

Nonconventional Approaches in Psychiatric Assessment

Everyone is unique at the level of social, cultural, psychological, biological, and possibly “energetic” functioning. By extension, in every person, the complex causes or *meanings* of symptoms are uniquely determined. The diversity and complexity of factors that contribute to mental illness often make it difficult to accurately assess the underlying causes of symptoms and to identify treatments that most effectively address them.

A future, more integrative psychiatry will include an eclectic and sophisticated array of individualized assessment and treatment approaches that are capable of addressing symptoms of mental illness at disparate biological, informational, and energetic levels of the body, brain, and mind. Although quantitative electroencephalography (QEEG) analysis has become an important research tool in psychiatry, this technique is not yet widely used in conventional psychiatric assessment. Thus, for purposes of this discussion, QEEG is regarded as a *nonconventional* approach.

Emerging evidence suggests that ultraweak biophotons may be useful indicators of illness. Serological and urinary assays used in functional medicine are increasingly being applied in clinical settings. Assessment approaches that purport to detect subtle forms of energy not described by Western science are also being widely used by alternative medicine practitioners to evaluate persons who present with mental health issues. These techniques include pulse diagnosis in Chinese medicine, Ayurvedic and Tibetan medicine, and analysis of the vascular autonomic signal (VAS).

Some approaches will be scientifically validated by future research findings while others will be refuted. The increasing use of novel assessment approaches in Western psychiatry will permit more comprehensive and cost-effective treatment planning because accurately characterizing the underlying causes of symptoms will point to the most appropriate and effective biomedical or nonconventional treatment. In this article, I briefly review approaches that are being used to assess psychiatric disorders but that are not currently in use in conventional Western psychiatry.

Nonconventional assessment
Chinese, Ayurvedic, and other non-Western systems of medicine rest on assumptions that are fundamentally at

odds with the philosophical position of Western biomedicine, which argues that the causes of illness are reducible to identifiable physical or biological factors. In contrast, Asian healing traditions assume that complex, nonlinear energy-information processes play important roles in illness causation, and that a person’s intention has direct and in some cases *nonlocal* effects on health and illness. This model argues that health and illness are manifestations of complex dynamic interactions among psychological, physical, biological, social, energetic, and spiritual factors at multiple hierarchical levels of organization in space and time.¹

In contrast, biomedical psychiatry posits that discrete causes of symptoms are biological processes that manifest as depressed mood, varying degrees and severity of anxiety, impaired cognitive functioning, and so on. In this conventional model, indirect causes of symptoms include acute or chronic social, cultural, or psychological stresses that lead to changes in specific biological (including neurobiological and endocrinological) systems that ultimately manifest as symptoms.

Integrative medicine begins with classic neurophysiology and extends the conventional explanatory model to include putative causes of symptoms that are “energetic” or “informational” processes. This model suggests that these disparate processes affect the body, brain, and mind at various levels in a dynamic, web-like hierarchy of structure and function that includes the neuroendocrine system; immune system; highly organized biomagnetic fields generated by the brain and heart; and possibly non-classic energy-information processes, including large-scale coherent quantum fields and other subtle energetic or informational phenomena associated with human consciousness. In this broad context, the goals of integrative mental health care include ac-

curately characterizing the causes of symptoms and constructing treatment strategies that effectively address those causes.

Benefits of integrating nonconventional approaches in psychiatric assessment include the following:

- Clarification of the psychiatric differential diagnosis when conventional assessment methods have failed to identify the causes of a symptom or disorder or when the patient’s medical or psychiatric history is vague or complex.
- Combining conventional assessment methods with nonconventional biological assessment approaches based on current medical theory—including QEEG and urinary or serological studies of neurotransmitter metabolites, immunological, or endocrinological factors—may result in increased specificity and accuracy when ruling out postulated biological causes or markers of mental illness.
- Combining conventional assessment methods with emerging approaches currently outside biomedicine will clarify the role of putative energetic causes of mental illness.

At present, limited data support the use of most nonconventional assessment methods, and those approaches that have been rigorously evaluated using Western-style research studies have not yielded reproducible, sensitive, or specific findings.² Nonconventional assessment approaches that have not been found to provide useful diagnostic information on the basis of Western-style research studies include iridology, hair analysis, kinesiology, radionics, clair-sentient diagnosis, and electroacupuncture, according to Voll.² Instead of reviewing negative findings of approaches that are dubious, I will focus on a few promising assessment approaches for which there is significant emerging evidence. The perspective of integrative medicine is that both biomedical and nonconventional assessment approaches should be considered, depending on the relative strength of evidence, availability, cost, and patient preferences.

Categories of nonconventional assessment

Assessment approaches that are not routinely used in conventional biomedicine to assess mental illness in

patients can be assigned to 3 general categories.

- Functional assays, including specialized serological and urological analyses.
- Measures of classically described forms of energy or information, including electrophysiological activity and ultraweak biophotons.
- Measures of postulated subtle energy not validated by current Western science.

Functional medicine. Functional medicine uses quantitative analysis methods to assess relationships between nutritional status; neurotransmitters; endocrine and immune function; and symptoms of depression, anxiety, and psychosis, as well as other symptoms. Functional tests include serum and urinary assays of neurotransmitters and their metabolites; vitamins, minerals, and amino acids and their metabolites; hormones, fatty acids, proinflammatory cytokines (eg, interleukin [IL]-6, IL-8, IL-1b); and immunological factors, as well as specialized blood chemistries. Plasma homocysteine is a marker for vitamin B deficiency, including folate, B₁₂, and B₆. Elevated plasma homocysteine levels (greater than 12 μmol/L) is an established risk factor for several neurodegenerative conditions, including dementia, Parkinson disease, and multiple sclerosis. Hyperhomocysteinemia caused by vitamin B deficiency is associated with increased risk of depressed mood.^{3,4}

Preliminary findings suggest that immunological dysregulation plays a significant causative role in the pathogenesis of affective disorders, schizophrenia, Alzheimer disease, and other degenerative neurological disorders.⁵ The relationship between immunity and mental illness is complex and poorly understood, and the same immunological dysregulation is sometimes found in patients with disparate symptoms.⁶ There are currently no specific or sensitive immunological markers of particular psychiatric symptoms or disorders.^{7,8} In general, chronic depressed mood is associated with suppression of some immunological factors (eg, lower natural killer cell activity, decreased lymphocyte levels) and excess activity of others (eg, increased neu-

by James Lake, MD



trophils, increased haptoglobin levels); however, these relationships are inconsistent. Serotonin deficiency and increased glutamatergic neurotransmission are known to stimulate increased production of proinflammatory cytokines that in turn activate enzymes that degrade tryptophan and serotonin.⁹

The relationship between proinflammatory cytokines and depression is consistent with the increased prevalence of depression in patients with inflammatory diseases such as multiple sclerosis. Patients with depression who are nonresponsive to conventional treatment may have increased cell-mediated immunity, as evidenced by elevated CD4⁺ T-cell activity.¹⁰ An elevated IL-6 level is

often present in persons with schizophrenia and mania, and in those with a history of posttraumatic stress disorder.

Recent studies suggest that non-specific overactivation of the immune system involving T-helper cells takes place in subgroups of persons with schizophrenia.¹¹ The immune-mediated dysregulation of both dopamine and glutamate neurotransmission has also been implicated in the pathogenesis of schizophrenia.¹² In response to these findings, anti-inflammatory and immune-modulating therapies are being investigated as future treatments for affective disorders and schizophrenia. Horrobin^{13,14} proposed a “membrane phospholipid” model of schizophrenia that posits abnormal

metabolism of phospholipids resulting from genetic and environmental factors manifests as a chronic, severe constellation of symptoms typically diagnosed as a variant of schizophrenia or schizoaffective disorder. The membrane phospholipid hypothesis posits that a spectrum of psychiatric disorders is associated with abnormalities in neuronal membranes, and the type and severity of symptoms are functions of the magnitude and specific type of metabolic errors resulting in abnormal phospholipid metabolism.

Electrophysiological monitoring. QEEG is used to characterize EEG abnormalities associated with various psychiatric disorders; however, this approach is not yet widely used in clinical assessments. Typical EEG findings include decreased α activity in patients with generalized anxiety, increased α activity in patients with obsessive-compulsive disorder (OCD), and paroxysmal activity in patients with panic disorder.¹⁵

Depressed mood, psychosis, and acute mania are associated with distinctive patterns of brain electrical activity on QEEG mapping. Abnormal EEG findings occur in up to 40% of patients with depression, and “small sharp spikes” are often present in patients who are severely depressed and suicidal.¹⁶ QEEG analysis of patients with unipolar depression typically reveals increased α or θ activity as well as decreased interhemispheric coherence.^{17,18}

Results of a pilot study suggest that decreases in prefrontal cordance, a combined measure of absolute and relative EEG power, may predict response in patients with depression who do not respond to conventional antidepressants.¹⁹ Cordance may also be a useful indicator when planning treatment for cocaine addiction. Patients who had abused cocaine and had high cordance were much more likely to complete treatment programs than matched patients with low cordance.²⁰

QEEG analyses can be used to distinguish between those with mild dementia and depression and those with depression who complain of cognitive impairments.^{21,22} Many patients with bipolar disorder start treatment after experiencing a single major depressive episode but before having a manic episode. In these cases, a QEEG map provides valuable diagnostic information that can guide the clinician to the most appropriate treatment choice.

There are no clear correlations between specific QEEG abnormalities and different mood disorders; however, reduced α activity and increased β

activity suggest a relatively higher probability of bipolar disorder.²³ In contrast, a finding of increased α or θ activity suggests that the most likely diagnosis is unipolar depression, allowing for the aggressive start of appropriate treatment. Abnormal EEG findings are more common in persons with mania than in those with depressed moods.¹⁵ Global disturbances in EEG synchronization are similar in those with schizophrenia and bipolar disorder. In contrast to patients with schizophrenia, patients with bipolar disorder *do not* show disorganization in the superior temporal lobes. In patients with schizophrenia, EEG activity can be categorized into discrete patterns that may prove to be more specific indicators of diagnostic subtypes than specific positive or negative symptoms of psychosis.²⁴

Nonmedicated patients who are manic frequently exhibit lower EEG amplitudes in the left anterior and temporal brain regions.²⁵ Specific abnormal findings may predict differential response rates of patients to different classes of conventional mood stabilizing or antipsychotic medications. Nonresponders had significantly more diffuse θ activity than responders, and (similar to nonmedicated persons with mania) they had overall higher EEG activity in the left temporoparietal region.^{25,26} Nonresponders to conventional medications are more likely to have diffuse θ activity at baseline and higher amplitudes in the left temporoparietal regions during treatment. Inpatients who are acutely manic and respond to conventional medications are more likely to have abnormalities on the left side of the brain. The significance of these findings is limited by the low rate of cooperation of hospitalized patients who are acutely manic in studies completed to date.

Abnormal EEG or ECG findings are often seen in patients with anxiety disorders. ECG findings in patients with general anxiety typically reveal increased sympathetic activity and decreased parasympathetic activity. QEEG findings may predict differential response rates to conventional medications in patients with OCD. In one series, approximately 80% of patients with OCD who exhibited increased α activity responded to SSRIs compared with 80% of patients with OCD with increased α activity who failed to respond to SSRIs.²⁷ Specialized software that interpolates subcortical EEG activity from surface scalp electrodes (variable resolution electromagnetic tomography) found excess α activity in the orbitofrontal and temporofrontal

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Poetry of the Times



by Richard M. Berlin, MD

At the Residential School Team Conference

The principal turns to the student and says,

“I am here for the educational piece,

Mr Tan is here for the cottage piece,

Ms McMillan is here for the drug abuse piece,

Dr Berlin is here for the psych piece,

and you are the puzzle we’re putting together,”

which makes me think of the thousand pieces

of Manhattan I assembled last summer

in a cottage on an island far out to sea,

wind blowing at 39 knots, swells rising

10 feet, the mail boat gone for the week,

and that scene of the city from high above

on a cloudless day, the corner where he deals

crack, the alley where his mother nods

with a needle in her arm, and his father

on the piece that is missing. But I hate

puzzles, the way each choice constrains

the next until you’ve re-created nothing

more than the picture on the box.

I’d rather think of this team as shipwreck survivors

stroking hard toward a distant lighthouse,

roped together in Arctic water, knowing

if one of us sinks, everyone drowns.

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Nonconventional Treatment

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regions of untreated patients with OCD, which normalized in patients who responded to treatment with paroxetine (Paxil).²⁸

These findings were consistent with functional-imaging data using positron emission tomography and suggest that EEG may provide a cost-effective way to evaluate neurobiological abnormalities in patients with OCD. Abnormal QEEG findings that are associated with other anxiety disorders are highly inconsistent, and the future role of QEEG in the clinical assessment of anxiety disorders remains unclear.

Detecting biophotons and "subtle" energy. All living organisms emit ultraweak photons, and under certain conditions such biophotons are emitted as highly ordered or "coherent" light.²⁹⁻³² Findings of studies on biophoton emissions from the human body have led to speculation about "light channels" that regulate energy and information transfer within the body, biological rhythms associated with the intensity and patterns of biophoton emissions, and diseases related to energetic "asymmetries" between the left and right sides of the body.^{33,34} Studies conducted on biophoton emissions associated with acupoints suggest that subtle differences in photon count, wavelength, and coherence may correspond with energetic "imbalances" in yin and yang associated with neurological and psychiatric disorders.³⁵

Many alternative medical practitioners use assessment approaches that purport to detect subtle energetic clues about the causes of mental illness. Highly refined diagnostic skills grounded in ancient roots of traditional Chinese and Ayurvedic medicine, as well as modern technology-based approaches, are being used in outpatient clinics to evaluate responses to acupuncture and qigong.

Skilled Chinese medical practitioners obtain empirical and intuitive information about the balance between the complementary energetic principles yin and yang, the 2 postulated forms of "qi" that contribute to health and illness. Future studies are needed to determine whether clinicians who claim to intuitively measure subtle energies are somehow able to detect ultraweak biophotons, electromagnetic fields, or other classically described forms of energy associated with living organisms.

Measuring electrodermal potentials at acupoints following acupunc-

ture or qigong treatment may provide useful information about changes in the quality of bioelectrical activity.³⁶⁻³⁸

The findings of a recent double-blind study suggest that skilled Chinese medical practitioners are able to reliably estimate changes in yin and yang energy following acupuncture treatment.³⁹ Machines that measure small differences in electrical skin resistance have been shown to reliably identify acupoints.⁴⁰

Clinical methods used to detect subtle characteristics of the human pulse have been refined over millennia in Western, Chinese, Ayurvedic, and Tibetan medicine. Case reports suggest that certain pulse characteristics described in Chinese, Ayurvedic, or Tibetan medical assessment correspond with energetic imbalances manifesting as particular cognitive or affective symptoms.⁴¹ For example, mild to moderate symptoms of anxiety, depressed mood, or irritability are often associated with a "tight" or rapid rate when the patient's pulse is taken at the pericardium position and "smooth vibration" over the entire pulse at all depths. In contrast, severe psychiatric symptoms are more often associated with a "rough vibration" over the entire pulse and "slipperiness" in certain aspects of the pulse. The most severe symptoms are often associated with the most erratic or abnormal energetic qualities of the pulse, resulting in a "pulse picture" that is "overwhelmed" by "chaos in the circulation."⁴¹

Analysis of the VAS is an emerging technology-based approach that complements assessment methods used in traditional Chinese medicine. The VAS is a postulated reflex that brings the endocrine, immune, and autonomic nervous systems into optimum energetic balance in response to external and internal physiological and energetic stressors. Acupuncturists use the VAS reflex to assess the energetic imbalances associated with medical and psychiatric disorders. Findings from Doppler imaging studies suggest that subtle changes in arterial wall tone, consistent with the hypothesized VAS reflex, may occur almost instantaneously in response to energetic stimuli that affect the physical and psychological state of the body but *do not* enter into conscious awareness.⁴² According to the theory, particular substances induce specific resonance patterns that trigger changes in autonomic arousal. More studies are needed to determine whether the VAS reflex can be used to determine optimum acupuncture or conventional treatments for energetic imbalances associated with specific psychiatric disorders.

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