An integrative approach to psychiatric diagnosis and research

Dan J. Stein
Department of Psychiatry, University of Cape Town, Cape Town, South Africa

Much attention has been paid to revisions of psychiatric classification systems. Nevertheless, there remains significant dissatisfaction with the nosology. From a neuroscience perspective, diagnostic criteria have failed to incorporate neurobiological data, and a focus on “circuit-based behavioral dimensions” (1) will improve diagnosis. From a more critical perspective, given that psychiatric disorders do not represent valid disease entities (1), diagnosis merely medicalizes problems in living.

These specific debates echo larger debates about classification in medicine, in which many emphasize notions of disease, arguing that clinicians must...
be scientists who understand physiology, while others emphasize the experience of illness, stating that clinicians must be humanists who understand suffering (2). An integrative medicine and psychiatry arguably recognizes each of these aspects of being a good diagnostician and researcher (3,4).

From an integrative perspective, ongoing work on nosological systems is needed to optimize diagnostic validity and utility. To the extent that the RDoC framework leads to research that allows such progress, it should be supported. However, I worry that many DSM-5 and ICD-11 critics may have unduly high expectations of diagnostic systems. Insofar as the RDoC framework sets unrealistic goals for nosology, caution is needed. Along these lines, I would emphasize the following points.

First, a clear goal of medical and psychiatric classification is clinical utility, which is only partly related to underlying pathophysiology. In medicine, the diagnosis of a syndrome, such as cardiac failure, may provide little information about precise etiology, but nevertheless may help guide treatment (5). In psychiatry, many entities are syndromic. While syndromes may have multiple causes, blurry boundaries, and absent biomarkers, they also are clinically useful.

It may be counterargued that much of medicine focuses on specific etiologically-based entities, e.g., viral pneumonia. Psychiatry too has specific diseases, such as psychosis due to neurosyphilis. But these exceptions prove the rule; many diagnoses in medicine and psychiatry reflect the fact that patients present with variegate symptoms underpinned by multiple mechanisms (6). Some cases of hypertension, headache, and depression are due to single gene variants or other circumscribed pathophysiologies; the majority reflect multiple influences.

Second, given that multiple mechanisms play a role in producing psychiatric signs and symptoms, foregrounding any particular diagnostic validator, such as “circuit-based behavioral dimensions”, has both pros and cons. Science has progressed from Hippocrates’s account of the “humors” to theories of the neurocircuitry basis of positive and negative valence, but it is possible that, a century from now, circuitry concepts will be considered rudimentary. On the other hand, the construct of depression, which is based on several other validators, may continue to resonate with eons of clinical descriptions.

DSM-5 distinguishes between anxiety and obsessive-compulsive related disorders partly on the basis of the different neurocircuitry underpinning these conditions. But there are also strong arguments for lumping these disorders on the basis of considerations such as response to serotonin reuptake inhibitors and cognitive-behavioural treatments (7). We need to accept that diagnostic systems cannot “carve nature at her joints”. Rather, facts and values need to be continually re-assessed, to try optimize classifications.

Third, given the multiple mechanisms underlying psychiatric complaints, and the many considerations relevant to treatment decisions, we should be cautious in our expectation that diagnostic criteria or thresholds will ultimately be based on behavioral dimensions or biological markers. Simple assessments, such as blood pressure measurement or mental status examination in medicine and psychiatry, can provide important information. Still, such information is partial. In medicine and psychiatry, deciding on whether and how to intervene necessarily requires a complex assessment of a range of factors, including understanding the function of symptoms, their social context, and the risks versus benefits of treatment.

One set of factors sometimes neglected by critics of nosology emerges from a public health perspective. Psychiatric classifications focus on individual disorders, where underlying “endophenotypes” may be relevant. However, it may be as important to address “exophenotypes”, i.e., societal phenomena, such as interpersonal violence, that crucially contribute to the burden of disease (8). Furthermore, decisions about thresholds for psychiatric intervention may need to include not only facts about underlying neurobiological mechanisms, but also considerations such as the cost-effectiveness of particular interventions.

Given that the RDoC framework encourages research on a broad range of phenomena and mechanisms, it is hard to be overly critical. By adopting a translational approach that encompasses different levels of investigation, RDoC may well contribute to advancing personalized medicine. Still, we need to be cautious of medical strawmen, such as the physician who relies solely on laboratory tests to determine diagnoses, or the public health practitioner who eradicates pathogens using simple interventions such as handwashing. No matter how many dollars we pour into behavioral neuroscience, we may have to accept that there are few diagnostic biomarkers for psychiatric disorders, and few mosquito nets to combat them (9).

Indeed, given the complexity of medicine, psychiatry provides a number of approaches worth emulating. Thus, a physician faced with a patient with headache should be able, after a careful history and examination, to diagnose a particular headache syndrome (indeed, headache classification takes a DSM-like approach (10)). Then, based on neuroscience knowledge, as well as a range of other considerations, one or another intervention may be chosen. Similarly, a physician faced with a complex public health problem, such as substance abuse, knows that the causes are complex, that a range of responses are needed (and that, as in much of psychiatry, there is no mosquito net).

For the foreseeable future, an integrative approach to psychiatric diagnosis and research ought to incorporate DSM/ICD, RDoC, and a broad range of other constructs.

References

Preserving the clinician-researcher interface in the age of RDoC: the continuing need for DSM-5/ICD-11 characterization of study populations

MICHAEL B. FIRST
Columbia University and New York State Psychiatric Institute, New York, NY, USA

For the past 35 years, clinicians and researchers in the United States have utilized essentially the same diagnostic system for the purposes of describing patients’ symptomatic presentations. Having common diagnostic definitions for both research and clinical practice has had a number of advantages. It has made possible the transfer of information between the ever growing clinical research literature and clinical practice. Because the same criteria are used for diagnosing patients in both settings, it is easier to translate findings of a research paper to the diagnosis and treatment of the next patient that one might see in an office practice. This approach also ensures greater clarity of communication within and among areas of psychiatric practice. Most importantly, this approach facilitates the necessary dialogue and mutual influence between clinicians and researchers.

Recognizing the value of operationalized diagnostic criteria for facilitating communication among clinicians and researchers and improving the reliability of diagnostic assessment, in 1980 the American Psychiatric Association adopted diagnostic criteria as the centerpiece of the DSM-III classification. The expectation was that, in addition to improving clinical assessment, they would be widely adopted by the research community.

Subsequently, most of the psychiatric research literature since DSM-III has been keyed to DSM categories, thus facilitating its application to clinical practice. The hope was that iterative refinement of the diagnostic criteria sets through successive validation studies would eventually elucidate their underlying etiologies (1,2). However, despite years of intensive investigation, researchers using the current DSM paradigm have “failed to identify a single neurobiological phenotypic marker or gene that is useful in making a diagnosis of a major psychiatric disorder” (3, p. 33). While much of this lack of success reflects the enormous complexity and relative inaccessibility of the human brain (4), undoubtedly a major contributor is the fact that the DSM categories are a poor mirror of nature.

Although it has become increasingly evident to researchers over the past 20 years that the DSM categories do not represent valid disease entities, the entrenched hegemony of the DSM system and the conservative nature of review processes has led to researchers being pressured to use the DSM-IV categories “in order to satisfy most grant-making bodies, journal reviewers and editors, and organizers of scientific meetings” (5, p. 156).

One of the main goals of the National Institute of Mental Health’s RDoC project is to release the research community from the shackles of the DSM/ICD categorical system by providing an alternative framework for conducting research in terms of fundamental circuit-based behavior dimensions. Given its role as the premier governmental body funding psychiatric research in the United States, the NIMH is uniquely positioned to incentivize researchers to adopt such a framework and thus it is likely that most NIMH-funded research over the next decade will adopt the RDoC framework.

While this has the potential to be a positive step that facilitates the development of the requisite research literature “to attain groundbreaking nosological approaches in the future that are based upon genetics, other aspects of neurobiology, and behavioral science” (6), it has the potential drawback of impeding clinicians’ ability to make clinical sense of such research and apply it to their patients, whose clinical presentations will likely continue for the foreseeable future to be thought of in terms of the DSM/ICD-type categories.

Indeed, one of the central thrusts of RDoC is to discourage the use of the DSM/ICD syndromal constructs by researchers in either research design or subject selection, except insofar as is necessary during the research community’s “transition” from the DSM/ICD to RDoC. As noted by Cuthbert, many if not most of the symptoms that form the basis for DSM psychiatric assessment and treatment do not appear in the