ICD-10 is a highly structured approach to diagnosis seen in the ICD system. Thus, ICD-10 represents a major change for the international system just as DSM-III did for the U.S.

The various approaches to the diagnosis of schizophrenia taken in ICD-8, 9, and 10 are seen in Table 1. It can be readily appreciated that ICD-8 and ICD-9 approach schizophrenia similarly. In fact, for these editions of ICD, schizophrenia is discussed in nearly identical ways. Both of these editions take a descriptive approach to the diagnosis of schizophrenia and include much more detail than their U.S. counterparts. In ICD-10, however, a shift is discerned. With this edition ICD adopts a similar strategy to that of DSM-III, DSM-III-R, and DSM-IV. Namely, specific criteria are used in making schizophrenic diagnoses and the manual includes discussion of the diagnostic gender ratio and differential diagnosis.

These differences in ICD-10 from earlier editions are less startling than the differences in the DSM editions, and it is harder to say that the ICD system had "abandoned" descriptive psychiatry as was apparent in much of U.S. psychiatry. Thus, it may be an overstatement to say that ICD-10 represents a "return" to Kraepelinian practices (i.e., the "neo-Kraepelinian revolution"). The ICD-10 can more accurately be seen as a progression to a more highly operationalized system instead of a revolutionary new approach. Finally, the ICD has, in all editions, more closely resembled the medical-model approach described below than the DSM did in its early editions.

Medical-model psychiatry

The epitome of the medical approach to any disorder is to diagnose the illness, plan treatment, and predict outcome. Applying the medical model to psychiatry implies that the "concepts, strategies, and jargon of general medicine are applied to psychiatric disorders: diagnosis, differential diagnosis, etiology, pathogenesis, treatment, natural history, epidemiology, complications, and so on" (Guze 1992, p. 4). In psychiatry the medical model is employed because it may give the greatest chance to discern new ways to prevent psychiatric morbidity (i.e., primary, secondary, or tertiary prevention) just as it has in other branches of medicine. The medical model is a "skeptical" approach in that clear, scientifically plausible evidence is needed for a theory to be accepted. On the other hand, like all other medical specialties, evidence about treatment and pathophysiology do not necessarily have to go hand in hand, and novel approaches are always acceptable if based on available evidence. Differential diagnosis is a key component in the medical approach, because it forces the clinician to

weigh the possible explanations for a given patient's symptoms/signs and is based on a general understanding that variability of presentation is usual for virtually all illnesses (at least to some degree).

Despite the popularity and success of the medical model, this approach to psychiatric illness has several "competitors" in the literature. Most prominently are the psychodynamic (or psychoanalytic) models, the sociocultural models, the behavioral models, and that recent hybrid particularly promulgated by the American Psychiatric Association, the biopsychosocial model (APA 1992). The plural "models" is used for these discussions to acknowledge that each of the mentioned categories has (at least) several markedly different constructs within the general category.

The medical model differs from the other models in many important ways. The most fundamental difference is that each of the other models seeks to "explain" psychiatric illness in terms of various external factors, and neglects the primary organ of psychiatric illness, the brain/mind. The medical model is without a priori theory, but does consider brain mechanisms to be a priority. Because it can encompass the other models to the extent that they are backed up by scientific evidence, the medical model can be considered one of the most liberal models. Practitioners are constrained only by practical application of theory to clinical situations. The other models all require strict adherence to particular theoretical perspectives.

Psychodynamic models have offered comprehensive explanations of all human behavior, including normal behaviors and pathological conditions. Most psychodynamic theories are developed from the notion that unconscious memories and experiences from childhood and infancy are expressed indirectly through dreams, slips of the tongue, and psychiatric symptoms. The underlying assumptions have been called "psychological determinism" in which all behavior is the result of psychological causes (Gabbard 1990; Sullaway 1979). A second and related assumption is that a symptom must have some underlying meaning for a patient. In this way symptoms are considered windows into the unconscious, rather than having some external validity of their own. Where psychodynamic models get into particular trouble is when they ignore evidence from biology and epidemiology, because they do not fit into the preconceived causal framework. It is also a problem that psychodynamic theories are essentially unprovable (Spence 1987). Being unprovable (and also impossible to *disprove*) these models violate a fundamental scientific principle that only testable hypotheses are worthy of investigation.

The sociocultural models in their extreme form also seek to explain psychiatric symptoms and conditions as being "caused" by external factors (Dunham 1965; Brown and Harris 1978). The limitations of these theoretical positions have been discussed in the literature (Tennant and Bebbington 1978). Sociocultural models are useful in part because (unlike psychodynamic models) they are often testable. Furthermore, most would agree that social and

cultural factors have been shown to be important for a variety of illnesses, not just psychiatric (Feinstein 1985). The medical model will not eliminate social and cultural factors from its understanding of disease processes, but will not ascribe to social and cultural factors alone a causative role; because to do so would ignore much evidence from biology and epidemiology that the brain is also important in the expression of psychiatric illness.

Similar to sociocultural models, behavioral models of psychopathology have many appealing aspects, particularly in that behavioral treatments have been shown to be very helpful in treating certain psychiatric conditions, especially depressive and anxiety disorders. Behavioral theory has been particularly useful in describing certain human behaviors in terms of experimental paradigms. The limitation is that not all clinical psychiatry can be explained in terms of behaviorism. The brain as the organ of psychiatric illness is particularly ignored in behavioral models in which responses may be considered solely due to environmental factors (Skinner 1959).

Finally, the last alternative model, the biopsychosocial, seems appealing in that all other models are given equal weight. In many ways, all medical specialties could be considered as having a biological component, a psychological component, and a sociocultural component. What is missing from this model is the usual respect for the organ system involved – the brain. In other branches of medicine, the specific organ system would take priority for the physician. The medical model when applied to psychiatry would imply the same priorities: the brain and how brain mechanisms are related to functional impairment would be considered the first goal of medical-model psychiatry. Psychological and sociocultural factors remain important, and in certain cases, of primary interest, but they do not supplant study of the brain as the organ of psychiatric illness.

So how does the medical model apply to psychiatric diagnosis? The European tradition of medical psychiatry contrasts with the U.S. tradition of treatment of neurotic disorders, a tradition that grew out of the World War II experience and the treatment of "reactions" (the general term used throughout DSM-I). In fact, for much of U.S. psychiatry diagnosis became superfluous in the attempt to use psychoanalytic formulations to explain all phenomena, thus the emphasis on "cause" not symptom (Alexander and Ross 1952). The medical model has been reintroduced to U.S. psychiatry in the past 20 years with the resurgence of interest in psychiatric diagnosis in psychiatry. A medical approach is implicit in recent publications concerning validity of psychiatric diagnosis (Robins and Guze 1970; Guze 1978; Robins and Barrett 1989; Goodwin and Guze 1989). As such, the modern medical model approach to diagnosis of psychiatric conditions is similar to the techniques used by Kraepelin.

Kraepelin represents the history of careful descriptive psychiatry in which symptoms, signs, and course are paramount in understanding and classifying psychiatric illness. The medical model of psychiatric illness is consistent with this approach, and therefore can be considered

"neo-Kraepelinian." The implications of accepting this model are a hope and expectation that a medical approach to psychiatric illness (in contrast to other approaches) will lead to the most progress in understanding and improving treatment of these devastating and common brain/mind illnesses, just as the medical model has led to great progress in solving diseases of other major organ systems (such as the heart, lungs, or endocrine systems).

Conclusions

Nonspecific and vague criteria contributed to poor reliability (and thus validity) for the earlier diagnostic systems. In contrast, the new diagnostic systems have led to the return of descriptive psychiatry by emphasizing the importance of symptoms, signs, and course in psychiatric diagnosis. This may be the essence of the medical model and of "neo-Kraepelinian" psychiatry in which conventions have come "full circle" to some of the most important roots.

Kraepelin represents an eminent example of the scientist as classifier. Through much of the 20th century, psychiatry (especially American psychiatry) has been consumed with dynamic formulations that promised to have answers for *all* diseases, and in fact, to explain all human behavior in terms of unconscious mechanisms. The importance of the different categories of mental illness was minimized if not completely ignored. What has been seen in the past 20 years, and most recently in the ICD-10 and DSM-IV revisions, is a return to empiricism and specificity in diagnosis. Not that any of these systems is without fault (there are many), but they represent a return to a time-honored and reasoned approach in which observation of similarities among cases allows their classification.

Medical model psychiatry, which is particularly reflected in the newer diagnostic systems, represents a return to a type of psychiatry emphasized by Kraepelin in his influential textbooks of psychiatry. This model may be much more familiar to nonpsychiatrists than to the psychoanalysts, sociologists, or behaviorists of other psychiatric models, and therefore the model can be considered revolutionary. This "neo-Kraepelinian" revolution in diagnosis (i.e., the return to the medical model) has been particularly startling for American psychiatry, which had nearly abandoned diagnosis in its love affair with all encompassing psychodynamic theories of mental illness. In the "new" approach, theory does not determine the rules of classification, but observation does.

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