Research Domain Criteria: toward future psychiatric nosologies

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The Research Domain Criteria (RDoC) project was initiated by the National Institute of Mental Health (NIMH) in early 2009 as the implementation of Goal 1.4 of its just-issued strategic plan. In keeping with the NIMH mission, to "transform the understanding and treatment of mental illnesses through basic and clinical research," RDoC was explicitly conceived as a research-related initiative. The statement of the relevant goal in the strategic plan reads: "Develop, for research purposes, new ways of classifying mental disorders based on dimensions of observable behavior and neurobiological measures." Due to the novel approach that RDoC takes to conceptualizing and studying mental disorders, it has received widespread attention, well beyond the borders of the immediate research community. This review discusses the rationale for the experimental framework that RDoC has adopted, and its implications for the nosology of mental disorders in the future.

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Introduction

The genomics revolution of the past decade has necessitated a renewed interest in diagnosis across all areas of medicine. For example, cancer is increasingly diagnosed in terms of the tumor's genetic signature,[1] and both type 1 and type 2 diabetes are recognized as many different diseases at the molecular level.[2,3] Deeper understanding of disease mechanisms has led to companion diagnostics that are tightly linked to specific new treatments, as exemplified by the new cystic fibrosis drug Kalydeco, which is highly effective in managing symptoms for the 4% of patients with a particular polymorphism.[4]

These findings—collectively referred to as "precision medicine"—have transformed ideas about diagnosis and treatment throughout all areas of the biomedical research community. The US Institute of Medicine released a report in 2011 discussing the opportunities and challenges of precision medicine, calling for an "information commons" that could facilitate identification of particular groups of patients and the potential for treatment on the basis of data mining.[5] Statistical designs for clinical trials have changed markedly, with such innovations as adaptive designs to reveal optimal matching of various therapeutics to disease subtypes.[6] In addition,

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regulatory agencies have scrambled to update the regulatory pathway in a fast-changing environment in which the clinical target is often much more specific than a traditional disease, conventional clinical trials can seem out of date by the time they are completed, and treatment guidelines change quickly as outcomes from large clinical databases are updated.[7]

As in most other areas of medicine, psychiatric diagnoses have historically been based upon presenting symptoms. However, while work in disorders such as cancer and diabetes has moved ahead rapidly to field a variety of genomic and other biological tests, psychiatric nosology remains based almost exclusively on presenting signs and symptoms. There are, of course, good reasons for this lag. The brain is the most difficult organ in the body to reach, and also the most complicated. Further, mental disorders (in contrast to most neurological disorders) affect the most complex human functions—such as motivation, cognition, and social processes—that are extremely difficult to conceptualize and measure. Nevertheless, the science of brain and behavior has advanced to the point where it is possible (and indeed, necessary) to forge new approaches that can translate advances in brain and behavioral science to assessment and treatment.

RDoC represents an attempt by NIMH to create an experimental classification system that can provide a first step toward precision medicine for mental disorders. In keeping with an issue devoted to nosology, this article is intended to outline the rationale for the RDoC program and its stance as an experimental classification approach that cuts across current disorder boundaries. First, however, a brief summary will be provided for readers unfamiliar with the project; more thorough descriptions of the RDoC framework are available elsewhere.[8-11]

RDoC: just the facts

An internal workgroup of NIMH staff began deliberations for the new project in early 2009, deciding upon its overall configuration as well as the process to be followed. Four major axes comprise the overall RDoC framework. Neurodevelopment and environmental effects provide an important context for research conducted under the RDoC aegis, and studying these factors in a manner not constrained to any particular *DSM* diagnosis is of high priority. The third axis comprises the various dimensions that represent the primary objects of study. These dimensions, termed constructs to represent their status as empirically derived functional concepts whose precise meaning is subject to change on the basis of ongoing research, are grouped into five superordinate domains (thus, the Research Domain Criteria): Negative Valence (ie, those systems that coordinate response to aversive situations), Positive Valence, Cognitive Processes, Systems for Social Processes, and Arousal/Regulatory Systems (ie, those processes that activate and regulate brain activity and behavior). Finally, the fourth axis consists of measures that might be used to assess the constructs, as grouped into several Units of Analysis ranging from genes to circuits to behavioral measures.

A series of workshops (one for each domain, plus an initial "test run" meeting on working memory) was held between 2010 and 2012, with approximately 40 experts with relevant basic and clinical expertise at each workshop. The participants were tasked with determining a list of circuit-based constructs for the domain, creating a definition for each construct, and nominating measures at the various Units of Analysis that had been used in prior studies to measure the construct. (In many instances, there was a paucity of measures for one or more Units of Analysis, and measurement development is accordingly a high priority for the RDoC research program.) Proceedings of each workshop were posted to the RDoC page on the NIMH Web site.[12]

In keeping with RDoC's status as a classification system intended for use in research, a series of announcements with funding set-asides (a "Request for Applications," or RFA) was issued beginning in 2011 in order to generate a corpus of funded research using the RDoC criteria and to gain experience with the system in grant application reviews. As of the current writing, over 130 grants with relevance to RDoC have been funded (as determined by a search of the public NIH RePORTER Web site[13]); the portfolio totals over $60 million, representing nearly 15% of the Institute's translational research portfolio. Given that only about 20% of the applications have been funded through set-asides, it is apparent that RDoC grant applications have been competitive in general peer review committees, and the growth of the project is on track with NIMH's goal to increase gradually the proportion of RDoC grants in the translational portfolio.

The rationale for RDoC

The NIMH Research Domain Criteria (RDoC) project marks the second time in 40 years that an experimental nosology has been developed for mental disorders. The Research Diagnostic Criteria (RDC) were created in the 1970s in response to the problems in diagnosis that psychiatry experienced as it emerged from the long era of psychodynamic domination.[14] The particular concern that prompted the RDC was diagnostic reliability: due largely to varying theoretical orientations among psychiatrists, agreement between diagnosticians was lamentably low, severely hampering both clinical treatment and research. The RDC represented the first wide-scale adoption of the polythetic criteria sets that had been piloted with the earlier Feighner criteria,[15] and provided the primary foundation for the revolutionary third edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-III)* in 1980.[16] By providing theory-free criteria written in straightforward language and explicit rules for assigning diagnoses, *DSM-III* achieved its intended goal of providing generally satisfactory diagnostic agreement. The result ushered in the modern era of psychiatric research, leading to extensive literatures in psychopathology, epidemiology, and clinical trials, and also fostering extensions of psychiatric diagnoses into the legal system, insurance reimbursement, and disability evaluations.

RDoC marks the second iteration of an experimental classification system. This time around, the spotlight has fallen on the validity of the diagnostic system. The decades of research since *DSM-III* was published have increasingly shown that the diagnostic categories do not represent coherent disease entities, but rather are broad syndromes.[17-19] While diagnoses can be reliably established in most cases, they suffer from such problems as excessive heterogeneity, comorbidity, and overspecification.[20] These conceptual and operational difficulties hamper attempts to understand the pathophysiology of mental disorders and to develop novel new treatments, and are likely to be a significant part of the reason that pharmaceutical companies have turned away from psychiatric drug development.[21]

For contemporary clinical use, these problems might not make so much difference. Most treatments appear to be effective across broad ranges of clinical populations, eg, selective serotonin reuptake inhibitors, cognitive-behavioral therapy, benzodiazepines, and extinction protocols for anxiety disorders. Diagnostic uncertainties are sometimes resolved simply by trying out therapies: a psychotic patient with mixed features who responds to lithium must have bipolar disorder, and if not, the diagnosis becomes schizophrenia. Even within the clinical realm, however, problems persist. While effective treatments for mental disorders exist, they result in significant symptom remission only about half the time, and the choice of optimal treatments cannot be predicted on an empirical basis for individual patients; this results in frustrating (and sometimes fatal) delays in reaching effective relief.

The difficulties are more problematic, and increasingly pervasive, for research on the nature of mental disorders—notwithstanding the fact that historically, the authors of the *DSM* have signaled their intent that the *DSM* should be the definitive resource for both clinical and research needs. The preface to *DSM-IV* states, eg, "The purpose of *DSM-IV* is to provide clear descriptions of diagnostic categories in order to enable clinicians and investigators to diagnose, communicate about, study, and treat people with various mental disorders" (p xxvii).[22] Further, the role of the categories per se as the sine qua non for diagnosis seems open, as in the following comment in the introduction to the *DSM-III*: A "misconception is that all individuals described as having the same mental disorder are alike in all important ways. Although all the individuals described as having the same mental disorder show at least the defining features of the disorder, they may well differ in other important ways that may affect clinical management and outcome" (p 6).[16]

One may puzzle somewhat at the phrase "defining features of the disorder," given that the polythetic algorithms permit patients in a number of categories (eg, Major Depressive Episode or Borderline Personality Disorder) to be assigned a diagnosis with only one symptom in common. Overall, however, it seems a safe inference that the framers of the modern *DSM* were willing to accommodate subgroups or other individual differences within the categories that they had created. Fast-forwarding to the contemporary scene, the introduction to the *DSM-5* is also quite explicit in acknowledging problems regarding heterogeneity, fluid boundaries between disorders, and other problems of diagnostic validity.[23] It is evident that the leaders of the *DSM-5* were aware of such issues from the beginning of the revision process, and hoped to address the issues

in the new edition.[24] As an initial response, *DSM-5* contains an extensive section of assessment measures designed to account for cross-cutting symptoms; however, these remain at a relatively coarse level of symptom severity and are not likely to drive research applications that could relate such symptoms systematically to psychological or brain mechanisms.

Given this accommodation of heterogeneity and flexibility, why has the *DSM* increasingly been cited as a major constraint for research? The answer seems to be that its architecture, in providing such an exemplary degree of structure and precision (or, as some critics have alleged, pseudo-precision)—particularly compared with the diagnostic vacuum that existed before the *DSM-III*—resulted in a rapid reification of the disorder categories.[25] The diagnoses quickly shed their designation as provisional constructs and were implicitly accorded the status of genuine disease entities. As a result, the *DSM* nosology became the de facto standard for reviewing grant applications for clinical research and for publishing journal articles on psychopathology. This led to clinical trials targeting *DSM* entities, and it was inevitable that the FDA would recognize this approbation from the field as the set of indications in registration trials for new pharmaceutical treatments. In short, the entire biomedical machinery for mental disorders became organized around *DSM* categories.

The "disease entity" model discouraged grant applications proposing exploration of any heterogeneity or subtyping within disorders, such that the standard research design became one of Disorder versus Healthy Controls. While a few studies compared symptoms between two categories (such as schizophrenia and bipolar disorder), investigators complained that efforts to examine overlap or comorbidities were typically rejected by study sections on the grounds that "we have to understand each separate illness before we can explore the intersections." This inertia in review persisted even in the face of the increasingly noted problems with the validity of the overall structure and its consequent problems for diagnosis and treatment.[21,26]

This situation has created the paradox that innovations in research are needed to revise conceptions of mental disorders that can lead to precision medicine applications, but paradigm-shifting studies are largely precluded by the current constraints of grant review. It is apparent that at the current juncture, that, the hidebound structure necessitated by the *DSM*'s role in clinical practice—along with consequent demands such as insurance reimbursements, legal determinations, etc—is simply too restrictive to permit the flexibility required for rapidly evolving research grant evaluations. These considerations, bolstered by comments from investigators throughout the field, finally prompted the NIMH to include the goal for a new, experimental classification system in its 2008 Strategic Plan.

Given this decision, the form that such an effort might take was not necessarily clear. It was apparent from the genetic overlaps among disorders and the transdiagnostic mechanisms observed in functional and structural pathophysiology studies (reflected in extensive comorbidity) that an experimental system could not simply follow the lines of the current manual. Further, the diagnostic entities are so ingrained throughout the field that major alterations could not be broached in the context of the current scheme. This can be seen, for instance, in the composition of the various committees for the *DSM-5*. Had extensive changes been contemplated, the workgroups for mood/anxiety and schizophrenia/bipolar spectrum (as just two examples) might have been merged in order to facilitate potentially major revisions. Instead, an informed observer could see from the outset of the *DSM-5* process that the workgroup structure militated against any significant changes, and such was the outcome. Since the *DSM-III*, some new disorders have been added and a few removed (notably, the folding of Asperger's disorder into the autism spectrum in *DSM-5*), but successive editions largely made adjustments to the criteria without attempting fundamental modifications.

These observations affected the organizing principles of the RDoC project, which differs from the *DSM-III* in comprising a classification system intended purely for research purposes. Three decades of experience with the *DSM* criteria in peer review provided several insights into how such an experimental nosology might proceed. First, well-defined review standards are essential to provide consistency in peer review, allowing reviewers to evaluate research grants by a common set of metrics and "calibrate" their scores against each other. One of the clear strengths of the *DSM* in review (no doubt helping to account for its rapid reification) was the explicit list of criteria for defining disorders that provided reviewers with a ready yardstick for evaluating diagnostic procedures. Simply leaving applicants and reviewers to their own (non-*DSM*) devices in proposing and evaluating

selection criteria for patients in clinical research would lead to a chaotic situation in review, with no common agreement about how to evaluate the options.

On the other hand, it was equally evident that an experimental classification needed to avoid the opposite problem, of a system that became overly rigid and so difficult to change that it failed to keep up with the rapidly advancing pace of scientific discoveries—thus frustrating researchers' ability to submit grant applications informed by cutting-edge developments. This pair of "Scylla and Charybdis" hazards demanded a flexible set of guidelines that could provide consistent review standards while still accommodating fast-breaking new data.

This consideration led to the third conclusion, which involved the somewhat counterintuitive notion that the best way to create an experimental classification for disorders was to eschew any *a priori* definitions of disease states. Quantum gains in knowledge have been achieved over the past three decades regarding complex behaviors and the brain systems that implement them, an advance supported heavily by NIMH, other NIH institutes, and many other governmental and private funders. As just two examples, primordial ideas about a brain reward system[27] have given way to an increasingly differentiated understanding of the brain's systems for experiencing, learning about, and working toward reward[28,29]; and seminal studies of the role of the amygdala in fear have led to a much richer understanding of the systems that respond to different threat contexts and dynamically regulate emotional reactions in real time.[30-32]

Such work suggested the possibility of an alternative approach to psychopathology. Rather than starting with clinically derived definitions of mental disorders (necessarily based upon presenting signs and symptoms) and seeking biological or psychological correlates, RDoC reverses the process: the effort begins by creating a compendium of basic behavioral/cognitive functions and pertinent brain circuits, and then considers disorders in terms of dysregulation or dysfunction in these basic systems. The downside to such an approach consists of the fact that the classical symptoms of mental disorders—low mood, hallucinations, low self-esteem, the abnormal social behavior of autism—often do not equate in any obvious way to the brain/behavior systems so defined. The upside, however, lies in the potential for analyzing psychopathology in terms of the explosion of knowledge about the components of brain circuits and their relationships to complex behavior. Such a genuinely translational approach can be directly informed by ground-breaking initiatives such as the Human Connectome Project[33] and the US BRAIN initiative.[34]

This translational research direction provides the framework for RDoC's approach to providing clear, yet flexible guidelines for peer review. As noted above, expert participants at the five RDoC domain workshops were asked to devise a list of constructs to be included in that domain (starting with a draft list provided by the NIMH workgroup), based upon prior evidence in the literature. Each construct had to meet three empirical criteria to be included in the system. First, there had to be evidence for the validity of the construct as a functional unit of behavior or cognitive processes; second, there had to be evidence for a neural circuit or system that played a primary role in implementing the construct's function; and third, the construct had to evince relevance for understanding some aspects of psychopathology.

These three criteria are critical for understanding the flexibility of the RDoC approach to peer review. By definition, constructs are subject to refinement on the basis of ongoing research. Further, the constructs defined in the workshop process serve as exemplars of how the approach operates, and also are "pre-vetted" for use in grant applications. Finally, and critically, the framework encourages grant applications targeting new constructs in accord with its status as an experimental classification. The three criteria listed above provide the standard by which reviewers in study sections can evaluate the merits of proposed circuit-based functions. New constructs for which sufficient data become available can then be added to the matrix to provide dynamic, ongoing changes to the research framework.

Three other aspects of the RDoC framework also stem from the need to change the way that mental disorders are conceptualized and studied. While they are equally critical, they can be described here more briefly. First (as mentioned above), mental illnesses are increasingly understood to be disorders of neurodevelopment.[35] Just as the RDoC constructs are based on normal-range functioning, the study of normal development provides a basis for understanding aberrant trajectories at different points along developmental pathways. Establishing the equivalent of the classic height

and weight growth charts for children could provide valuable guidelines to promote earlier identification of behavioral problems and also provide helpful information about psychopathology that may not manifest until later in development.

Second, environmental events exert profound influences, not only in neurodevelopment—where their precise effects may depend critically upon the developmental stages at which they occur—but throughout the life course. Examination of environmental effects is hampered by the current dominance of the *DSM* in review, since environmental events such as stressors or trauma are known to affect many different disorders; studying the influences one disorder at a time (and typically excluding comorbidity) obfuscates the ability to uncover significant relationships that cut across disorders. While some critics have complained that RDoC ignores environmental events, in fact the framework is intended to promote a more systematic study of these critical factors. It is for these reasons that neurodevelopment and environmental effects are considered as major axes of the RDoC framework.

Finally, given a structure conceived in terms of basic functioning, the RDoC constructs are by definition dimensional—an approach that is obviously consistent with increasingly propounded dimensional views of psychopathology.[36,37] All basic functions display a range of performance, often normally distributed, and one goal of RDoC is to characterize this range quantitatively for each construct. Pathology can then be defined in terms of the degree of departure from the normal range, with the obvious capability of more readily establishing cutoff points to define (for example) mild, moderate, or severe levels of disorder. In addition, achieving such quantitative dimensional measures would facilitate prevention studies, which are frequently hobbled by a lack of consistent ways to connect risk states to overt psychopathology.

Implications of RDoC for research

The RDoC framework differs from standard diagnostic approaches to such an extent that it can be difficult to discern exactly how the system is intended to function in research. It may be useful to start by indicating what RDoC does not incorporate. First, it is important to note that the RDoC matrix was not designed to provide a multifaceted account of *DSM* disorders as such. That is, the intention is not to "explain" such traditional categories as depression or schizophrenia in terms of RDoC constructs, as this would obviously involve the same questions about the validity of the *DSM* categories (and the same problems of comorbidity, etc) as currently exist. However, this does not mean that various symptoms of *DSM* disorders are not of interest. The symptoms represent aspects of significant clinical impairment that deserve to be the focus of treatment efforts, and often these symptoms are observed in multiple disorders. It is the grouping of symptoms into what have turned out to be overly heterogeneous syndromes that poses the problems for research. In virtually all cases, individual symptoms are themselves complex clinical phenomena that require attention to multiple constituent mechanisms.

Second, there is a salient distinction between the first (RDC) and second (RDoC) versions of an experimental classification system, the former having given way relatively seamlessly to the current *DSM* architecture. The RDC were obviously intended to define disease entities, and the diagnoses in the list—determined by clinical consensus—were largely accepted as "givens" even if their definitions were altered somewhat on the basis of outcome data. This trend accelerated after the release of the *DSM-III* and the reification of the disorder categories. It is natural to make the implicit assumption that RDoC follows this tradition, such that the constructs are inferred to be the "real" disease entities in the system; to assume further that the function of research is to describe the pathophysiology of the constructs and seek biomarkers much as prior research using the *DSM* has operated; and finally, to assume that any changes will involve relatively minor tweaks to how the constructs are defined and measured.

However, these assumptions are not correct, for multiple reasons. For one thing, the RDoC dimensions have been instantiated as experimental constructs that are expected to change rapidly over time on the basis of new data. While some concerns have been expressed that the constructs may be subject to the same reification as *DSM* disorders, they are intended to be subject to continual, empirically based modifications in the natural course of grant submissions, peer review, and publications—a process that the RDoC workgroup at NIMH is committed to maintaining.

In addition, there is no definitive or consistent relationship between RDoC constructs per se and pu-

tative definitions of disorders for which treatment is indicated. For a few constructs, it is possible that the primary aspect of a clinical presentation may be assignable to a particular construct. An example might be excessive fear, as in anxiety disorders such as specific or social phobia; even here, however, there are findings of heterogeneity in threat reactivity that belie a simple "excessive fear circuit activity" for all patients.[38] More typically, complex clinical symptoms are likely to reflect the confluence of abnormalities in a number of different neural systems; auditory verbal hallucinations, eg, are themselves heterogeneous and, across different patients, may involve a number of different neural systems that are represented in the RDoC matrix.[39]

Finally, as mentioned above, the RDoC constructs represent basic functions with a translational extension to psychopathology, which is operationally considered as increasing dysregulation in functionality that can be construed as falling at one extreme or the other of the normal distribution. This view is consistent with prior perspectives about the dimensional nature of psychopathology and its relationship to normal-range functioning.[40] Thus, there is no simple mapping of disease/no-disease states onto the constructs.

Given these caveats, what would typical RDoC studies comprise? Investigators new to the framework sometimes suppose that a sufficient research design involves simply recruiting a transdiagnostic sample and gathering a multisystem set of measurements about one or another construct to see what falls out of an exploratory analysis. This, however, is seldom likely to be a productive approach. The intent rather is to use the matrix to pursue specific, hypothesis-driven research questions that are related to clinically significant symptoms or impairments. Generally speaking, there are four broad classes of phenomena that investigators might choose to investigate. First, relatively circumscribed clinical problems offer an opportunity to study a single construct with a focused research question; examples might include fear, working memory, or facial expression identification. Second, more complex problems such as hallucinations (as noted above), anhedonia, or complex social function deficits are likely to be heterogeneous in their own right, and require thoughtful attention both to specific aspects of the symptoms under study and also to the potential intersection of two or more constructs from multiple domains. Third, a similar but yet more complicated class might include symptom clusters that are observed to co-occur in current *DSM* disorders or disorder spectra, such as positive symptoms in psychotic disorders or vegetative signs in depression. While it seems reasonable to hypothesize that such clusters will have some common genetic and pathophysiological elements, a precision medicine approach will persist toward the ultimate goal of accounting for the significant heterogeneity of these clusters as well. Finally, broad temperament-related traits that are continuously distributed in the population and possess clear relevance for multiple disorders present opportune RDoC targets. Externalizing behaviors represent a promising example of this class of studies. While community and epidemiological studies have clearly shown that externalizing cuts across multiple disorders,[41] effective integration in this broad area has been constrained by the usual tendency of clinical research to focus upon only one disorder in any given study.

The kinds of samples and research designs that might be used in RDoC studies are quite diverse, again reflecting the desideratum to leave the system as open as possible for researchers to craft studies that optimally address their research questions. The minimal requirements for an RDoC research design would include a focused hypothesis about particular clinical impairments or risk factors (as above), measurements from multiple Units of Analysis, and the inclusion of at least some subjects exhibiting (or at risk for) clinically significant symptoms. Elements that contribute to stronger RDoC designs would typically include studies with samples from multiple diagnostic categories as appropriate to the research question; control groups that contribute to an analysis of the dimensional nature of the problem under study; and consideration of the developmental aspects (at all stages of the life course) of the research question, although this can be addressed in various ways and does not necessitate a longitudinal design in each case. While RDoC emphasizes transdiagnostic designs, it is acceptable for studies to focus upon deconstructing a single *DSM* disorder in terms of a dimensional and RDoC-informed approach, particularly if the investigator indicates the potential future expansion to other relevant disorders. The most critical factor is to consider the kind of sampling strategy that will power the study for analysis of the experimental hypotheses, which (as in all applications) is an essential component of peer review. While it is admittedly difficult for investigators steeped in traditional clinical research to reorient to-

ward such different study designs, the growing number of funded grants in the NIMH translational portfolio and the accelerating literature in this area demonstrate the importance of new perspectives about the relationships of brain and behavior with respect to mental illness.

Conclusion

This review has attempted to outline the major aspects of RDoC as an experimental classification for mental disorders, and to differentiate the approach from prior versions of research and clinical nosologies. The overall goal of the RDoC framework for research is to liberate investigators to pursue research questions in psychopathology that take advantage of burgeoning knowledge about complex behaviors and how these relate to specified aspects of brain activity. The tactic by which this strategy is pursued is to create standards for the review of research grant applications that provide not a fixed set of items for diagnosis, but rather a set of guidelines for evaluating the strength of hypotheses relating clinical symptoms or impairments to dimensions of behavioral functioning and neural systems. As these systems are largely orthogonal to current disorder classifications, the hope is that the research literature developed via the RDoC framework will lead to future revisions of the *International Classification of Diseases (ICD)* and *DSM* that can foster precision medicine approaches to more effective diagnosis, treatment, and, ultimately, prevention and cures for mental disorders. The exact shape that future RDoC-informed nosologies might take is not yet possible to discern, but just as with the current systems, the ultimate clinical utility will depend upon how well the diagnostic system can direct clinicians to rapid and effective treatment or prevention strategies for each individual patient. ❑

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Criterios del ámbito de la investigación: hacia futuras nosologías psiquiátricas

A comienzos de 2009 el Instituto Nacional de Salud Mental (NIMH) lanzó el proyecto Criterios del Ámbito de la Investigación (RDoC) como parte de la implementación del Objetivo 1.4 de su recién publicado plan estratégico. En conformidad con la misión del NIMH, para "transformar la comprensión y el tratamiento de las enfermedades mentales a través de la investigación básica y clínica" el RDoC fue concebido explícitamente como una iniciativa relacionada con la investigación. La declaración del objetivo pertinente en el plan estratégico señala: "Desarrollar, para propósitos de investigación nuevas vías de clasificación de los trastornos mentales en base a dimensiones observables de la conducta y mediciones neurobiológicas". Debido al novedoso enfoque que tiene el RDoC para conceptualizar y estudiar los trastornos mentales, ha recibido gran atención, mucho más allá de las fronteras de la comunidad de investigación inmediata. Esta revisión discute los fundamentos del marco experimental que ha adoptado el RDoC y sus repercusiones futuras para la nosología de los trastornos mentales.

Critères de domaines de recherche : vers une future nosologie psychiatrique

Le NIMH (National Institute of Mental Health) a lancé le projet de « Critères de domaines de recherche » (CDoR) début 2009, en tant qu'application de l'objectif 1.4 de son plan stratégique venant d'être publié. Les CDoR ont été conçus explicitement comme une initiative liée à la recherche, en phase avec la mission du NIMH pour « transformer la compréhension et le traitement des maladies mentales par la recherche fondamentale et clinique ». L'objectif exposé dans le plan stratégique est le suivant : « Développer, aux fins de recherche, de nouvelles façons de classifier des troubles mentaux selon des critères de comportements observables et des mesures neurobiologiques ». Cette nouvelle approche des CDoR pour concevoir et étudier les troubles mentaux a reçu une grande attention, bien au-delà des frontières des communautés de chercheurs. Cet article analyse le fondement du cadre expérimental adopté par les CDoR et ses implications dans l'avenir pour la nosologie des troubles mentaux.

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