How better definitions of mental disorders could aid diagnosis and treatment

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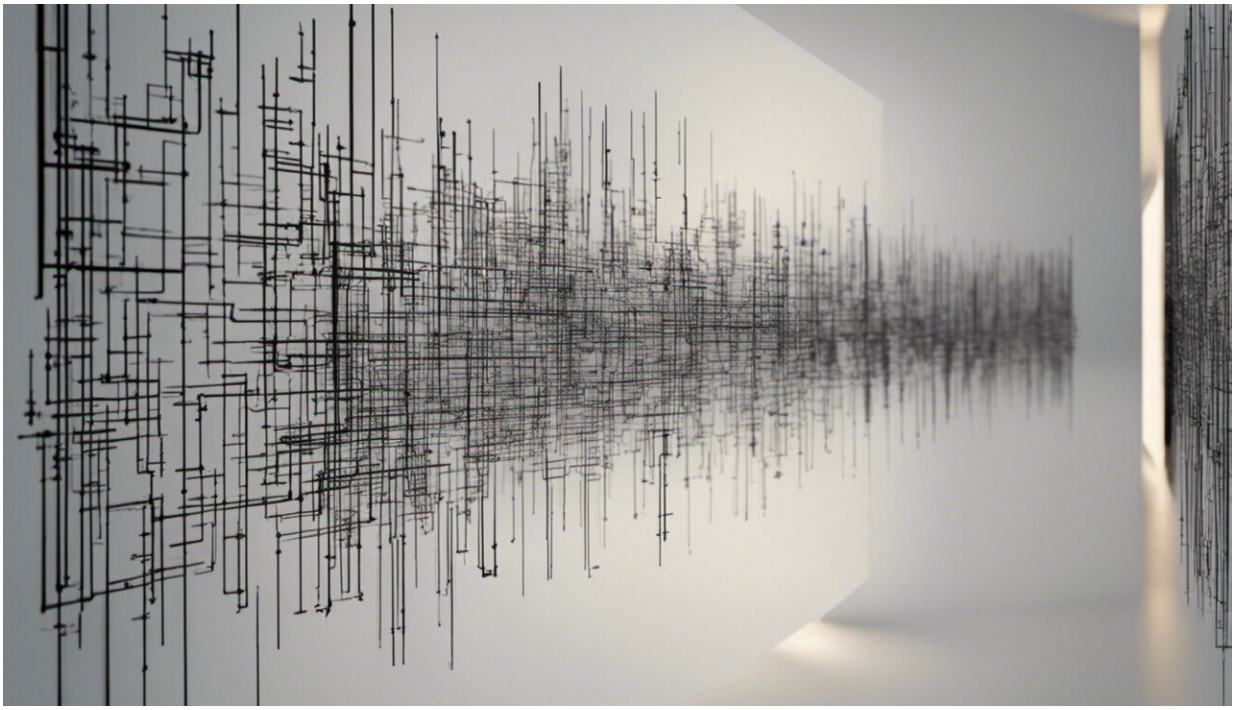

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Mental disorders are currently defined by the Diagnostic and Statistical Manual of Mental Disorders (DSM), which includes hundreds of distinct diagnostic categories, but a new study we worked on suggests we could do better.

Each category in the DSM has a checklist of criteria. If you meet "enough" (often, just over half) of these criteria, you are placed in that diagnostic category. For example, the checklist for major depression includes a list of nine symptoms, and you need to have at least five of those nine symptoms to receive a diagnosis.

DSM disorders provide labels to help clinicians communicate about their patients, refer patients to treatment programs and provide billing codes to insurance companies. These disorders drive the way we diagnose, treat and research mental illness. Yet the whole DSM system is inconsistent with the nature of mental illness, which cannot be classified neatly into boxes. Using the DSM's narrow and rigid categories of mental illness thus creates obstacles for effective diagnosis and treatment, and for generating robust research.

It is clear we need an alternative model for classifying mental illness that "carves nature at its joints" instead of imposing artificial categories for classification.

By following the patterns in the data on how people experience mental illness, this is exactly what we aimed to do in creating the Hierarchical Taxonomy of Psychopathology (HiTOP), which was published March 23. Fifty of the leading researchers studying the classification of mental illness came together to create the HiTOP framework. It integrates 20 years of research into a new model that overcomes many of the problems with the DSM.

Problems with using the DSM to describe mental illness

To show the problems with DSM evaluation, let's consider hypothetical patients James and John:

James is feeling depressed. He has gained a lot of weight, has difficulty sleeping, is often fatigued and struggles to concentrate. With these symptoms, James could be diagnosed with a major depressive episode.

John no longer enjoys his life and he has withdrawn from his loved ones. He feels "slowed down" to the extent that it is difficult to move, and he is unable to wake up in the morning. He struggles to make everyday decisions. Due to these symptoms, he recently lost his job. He then attempted suicide. With these symptoms, John could also be diagnosed with a major depressive episode.

John has more severe and disabling depression, and James and John have different presenting symptoms. These important distinctions between them are lost when both men are lumped together and simply labeled "depressed."

Their diagnoses can also easily disappear or change for reasons that may not reflect real or meaningful change in mental disorder status.

Slippery DSM diagnoses

For example, if John didn't have difficulty waking up in the morning, he would have only four of the symptoms for major depression. He would no longer meet the criteria to receive a diagnosis. The arbitrary diagnostic threshold (i.e., needing five of the nine symptoms on the depression checklist) thus means that John may no longer be able to access treatment covered by his insurance despite the impact his symptoms are having on his quality of life.

Further, the blurriness in the boundaries between DSM disorders means it is not always clear which diagnostic label fits best. Many disorders have similar checklists. If, for example, James were also experiencing chronic and uncontrollable worry in addition to his depression symptoms

– very common – he might be diagnosed with generalized anxiety disorder instead.

Many of the limitations in the DSM system are due to its reliance on supposedly distinct disorders with arbitrary thresholds (e.g., needing to have five of nine symptoms). These characteristics of the DSM are decided by committees of experts: Each time it is revised, committees decide which disorders to include, the checklist of symptoms for each disorder and the number of symptoms needed for a diagnosis.

Relying on committee and political processes has resulted in a system that does not reflect the true nature of mental illness. If we take an empirical approach to mapping the structure and boundaries of mental illness, things look different.

Following the data to describe mental illness

By analyzing data on how people experience mental disorders, clear patterns emerge in the ways disorders co-occur. For example, someone who is depressed is likely to also experience anxiety, and someone who gambles compulsively is likely to also struggle with drug or alcohol addiction.

These sorts of patterns of co-occurrence highlight the common underlying characteristics that groups of disorders share. Over the past 20 years, dozens of studies have analyzed the patterns of co-occurrence in tens of thousands of people's experiences of mental illness. These studies have converged on six broad domains:

1. Internalizing, which reflects a propensity to excessive negative emotions, such as depression, anxiety, worry and panic;
2. Disinhibition, which reflects a predisposition toward impulsive

and careless behavior, and drug or alcohol abuse;
3. Antagonism, which is composed of aggressive, disagreeable and antisocial behavior;
4. Thought disorder, which includes experiences of delusions, hallucinations or paranoia;
5. Detachment, marked by low social drive and withdrawal from social interactions;
6. Somatoform, defined by unexplained medical symptoms and excessive seeking of reassurance and medical attention.

Each of these six domains can be measured on a continuous dimension representing the likelihood that a person will experience those symptoms. For example, someone toward the low end of internalizing would likely be emotionally resilient, calm and stoic in the face of adversity. Someone at the high end might be prone to deep and prolonged periods of depression, uncontrollable worry and intense irrational fears.

A person's position on these dimensions can predict not only current mental health but also the type, number and severity of specific "DSM-style" mental disorders that he or she is likely to experience in the future.

Looking at mental illness through a more detailed lens

The HiTOP framework goes beyond the six broad domains listed above, also including narrower dimensions nested within these domains that allow us to characterize people's experiences of mental illness with more detail.

For example, the internalizing dimension includes narrower dimensions of fear, emotional distress, disordered eating and low sexual function.

Measuring these narrower dimensions can quickly convey the ways in which a high level of internalizing is likely to show up.

In turn, these narrower dimensions can be separated into still more detailed elements to determine, for example, whether a high level of the fear dimension is likely to show up in social interactions, as phobias, or as obsessions or compulsions.

This hierarchical structure of the framework – wherein the broad dimensions can be split up into successively narrower and more detailed dimensions – makes it highly flexible to clinicians' and researchers' needs. The central ideas in the HiTOP framework are already being implemented to strengthen research on mental illness, and are ready to be used in clinical practice.

A better alternative to the DSM

Consider James and John again: Rather than assessing hundreds of DSM symptoms to determine which idiosyncratic combination of disorders could be imposed to fit their combinations of symptoms, we can assess the six broad domains of mental illness to quickly determine where the two men sit on each dimension.

The more detailed dimensions in the framework then allow us to identify their most severe or distressing symptom clusters. By fully understanding the nature, scope and severity of their symptoms, we can match them with the most appropriate and effective treatments available.

The hierarchical and dimensional framework thus overcomes the limitations of the DSM's reliance on discrete "present vs. absent" disorders: The hierarchical structure lets us assess and retain detailed information about individuals' presenting symptoms. The dimensional structure also overcomes the arbitrary diagnostic thresholds of the DSM,

instead capturing the severity of mental illness on each dimension.

The fragility of DSM disorders (i.e., appearing, disappearing and changing with small changes in symptoms) is also overcome. Remission of a symptom – or the onset of new symptoms – simply shifts where a person sits on each of the dimensions.

In short, by following the patterns in the data, we see a picture that is very different from the committee-derived disorder categories in the DSM. This new hierarchical and dimensional framework is far more consistent with the true structure of mental illness, and can revolutionize how we diagnose and treat the different ways that people struggle with their mental health.

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