Novel Neuroimaging Techniques
Unraveling the Singularities of Blast-Induced TBI
See page 6
Insights

IN THIS ISSUE:

NEUROIMAGING IN BIPOLAR DISORDER
2 Advanced Neuroimaging in Bipolar Disorder: Identifying Markers to Enable Earlier Diagnosis, Better Intervention

PSYCHIATRY IN NEURODEGENERATIVE DISEASE
4 Cleveland Clinic's Lou Ruvo Center Prioritizes Psychiatric Health in Managing Neurodegenerative Diseases

TRAUMATIC BRAIN INJURY
6 Using Advanced Neuroimaging to Understand the Singularities of Blast-Induced TBI and Further Its Treatment

ADAPTABILITY MODEL FOR ADHD
8 Adaptability Model of Behavior Treatment Optimizes Strengths in ADHD

CBT FOR HEADACHE
10 Interdisciplinary IMATCH Program Integrates Cognitive Behavioral Therapy into Refractory Headache Management

SHARED MEDICAL APPOINTMENTS
12 Shared Medical Appointments Yield High Rates of Self-Reported Improvement in Women with Anxiety and Depression

ART THERAPY FOR ADOLESCENTS
14 ‘Photography Perspective Project’ Takes Fresh View of Interventions for Adolescent Mood Disorders

MINDFUL EATING
17 Using a Mindfulness Approach to Help Patients Overcome Eating Issues

EXECUTIVE HEALTH COACHING
19 SOLAR Assessment Tool Analyzes Well-Being and Life Satisfaction

SUICIDE SCREENING
21 Study Suggests Electronic Administration of C-SSRS in Self-Report Form Greatly Increases Specificity of Suicide Screening

ALSO INSIDE:
23 Staff Listing
24 Resources for Physicians and Patients

Dear Colleagues,

Welcome to the 2012-2013 issue of Insights from the Center for Behavioral Health in Cleveland Clinic’s Neurological Institute. We established this publication to share with you, our behavioral health colleagues across the country, some of the most exciting clinical and research activities under way in our center. As those activities continue to proliferate, our hope is that Insights will spark interactions about how we can collaborate to jointly advance behavioral healthcare for all our patients.

This issue is a testament to the diversity of initiatives being pursued by our center’s staff of nearly 80 psychiatrists, psychologists and researchers.

On the research front, we feature two lines of pioneering neuroimaging studies. In our cover story (p. 6), Stephen Rao, PhD, briefs us on emerging findings from his Department of Defense-funded study to examine differences between neural changes from blast-induced traumatic brain injury — frequently seen in military personnel — and the changes observed with civilian brain injuries. Additionally, one of our newest staff members, Amit Anand, MD, reviews his innovative functional MRI research in mood disorders and previews an NIH-funded study he is launching here to identify imaging markers to predict which young patients with depressive symptoms have bipolar vs. unipolar depression (p. 2).

On the clinical front, Susan Albers Bowling, PsyD, shares insights from her program empowering patients to apply mindfulness principles to manage eating disorders (p. 17). Lilian Gonsalves, MD, and a colleague report positive results and lessons learned from several years of offering shared medical appointments for women with anxiety and depression (p. 12). And Michael Manos, PhD, explains the rationale behind — and utility of — his “adaptability” model of behavior treatment for helping individuals with ADHD thrive as they are (p. 8).

Other contributions inhabit the broad territory where research and clinical practice overlap. For instance, Jerry Kiffer, MA, reports on his novel self-assessment instrument mapping the life domains and satisfaction levels of successful executives — and looks ahead to its applicability as a measure of well-being (p. 19). And Adele Viguera, MD, shares data collected across our Neurological Institute in support of her proposal for an efficient two-step suicide screening process to enhance specificity without jeopardizing sensitivity (p. 21).

Still other contributions highlight the importance of multidisciplinary collaboration to our center. Neurologist/pyschiatrist Dylan Wint, MD, recounts how the Cleveland Clinic Lou Ruvo Center for Brain Health brings psychiatric management to bear for patients with neurodegenerative disease (p. 4), and Steven Krause, PhD, profiles an interdisciplinary program that successfully employs CBT to manage severe headache (p. 10).

Yet another article goes beyond the clinic and the lab entirely by sharing the experience of Molly Wimbiscus, MD, in establishing an unprecedented longitudinal project using photography as art therapy for a group of adolescents with mood disorders (p. 14).

I suspect there is something of interest here for all behavioral health providers, and I hope you enjoy perusing this issue as much as we enjoyed producing it. We welcome your comments in response to anything you see here. Look for our authors’ contact information at the end of their articles, and feel free to share your thoughts with me as well.

Sincerely,

Donald A. Malone Jr., MD
Professor and Chairman
Department of Psychiatry and Psychology
Director, Center for Behavioral Health
Cleveland Clinic Neurological Institute
maloned@ccf.org
Much of the progress in our understanding of bipolar disorder over the past decade stems from advances in functional MRI and other technologies that enable ever more sophisticated examination of the functioning brain. These technologies increasingly reveal the brain to be a highly connected organ and demonstrate the central role played by abnormalities in brain connectivity — as opposed to merely abnormalities in distinct brain regions — in mood disorders. My research team has played a leading role in identifying the contributions of brain connectivity to depression and bipolar disorder, and I am eagerly building on this research in my new position at Cleveland Clinic by leveraging advanced imaging equipment and exceptional opportunities for multidisciplinary collaboration.

Corticolimbic Disconnections in Mood Disorders
My team’s brain imaging research has focused on examining the pathophysiology of major depression and all phases of bipolar disorder to evaluate the connectivity between brain regions that may be abnormal in these disorders. Our objective has been to identify robust and consistent brain imaging markers for use in diagnosis as well as in predicting and monitoring treatment response.

Our team was the first to report connectivity abnormalities between the brain’s mood-regulating cortical regions and its mood-generating limbic regions in unmedicated major depressive disorder and, more recently, in unmedicated bipolar disorder. These studies used the relatively new measure known as resting state connectivity. We found that connectivity abnormalities are present in both bipolar disorder and unipolar depression.

We recently confirmed our initial study in bipolar disorder with one of the largest investigations to date of medication-free patients with bipolar disorder. This study identified state- and trait-related activation and connectivity abnormalities in all phases of bipolar disorder (including euthymia) and more precisely defined imaging markers of these abnormalities.

Sorting Bipolar from Unipolar Depression in Young Adults
We are now building on those imaging findings in a new National Institutes of Health-supported study that I am beginning at Cleveland Clinic. Our study aims to identify brain imaging markers that can predict which teenagers and young adults who present with depression are likely to develop bipolar disorder. This is a significant clinical question, as bipolar disorder typically manifests solely as depression in its early stages. So when young patients present with depression, it is very difficult to assess whether it is unipolar or bipolar depression. The distinction is critical because treating bipolar depression with an antidepressant can potentially induce severe mania and lead to a worsening of the illness. Further, because the prognosis is much worse in bipolar than in unipolar depression, early identification of bipolar disorder is key to effective early intervention in order to avoid major impairments in relationships and work performance as patients advance into adulthood.

Additional Research Frontiers, New Resources to Leverage
In conjunction with our brain imaging studies, we are collecting genetic samples from our research participants in an effort to use imaging markers as an endophenotype. Our hope is to better elucidate the genetic basis of bipolar disorder, which has eluded researchers working solely with a behavioral diagnosis.

Similarly, our imaging studies are assessing the effects of various treatments, including lithium, antidepressants and atypical neuroleptics, on brain activation and connectivity in both bipolar disorder and unipolar depression (Figure). Our hope is that insights from these studies may guide development of future pharmacotherapies.

The progress of these investigations will be fueled by the neuroimaging equipment and facilities now at my disposal in Cleveland Clinic’s Neurological Institute, including a research-dedicated 7T scanner to be acquired in early 2013. These facilities are enhanced by the close involvement of the institute’s radiology specialists in clinical and research initiatives, the engagement of expert physicists in developing new imaging protocols and the large base of patients with mood disorders in Cleveland Clinic’s urban setting.
As the new Vice Chairman for Research in the Center for Behavioral Health, I look forward to working with this large patient base and to tapping the Neurological Institute’s abundance of opportunities for interdisciplinary collaboration across the spectrum of behavioral health research. The lessons we learn about the centrality of brain connectivity in mood disorders will undoubtedly yield insights for neuropsychiatric disorders more broadly.

REFERENCES


Dr. Anand is Vice Chairman for Research and Director of the Mood Disorders Clinical and Research Program in Cleveland Clinic’s Center for Behavioral Health and Department of Psychiatry and Psychology. His specialty interests include brain imaging, bipolar disorder, major depression and psychopharmacology. He can be contacted at 216.636.2840 or ananda@ccf.org.
Cleveland Clinic’s Lou Ruvo Center Prioritizes Psychiatric Health in Managing Neurodegenerative Diseases

By Dylan Wint, MD

The Cleveland Clinic Lou Ruvo Center for Brain Health focuses on the diagnosis, treatment and research of neurodegenerative diseases such as dementias, Parkinson disease (PD), Huntington disease (HD) and multiple sclerosis (MS). These illnesses all cause gradual dysfunction and loss in brain tissue, with corresponding deteriorations in cognitive and physical function.

Staffing Infused with a Psychiatric Sensibility

The first director of the Lou Ruvo Center for Brain Health was a neurologist/psychiatrist, as was the first new staff member recruited to the center. Moreover, the center’s current director, Jeffrey Cummings, MD, ScD, is the world’s leading expert on neurobehavioral problems, and he recently recruited Brian Appleby, MD, a psychiatrist with particular expertise in prion diseases (such as Creutzfeldt-Jakob disease) and other rapidly progressive dementias.

In many brain diseases, psychiatric and behavioral disturbances are the first sign that a neurodegenerative process has begun.

To those unfamiliar with neurodegenerative disorders, this staffing may seem incongruent with the mission of the Lou Ruvo Center for Brain Health. However, the leaders of both the center and Cleveland Clinic’s Neurological Institute recognize an important, but often overlooked, consequence of neurodegenerative diseases — extremely high rates of psychiatric illness. In fact, it is now well known that in many brain diseases (HD is perhaps the prime example), psychiatric and behavioral disturbances are the first sign that a neurodegenerative process has begun. As these diseases progress, the prevalence and severity of associated psychiatric illness rises dramatically. Psychiatric illness causes direct suffering and loss of function in patients. That alone is an important reason to detect and treat depression, anxiety and other psychiatric problems.

Psychiatric Status Drives Outcomes

Psychiatric status also has profound effects on disease outcomes, quality of life, caregiver stress, costs of care and even mortality in patients with neurological diseases. In fact, if diseases were classified according to the sources of patient dysfunction and caregiver distress, then dementias, PD, HD and MS would all be considered psychiatric illnesses because studies repeatedly demonstrate that the quality of life of patients with these conditions — and of their caregivers — is driven by these patients’ emotional and behavioral status. Therefore, optimal diagnosis and management of neurodegenerative diseases is impossible without psychiatric evaluation and intervention.

The Lou Ruvo Center for Brain Health recognizes and responds to this reality by fully integrating mental healthcare into our services; one example of this integration is the multitude of psychiatric and quality-of-life metrics that we routinely monitor in our patients (Table). In addition to the psychiatrists on staff, the center also employs counselors to provide individual therapy, couples therapy and family therapy to patients and caregivers. Moreover, a variety of disease-specific support groups meet regularly at the center’s Las Vegas location.
Bringing Value Across the Spectrum of Neurological Disease

Additionally, Cleveland Clinic’s Department of Psychiatry and Psychology is deeply involved in a number of Neurological Institute centers that are traditionally the domain of neurologists. For example, both the Center for Neurological Restoration and the Epilepsy Center have psychiatrists on staff who are integral to their programs.

As a relatively new center (established in 2009), the Lou Ruvo Center for Brain Health does not have comprehensive data on the results of these structural innovations in neurodegenerative disease care. Thus far, however, we can report extremely high patient and caregiver satisfaction ratings and overwhelming demand for our services. The inclusion of psychiatric expertise in the management of neurodegenerative disorders seems to have yielded benefits where it counts most — in the comfort and happiness of our patients and their families.

SUGGESTED READING


Dr. Wint is board-certified in neurology and psychiatry. He is on staff at the Cleveland Clinic Lou Ruvo Center for Brain Health in Las Vegas and is a member of the Department of Psychiatry and Psychology. His interests include the diagnosis and treatment of behavioral dysfunction in neurodegenerative disorders. He can be contacted at 702.483.6000 or wintd@ccf.org.

| TABLE. |
| Psychiatric and Related Metrics Evaluated in Patients with Neurodegenerative Diseases at the Lou Ruvo Center for Brain Health |

| Depressive symptoms (PHQ-9 score) |
| Overall difficulty level |
| Anhedonia |
| Depressed mood |
| Sleep changes |
| Appetite changes |
| Concentration problems |
| Fatigue |
| Self-deprecation |
| Speed of movement |
| Suicidal ideation |

| Quality-of-life metrics (EQ-5D subscores) |
| Mobility |
| Self-care |
| Usual activities |
| Pain/discomfort |
| Anxiety/depression |

PHQ-9 = Patient Health Questionnaire; EQ-5D = European Quality of Life – 5 Dimensions
Using Advanced Neuroimaging to Understand the Singularities of Blast-Induced TBI and Further Its Treatment

By Stephen M. Rao, PhD

Cleveland Clinic’s Schey Center for Cognitive Neuroimaging is employing innovative MRI techniques to examine the neurocognitive changes in patients with traumatic brain injury (TBI) resulting from explosive device blasts. Our aim is to use these novel techniques to better understand the unique neural and behavioral sequelae of blast-induced TBI in order to improve diagnosis and aid in developing effective treatment interventions.

Our results provide preliminary evidence that neural changes associated with blast-induced TBI may be different from those associated with civilian brain injuries.

Unique Pathology of Blast-Induced Injury

TBI that occurs after blasts from improvised explosive devices (IEDs) is a common injury experienced by military personnel in combat. In this type of injury, wave-induced changes in atmospheric pressure from the blast itself can cause TBI with or without mechanical forces (e.g., striking the head against an object). In contrast, most cases of TBI in civilians are the result of mechanical forces, as is the case in automobile accidents or sports injuries. Scientific information on the unique pathology of blast-induced TBI is limited, particularly in military combatants. In persons with mild to moderate blast-induced TBI, conventional MRI is unable to elucidate the resulting brain damage to both gray and white matter.

Novel Neuroimaging Teamed with Psychological Testing

Our study is one of a select group of investigations to receive funding from the U.S. Department of Defense to investigate TBI in military personnel. We are using advanced neuroimaging techniques to distinguish and identify imaging biomarkers that may continue to identify TBI-related neural changes long after the injured individual’s cognitive function has returned to a near-normal state. Our aim has been to develop and refine imaging tools that can help characterize the unique sequelae of blast-related TBI and yield greater information than existing imaging approaches can.

We are also conducting comprehensive neuropsychological testing that, in combination with the neuroimaging data, will contribute to our understanding of the effects of blast-related TBI. Our hope is that these insights will enable more accurate diagnosis and aid in the development of effective pharmacologic and neurorehabilitative interventions for military personnel.

This study combines our imaging expertise with that of one of the country’s leading TBI researchers, Harvey S. Levin, PhD, Professor of Psychiatry and Behavioral Sciences at Baylor College of Medicine.

Four Study Groups

The study’s 160 participants are divided into four study groups of 40 subjects each:

- Active-duty military personnel in a combat setting who have experienced mild to moderate TBI from an explosive device
- Active-duty military personnel in a combat setting who have not experienced blast-related TBI (to better control for confounders associated with combat stress)
- Civilians who have had mild to moderate TBI from mechanical injuries (sports injuries, motor vehicle accidents)
- Individuals who have had a traumatic injury, such as an orthopaedic injury, but did not have TBI

Previous studies have found that individuals with mild to moderate TBI regain cognitive function approximately 30 to 90 days after injury. The individuals with TBI in this study had to have experienced TBI at least one year before our neuroimaging studies to better ensure that we were measuring relatively permanent neural changes.
We are using similar imaging technologies in longitudinal studies to examine and identify imaging biomarkers in people who are genetically at risk for Alzheimer disease and to study individuals in the preclinical stages of Huntington disease.

Dr. Rao is Director of the Schey Center for Cognitive Neuroimaging in Cleveland Clinic's Neurological Institute. He also has appointments in the Departments of Neurology, Neurosciences, and Psychiatry and Psychology, as well as with the Cleveland Clinic Lou Ruvo Center for Brain Health. His research focuses on using neuroimaging to investigate cognitive, personality and neuroimaging changes associated with multiple sclerosis and on applying fMRI to study multiple functions in patients with multiple sclerosis, Parkinson disease and TBI as well as in individuals in the preclinical stage of Huntington disease and Alzheimer disease. He can be contacted at 216.444.1025 or raos2@ccf.org.

Study Methods: fMRI, Diffusion Tensor Imaging, Neuropsychological Evaluation

Using a variety of neuroimaging techniques, we have sought to observe any neural differences among the four study groups. We used functional MRI (fMRI) to analyze task-related brain activity for tasks involving inhibitory control and working memory and compared that across the groups. The task-related fMRI data were then compared with five-minute resting fMRI scans for each individual. From these resting scans, we can measure the functional connectivity of activated regions identified through task-related fMRI. Presumably, with no brain injury, the correlations between these activated regions would be high, but we suspected that as TBI affected these networks, the correlations would decrease.

Additionally, we examined white matter fibers using diffusion tensor imaging (DTI), a relatively novel MRI-related technology. Using DTI allowed us to examine the way water molecules diffuse across white matter fiber tracts. Previous studies have demonstrated that water molecule diffusion increases after mechanical TBI as a result of a breakdown in white matter. We investigated whether the same effect occurs with blast-induced TBI. Further, using an advanced form of DTI known as high-angular-resolution diffusion imaging, we were able to examine individual white matter fiber tracts to accurately map the pathways that interconnect the correlated areas of the brain we studied with fMRI. Using this advanced imaging allowed us to also learn about the integrity of the white matter pathways that transmit information between the areas of functional connectivity.

To measure the behavioral sequelae of blast-related TBI, we conducted a comprehensive neuropsychological evaluation that also included measures of mood, presence of depression or anxiety, and history of substance use.

Preliminary Results

Data collection for this study ended a few weeks before this article went to press. This study's results will require many months of further image analyses. Our initial passes through the data have been encouraging. Using an inhibitory control task called the Stop-Signal Task, we have shown differences in brain activation between the TBI and control subjects and between blast-induced TBI and mechanical TBI (Figure). These results provide preliminary evidence that neural changes associated with blast-induced TBI may be different from those associated with civilian brain injuries.

Figure. Two different patterns of fMRI brain activation observed during an inhibitory control task. On the left, the circled green region in the left middle temporal gyrus shows a TBI effect: both military and civilian TBI participants showed less brain activity than the military and civilian control groups. In contrast, on the right, the circled orange region in the inferior temporal gyrus demonstrated a difference between the blast and mechanical TBI groups, suggesting that the pressure waves generated by blasts may have a unique effect on brain function compared with mechanical forces.
Adaptability Model of Behavior Treatment Optimizes Strengths in ADHD

By Michael J. Manos, PhD

Attention-deficit/hyperactivity disorder (ADHD) is typically viewed using a medical or disease model because symptoms can significantly impair progress throughout life. Difficulties typically start in school and sometimes continue into the workplace. Symptoms of hyperactivity and impulsivity become less problematic in adolescence and adulthood, but inattention and distractibility tend to remain throughout the life span. But is ADHD a “disease”? Many adults with ADHD perform quite successfully in spite — and sometimes because — of their “symptoms.” Cleveland Clinic’s Center for Pediatric Behavioral Health forgoes this disease orientation. We use an adaptability model that accepts individuals’ differences and capitalizes on native assets associated with ADHD.

Gaining Insight into Personal Assets

Many children, teens and adults with ADHD define themselves as “failures” or feel unable to make a difference in their lives. They often compare themselves with peers who appear to manage school or tedious work tasks more easily. The comparison is unfair, however, because the ADHD brain is not suited to engaging in long periods of focused attention; rather, it is suited to rapid shifts of attention from one interesting activity to another. Individuals with ADHD do not need to be “fixed”; they need to discover ways to better maneuver through life’s obligations.

The ADHD brain has a propensity to put attention on interesting aspects of the surrounding environment. This can be helpful socially — for instance, by allowing an individual to notice nuances in behavior. Thus, many individuals with ADHD have excellent social skills, get along with others and are quite engaging. Other assets commonly associated with ADHD include creativity, spontaneity and multitasking skills.

Gaining insight into personal assets can help people turn ADHD’s unfavorable traits into productive activity. Impatience can motivate an individual to devise efficient ways to quickly finish unappealing tasks so as to move on to more interesting activity. Impulsivity might translate to increased willingness to take risks, leading to opportunities others would not consider. A routine workup for ADHD from a medical model does not identify these types of characteristics.

The adaptability model is ideal for individuals with ADHD who have lost faith in themselves or have talents they cannot express. It does not work, however, for individuals with high risk factors (e.g., comorbid disorders) and low protective factors (e.g., a nonsupportive social network).

The Clinical Evaluation

Our clinical evaluation begins with a three-hour assessment across two sessions. Before the first appointment, multiple informants — such as parents, teachers and family members — complete broadband rating scales (assessing a variety of traits) and narrowband diagnostic rating scales (assessing only ADHD traits). At the first session, we conduct psychological testing and engage the individual in a thorough, semistructured interview.

Unique to our program is the Social Medical Questionnaire (SMQ), which identifies risk factors for impaired functioning and assesses for protective factors that make a person resilient and adaptable. Interestingly, raw intelligence tends to mask symptoms of inattention and can do so for many years. Consider the inattentive high school student who pays attention for 20 minutes out of the hour and still acquires all the information needed to get passing grades. The 12-section SMQ gathers data from parents about family demographics, family history, the individual’s developmental history, and current behavior and referral concerns. Although unpublished, the SMQ reflects behaviors typically rated in standardized scales with documented validity.
Under our adaptability model, we identify the presence of environmental factors that exacerbate ADHD symptoms, such as social stressors, and help the individual lessen the intrusion of these factors, which are sometimes uncontrollable.

Crafting a Treatment Plan

From information gathered in rating scales, testing and interviews, we develop a treatment plan based on the individual’s abilities and challenges. The emphasis is not on “fixing” or “working on” oneself but rather on learning to navigate one’s environment in a way that allows optimal and effective functioning. We offer group counseling (usually seven sessions) and individual counseling (three to five sessions) to accomplish this task.

An adaptability model includes both pharmacotherapy and behavioral intervention, treatments that are more effective combined than either is alone. During pharmacotherapy, we monitor the effect of medication not just on ADHD symptoms but also on quality of life. Parents are most concerned that a younger child is performing well in school and socializing appropriately; teenagers are usually concerned about peer relations and school, often learning new skills or ways of studying.

Finding Environments That Work

A premise of the adaptability model is that instead of trying to change people, people learn to place themselves in environments that work for them. Because some individuals with ADHD find it difficult to study alone with a book, they may study better in groups, one-to-one with a tutor, or through interactive online study programs.

For adults with ADHD, a big problem is projects left incomplete. The brain remembers uncompleted tasks, creating tension and anxiety. In an adaptability model, people formulate a new way of relating to projects. They may acquire new skills to complete projects or modify projects so that they are achievable. At times, we teach individuals how to effectively use their social network to support project completion.

Effectively working with children requires identifying the people in their lives who make the most difference. We work with the behavior of parents and teachers, the change agents in the child’s environment, because the child will adapt his or her behavior to these change agents. The same is true for adults, as spouses, siblings and even friends can be powerful allies in completing projects and keeping agreements.

To promote continuity of care, we send reports of our findings and diagnostic work to referring physicians. We may collaborate with psychiatry or refer an adult or family back to a previous counselor. Follow-up counseling is available at our center as well.

REFERENCES


2. Manos MJ. The role of psychosocial therapy in treating attention-deficit/hyperactivity disorder in adults. The Counseling Psychologist. [submitted for publication]

Dr. Manos is Head of the Center for Pediatric Behavioral Health and the founding Clinical and Program Director of the ADHD Center for Evaluation and Treatment. He can be reached at 216.445.7574 or manosm@ccf.org.
Psychological factors frequently contribute to the maintenance of primary headache disorders and influence patients’ level of functional disability. In patients with chronic headache, the relationship between psychological variables and functional status appears to be reciprocal, as each influences the other.

Since 2007, Cleveland Clinic has offered an interdisciplinary headache management program, including medical management of headache, psychological treatment, physical therapy and patient education, to appropriate candidates with refractory headache. This comprehensive approach, termed IMATCH (Interdisciplinary Method for the Assessment and Treatment of Chronic Headache), is an outpatient treatment program designed to rehabilitate patients with chronic headache, allowing them to overcome maladaptive headache coping strategies and to restore functional activity.

Focus on Debilitating Cases

Eligible patients are those with headaches at least 15 days per month for whom standard headache care has failed and whose headaches cause significant impairment in functioning or psychological status, or who are able to function only through use of an unsustainable medication regimen. Patients are selected based on prior medical and psychological evaluations at Cleveland Clinic’s Neurological Center for Pain.

Physical Therapy and Medication Reassessment

IMATCH is a full-day program that runs Monday through Friday for three consecutive weeks. The first day is devoted to treatment planning, goal setting and a physical therapy evaluation, with the aim of developing an individualized treatment plan for each patient.

Beginning on the second day, medications that contribute to headache and sedation are removed using controlled intravenous medication infusions. These infusions serve to detoxify patients from any rebound-producing medications they have been taking, and they also help to prevent withdrawal symptoms. Patients are concurrently started on appropriate headache preventive medications, safe rescue medications and psychotropic medications, as needed.

Daily physical therapy begins on the program’s second day, with the goals of restoring range of motion, establishing correct posture, improving strength and increasing stamina. An important additional goal is the resumption of normal activity levels in patients whose pain has caused prolonged inactivity. This inactivity can suppress endorphin production and interfere with normal pain inhibitory mechanisms.

Because many chronic headache patients have psychiatric comorbidities, psychotherapy sessions are a key component of IMATCH and begin in the first week.

Psychotherapy Is Central

Because many chronic headache patients have psychiatric comorbidities, particularly depression and anxiety, individual and group psychotherapy sessions are a key component of IMATCH. Group psychotherapy begins in the first week and continues thereafter, while individual psychotherapy is added in the second week. These sessions address the consequences of protracted pain through groups aimed at improving depression, anxiety, sleep hygiene and self-esteem and eliminating maladaptive coping strategies. Staff instruct patients to avoid pain behaviors in order to eliminate secondary gains associated with displays of pain. Patients learn self-directed strategies such as relaxation, biofeedback and activity pacing, and are encouraged to manage headache-triggering emotional stress and to reduce headache risk without curtailing activities.

To help patients maintain treatment gains in their home environment, a weekly meeting is held for family members during which the family is instructed to avoid reinforcement for displays of pain and to instead reward improvements in functional activity.

Interdisciplinary IMATCH Program Integrates Cognitive Behavioral Therapy into Refractory Headache Management

By Steven J. Krause, PhD, MBA
Tablet-Based Data Collection

Routine electronic collection of patient-reported health status measures has been implemented as part of all outpatient services within Cleveland Clinic’s Neurological Institute, including IMATCH. Data from IMATCH patients is collected electronically at admission and again at one week, two weeks and discharge. In addition to enhancing the collection of data for analysis and outcomes reporting, electronic information capture gives clinicians instant access to the data as a guide to ongoing clinical care.

Encouraging Outcomes Yield Satisfied Participants

IMATCH participants demonstrate substantial improvements from admission to discharge in depression, anxiety, reactivity to stress, pain ratings and functional activities. Examples of the degree of improvement among program participants in 2011 are provided in Figures 1 to 3. Moreover, patient satisfaction surveys reveal a high level of satisfaction with our comprehensive IMATCH program and with each of its individual components (medical treatment, psychological treatment and physical therapy).

Dr. Krause serves as Director of Rehabilitation Programs for the Neurological Center for Pain. He has appointments in the Department of Psychiatry and Psychology as well as the Neurology Department. Contact him at 216.445.0620 or krauses@ccf.org.

---

**Figure 1.** Mean scores at program admission and discharge on the Depression Anxiety Stress Scales (DASS) among 89 IMATCH participants in 2011. Range of possible scores is in parentheses following each scale name. For all scales, lower scores indicate improvement.

**Figure 2.** Mean disability scores at program admission and discharge among IMATCH participants in 2011. Sample size ranged from 87 (neck disability) to 107 (headache impact). Range of possible scores is in parentheses following each index name. For all indices, lower scores indicate improvement.

**Figure 3.** Mean pain ratings at program admission and discharge among 107 IMATCH participants in 2011. Ratings are on a scale of 0 (no pain) to 10 (worst possible pain).
Cleveland Clinic’s Department of Psychiatry and Psychology in 2003 began offering 90-minute shared medical appointments (SMAs) for medication management in the treatment of anxiety and depression in women. The SMA initiative continues to be an effective one, with high rates of self-reported improvement among participants at three-month follow-up.

How Our SMAs Work

SMAs are an innovative treatment strategy designed to provide high-quality, efficient and cost-effective patient care in a supportive and educational environment. The concept, which originated with the Drop-In Group Medical Appointments (DIGMAs) of Edward Noffsinger, PhD, and John Scott, MD, aims to facilitate a number of one-to-one patient encounters in the context of a group setting. Cleveland Clinic’s SMAs for women diagnosed with anxiety and depression are held weekly and are open to 12 patients, although ideal attendance is between eight and 10. The patients are all women over the age of 18 who have been referred by a healthcare provider. Each woman is seen individually for a complete psychiatric evaluation, and those who have been diagnosed with an anxiety disorder or depression are given the option to follow up in the SMA group. (Patients with psychoses or severe personality disorders are not suitable for SMAs, nor are those who require privacy or brief follow-up appointments.)

Upon arrival at the SMA, patients undergo a pain assessment and complete a number of standardized assessment tools, including the Patient Health Questionnaire (PHQ-9), the Generalized Anxiety Disorder Questionnaire (GAD-7), the European Quality of Life – 5 Dimensions scale (EQ-5D) and the Columbia Suicide Severity Rating Scale (C-SSRS).

During the SMA, the psychiatrist observes and addresses the needs of each patient, spending five to seven minutes with the first few patients to set the tone. Confidentiality is stressed. The dialogue focuses on individual patient care and aims to foster group interaction while providing education on mental health issues. A clinical nurse specialist assists the psychiatrist in managing group dynamics and keeping the appointment on schedule. The psychiatrist addresses individual medication issues, makes dose adjustments and answers medication-related questions. Computer-generated prescriptions are issued and return appointments are scheduled at the end of the session.

Patient Perceptions of Improvement

In addition to completing the standardized assessment tools noted above, SMA participants are asked to complete the Patient Global Impression of Improvement (PGI-I), a validated self-rating scale that measures patients’ perception of their own progress. It asks patients to select an answer on a Likert-style scale from “very much improved” to “very much worse” that best represents their change in status since the beginning of their treatment.

Between January and June 2010, 62 SMA participants fully completed the PGI-I during their first group visit and at their three-month follow-up visit; their scores were compared to assess change over that period. Overall, patients’ perception of improvement was high, with 71 percent of patients reporting improvement (i.e., “very much improved,” “much improved” or “minimally improved”), 19 percent reporting no change and 10 percent reporting a worsening of symptoms (the latter reported only minimal worsening) (Figure).
Ingredients for SMA Success

The success of our SMAs for women with anxiety and depression is the result of many factors, including:

- A suitable, comfortable venue with computer access
- Regular introduction of new patients for continued group viability
- Provision of up-to-date medical information and health education in a timely manner
- Commonality of diagnoses among group members, which promotes group cohesiveness and therapeutic empathy
- Starting promptly and ending on time
- Electronic submission of prescriptions and scheduling of follow-up appointments before patients leave the session

While SMAs are not attractive to all patients, our participants’ collective PGI-I data suggest that patient education and management within a group setting can yield positive patient assessments of care while allowing clinicians to work smarter and more efficiently.

Dr. Gonsalves is a staff psychiatrist in the Department of Psychiatry and Psychology and Clinical Professor of Medicine, Cleveland Clinic Lerner College of Medicine. Her specialty interests include women’s health, consultation psychiatry, coping with chronic illness, and pain. She can be contacted at 216.444.2197 or gonsall@ccf.org.

Ms. Hagan Sowell is a clinical nurse specialist in the Department of Psychiatry and Psychology. She can be reached at 216.444.6345 or sowellj@ccf.org.

![Self-Reported Progress Among SMA Patients](image)

Figure. Self-reported progress among 62 women with anxiety or depression three months after participating in shared medical appointment (SMA) therapy. Overall, 71 percent of participants reported some degree of improvement in their status, 19 percent reported no change and 10 percent reported minimal worsening of their status. Assessments were done via the validated Patient Global Impression of Improvement (PGI-I) scale.
ART THERAPY FOR ADOLESCENTS

‘Photography Perspective Project’ Takes Fresh View of Interventions for Adolescent Mood Disorders

By Molly Wimbiscus, MD

For many adolescents hospitalized for mood or anxiety disorders, standard psychiatric interventions delivered through the traditional medical system leave too many needs unaddressed. Moreover, behavioral health providers’ lack of access to community youth programs often leaves few, if any, ways to follow the progress of our adolescent patients after they are discharged.

To try to fill some of those gaps, I recently developed the Photography Perspective Project, a novel longitudinal initiative mixing art therapy, group therapy and community building for a small group of adolescents with recent psychiatric hospitalizations. This article describes the rationale behind the project, its implementation and general results, and advice for others considering similar initiatives.

Targeting Needs Missed by Standard Interventions

Soon after I joined Cleveland Clinic’s Center for Behavioral Health, my encounters with adolescents in the inpatient unit made me wonder how we could better provide supportive community services to these young patients who too often end up rehospitalized despite adequate medication doses and intensive levels of psychotherapy, group therapy and dialectical behavior therapy. An interest in community mental health and my own positive experience with youth groups as a teenager prompted me to think about the possibility of a community-building program.

I hoped to address a number of unmet needs. First was the need for continuity in these adolescents’ lives. Rather than just a six- or 12-week intensive outpatient program, we needed a more longitudinal project — one that would be a fixture over many months. This would help promote the parallel goals of engagement, relationship building and mutual support, allowing the adolescents to get to know each other over time and beyond the context of their mental illness. That’s where having an element of creative expression came in, which would be fun and give us something else to focus on.

I chose photography as the vehicle because it is accessible and easy to share. Also, the adolescents would complete the project having developed a skill that might be valuable down the road and would be good for self-esteem and self-expression right away.

Photography also provided technical themes that could be used as metaphors for life experiences, such as view, depth, balance, contrast, light, shadow and perspective. Rather than dwelling on inward struggles, the project would focus on experience and self-reflection through capturing the participants’ connectedness to the world at large. This would serve the project’s goal of linking teens more closely to their physical space and urban environment.

A final goal was to have good adult supervision to provide further continuity via stable role models. This was provided by me and our several adult volunteers (primarily occupational therapists) who participated in the project’s weekly classes and monthly field trips.

Making the Project Happen

With $3,000 in grant funding, we proceeded with the project in mid-2010, inviting adolescents hospitalized at Cleveland Clinic for mood, anxiety or adjustment disorders during the prior six months. Eight adolescents, ages 14 to 17 and mostly from urban neighborhoods, agreed to participate. They were given a digital camera and notebook and asked to record and reflect on their personal environment.

The teens met weekly from November 2010 to July 2011 for classes where they learned a new photographic technique each week, took pictures (see Figures for examples) and talked about their feelings. Photos were shared on a free private website.

The teens met weekly from November 2010 to July 2011 for classes where they learned a new photographic technique each week, took pictures (see Figures for examples) and talked about their feelings. Photos were shared on a free private website.

The weekly classes were supplemented by monthly Saturday field trips, led by me and one of our adult volunteers, to sites of interest around Cleveland, such as gardens, urban landmarks or historic cemeteries. The trips were a great

Photography provided technical themes that could be used as metaphors for life experiences, such as view, depth, balance, contrast, light, shadow and perspective.
opportunity for the teens to take photos and build bonds with each other in real-world settings. The trips also underscored that the world is far bigger than the teens’ home lives and that these special places are theirs to visit whenever they need them.

At the end of the eight-month project, the participants presented and sold prints of their photos in a show at a local art gallery.

Participants continued their other ongoing treatments throughout the project.

Outcomes: Qualitative Trumps Quantitative

We evaluated the project’s effects in several ways. All participants underwent serial ratings on psychometric scales and clinician evaluations at the project’s start, four months into it, at project completion and a year after completion. While some teens showed modest improvements in their scale ratings, none were statistically significant. However, the project yielded a number of readily observed qualitative improvements: The teens’ socialization improved notably, their peer interactions became more positive and they grew more expressive. Many of the teens remain in touch with (and supportive of) each other and with me nearly a year after the project ended, and they still occasionally post photos to the project website. The teens’ reflective notebook entries consistently testified to the program’s value to their quality of life and their sense of fulfillment through self-expression (see example in sidebar).

These findings underscore the need for careful planning of appropriate qualitative research measures in future offerings of the project (no formal qualitative measures were included in the initial project assessment).

Discussion and Lessons Learned

Although photo therapy is a growing field, I know of no other similar longitudinal projects using photography as a therapeutic social intervention for teens suffering from mental illness.

While the Photography Perspective Project’s quantitative effects were modest, it offered a number of benefits that may distinguish it from more traditional interventions for this population. The project’s community-building effects were clear and endured after the project ended,
which participants reported is valuable to them. The project also provided the teens with a tangible skill they can feel good about and may one day use in the workplace. Finally, it focused on the teens’ strengths and, unlike some outpatient programs, let them open up about their psychiatric histories on their own terms and timetables, often only several months into the project.

One reason this type of project may be largely unprecedented is the challenge of obtaining insurance reimbursement. Our project was funded by a one-time grant, and we are now exploring funding options for repeating the project with new cohorts. One approach for gaining reimbursement may be to structure the program as group therapy and have it run by an occupational therapist, but such a strategy has yet to be tried.

Here is additional advice for others considering this type of project:

• Make sure you have strong support from your department and institution. This is critical in light of the resource challenges typical for a project like this. Cleveland Clinic provided free transportation for some of our field trips, complimentary printing of the photos for the gallery show, and similar forms of invaluable in-kind support.

• Don’t underestimate the work involved, which amounts to 20 to 30 hours per month, plus the up-front planning time. I would like to enlist an administrative support person to help with future offerings of the project.

• Fully commit to the project from the start. If the project peters out midway through, the vulnerable teen participants will be left stranded precisely when they need continuity the most. Make sure you have an adequate supply of committed adult volunteers who care about teens, mental health and photography. While photographic skill is desirable (one of our volunteers is a devoted amateur photographer), commitment to making a difference is more important.

• Involve participants’ families. Future iterations of our project will include earlier family education on exactly what the project involves and ways parents can more actively support their child’s progress.

Dr. Wimbiscus is an associate staff member in the Center for Behavioral Health and the Department of Psychiatry and Psychology. Her specialty interests include local urban education, community development and mental health, and medical humanities. She can be contacted at 216.444.8674 or wimbism@ccf.org.
Using a Mindfulness Approach to Help Patients Overcome Eating Issues

By Susan Albers Bowling, PsyD

Healthcare professionals today face an increasing demand to help patients manage their weight. Traditional approaches of dieting, education and therapy to help patients reduce weight and improve healthy eating over the long term have had limited and varied success. For several years, Cleveland Clinic has offered an innovative mindful eating approach to help patients dealing with such issues as weight loss, obesity, binge eating, anorexia and bulimia eat healthier and thereby better manage their weight.

Essentials of Mindful Eating

The mindful eating approach teaches skills of attention, awareness, being in the moment, “nonjudgment” and mindfulness of one’s environment (Figure). Because mindful eating is a nondiet approach, patients are often more receptive to it, especially if diets have repeatedly failed them in the past. Rather than focusing on restriction, mindfulness encourages patients to tune into their bodies by listening to and honoring the internal and external sensations connected to eating (see sidebar). Patients learn to orient to the internal (e.g., thoughts, feelings, taste, hunger) and become more aware of the external (e.g., advertising, fast food, portion sizes).

The overarching aim is to help patients break out of their automatic cognitive and behavioral methods of responding to the urge to eat. Mindfulness involves filling the gap between the thought and the response with new thoughts or healthier responses.

In the past 30 years, mindfulness has become a popular and effective adjunctive treatment for a variety of conditions. Psychologists have studied the effectiveness of mindfulness on coping with a variety of mental health issues (e.g., depression, anxiety, addiction, eating disorders), and mindfulness has been shown to help people cope with a range of eating disorders.

The techniques of mindful eating can be taught to patients individually, in psychoeducational groups or as an adjunct to treatment in the form of self-help.

Teaching Mindful Eating at Cleveland Clinic

Hundreds of Cleveland Clinic patients have gone through mindfulness therapy. Some patients are taught the techniques in brief counseling sessions over three to six weeks using handouts, worksheets and homework exercises. For other patients, the mindful eating skills are an adjunct to their overall counseling for such issues as depression, anxiety or bulimia. When people are struggling with their eating, often they are also contending with depression, anxiety, bulimia or other mental health issues.

Six years ago, Cleveland Clinic began offering “mindful eating groups” at its family health center location in Wooster, Ohio. These groups of 12 to 15 individuals are...
Mindful Eating Exercises

The cornerstone of mindful eating is the mindful eating exercise — a widely used practice in meditation and other mindfulness programs. Patients are asked to eat something such as a cookie, piece of chocolate, orange, apple, nut or raisin slowly, taking care to notice the taste, texture and smell, as well as the thoughts and feelings that arise as they eat it.

The psychologist leads a meditation exercise such as the one below:

Look at the piece of chocolate closely in your hand. Listen to the foil as you begin to open it up. Lift the chocolate to your nose and take a deep whiff of the aroma. Notice any feelings or thoughts that pop into your mind as you are about to eat it. Desire? Guilt? Anticipation? As you slowly put chocolate into your mouth, notice the first sensation on your tongue. Notice how it feels to roll the chocolate around in your mouth, how the texture changes. Listen to the sound as you chew the chocolate. Do you get the urge for more? Or is this enough? Is it too sweet or not sweet enough? Does the chocolate bring back any memories, like eating chocolate around the holidays?

Other mindful eating exercises include acceptance affirmations (e.g., “I am focusing on my strength and health”), using neutral words to describe the body and food; and mindful meals, which involve sitting down, removing distractions and intentionally paying attention to the food being eaten. Care must be taken to ensure that the techniques taught do not trigger disordered eating, which can be a problem with some weight-loss and other mindful eating approaches.

Patient feedback has been positive, and the program’s outcomes are currently being collected and evaluated. While many patients lose weight, the focus is on health, not weight. We find that when patients develop the skills to eat more mindfully, their weight begins to take care of itself.

Bringing Mindful Eating to the Community

Cleveland Clinic has coordinated speaking opportunities to teach mindful eating skills to people in Northeast Ohio and across the country. We also have used Twitter to host a mindful eating party and tweet mindful eating tips (@eatingmindfully and @ClevelandClinic). Plans are to continue to use technology and social media to reach greater numbers of people.

There is a growing demand for mindful eating skills as patients try — and often struggle — to lose weight. On the horizon at Cleveland Clinic are mindful eating programs for patients with diabetes and new mothers. As mindful eating gains popularity, there may be a greater demand for other educational opportunities.

Cleveland Clinic is partnering with the YMCA on wellness projects and will offer mindful eating classes for community members to expand the program’s reach. This also serves as an ideal avenue for addressing childhood obesity in the community.

REFERENCES


Dr. Albers Bowling is a clinical psychologist at Cleveland Clinic’s Wooster Family Health Center. She specializes in counseling women, particularly about depression, eating issues, relationship problems, sexual concerns and weight loss. She has written five books on mindful eating. She can be contacted at 330.287.4907 or bowlins@ccf.org.
SOLAR Assessment Tool Analyzes Well-Being and Life Satisfaction

By Jerome (Jerry) F. Kiffer, MA

Positive psychology is at the forefront of Cleveland Clinic’s Executive Health Program. As an executive health coach for the program, I have developed a self-assessment instrument that maps the life domains and satisfaction levels of successful people. The study results gathered from this quality-of-life evaluation tool, called the Spreadsheet of Life and Responsibilities (SOLAR), can serve as normative guidelines and be leveraged to counsel patients experiencing poor health and distress.

SOLAR: A Focus on Success

The Executive Health Program team includes preventive medicine physicians and specialists in health and wellness coaching, exercise physiology and nutrition. We evaluate and counsel more than 2,800 men and women each year through the program, which is part of Cleveland Clinic’s Wellness Institute.

During an eight-year study period between 2003 and 2011, we administered the SOLAR self-assessment tool to more than 8,700 successful, highly educated, healthy executives. The executives who completed SOLAR assessments were consecutive patients presenting for combined annual physical exams and wellness coaching consultations. The SOLAR instrument, which was administered in a one-on-one, face-to-face coaching session, measures the major life domains that studies have found to be important to quality of life (QOL), happiness, subjective well-being and life satisfaction.

Executive health coaching consultations explore executives’ health and QOL in the context of work-life balance, since studies have shown that this balance is of great importance in achieving optimal life satisfaction and preventing health and mental problems. High job strain is associated with risk factors for cardiovascular diseases, obesity, metabolic syndrome and high blood pressure.

Measuring Optimal Life Balance

Findings from SOLAR evaluations administered from 2003 to 2011 identified four major life factors related to work-life balance and QOL: Work, Body, Mind and Loving Relationships. This suggests a life-domain model of well-being, with life satisfaction dependent on mental and physical health domains as well as interpersonal relationships and work/financial domains.

Completing the SOLAR tool involves self-assessment in 15 domains across the four major life factors. Examples include stress level and finances (Work), physical health and fitness level (Body), home/work balance (Mind) and family closeness (Loving Relationships); all 15 domains are listed under their respective factors in Figure 1.

Figure 1. The Spreadsheet of Life and Responsibilities (SOLAR) self-assessment tool evaluates 15 life domains that fall into four major life factors, presented in the quadrants here. These four life factors were identified as being central to quality of life and work-life balance based on initial administration of the tool to several thousand healthy executives.

© 2011 Jerry Kiffer, MA, Cleveland Clinic
The 8,760 consecutive executives who completed the SOLAR self-evaluation tool from 2003 to 2011 rated their satisfaction in these life domains on a scale from 0 (maximum dissatisfaction) to 10 (maximum satisfaction). The overall life satisfaction mean was 7.5. A score of 7 or greater was considered optimal.

For executives, the presence of Loving Relationships was most correlated with overall life satisfaction. Both overall life satisfaction and spirituality load into the Loving Relationships factor. Of note, the mean ratings for the factors of Work and Loving Relationships were higher than those for the Body and Mind factors. This finding suggests a “stress of success” effect — i.e., when someone is highly focused on achieving satisfying Work and Loving Relationships, personal satisfaction may be sacrificed in the Body and Mind realms.

Age and Gender Differences

Our study found that overall life satisfaction was significantly greater for executives in the later stage of life (> 45 years) than for their counterparts age 45 or younger, particularly among men (Figure 2).

Gender differences existed in all 15 domains assessed as well as in overall life satisfaction (Figure 2). Several differences were statistically significant. Men were significantly more satisfied in the professional/productive work domain \((P < .001)\), and women reported significantly greater satisfaction in the financial, healthy eating habits, spirituality, social support and family closeness domains \((P < .014)\).

No significant interaction between life stage and gender was identified.

Implications and Future Questions

The SOLAR assessment tool includes wellness behaviors as components of physical health and can pinpoint targets of interventions to enhance health and overall life satisfaction. The data from completed SOLAR assessments to date are consistent with a biopsychosocial health model. Our investigation’s focus on successful, healthy executives adds to the growing body of research seeking to highlight and quantify positive mental health. Specifically, the domains within the Loving Relationships factor appear to be a core ingredient of life satisfaction and well-being. It may be that money cannot buy the loving connectedness required for well-being and happiness.

Our findings also point to the important contribution of spirituality as a component of Loving Relationships. Spirituality is more than a metaphysical, mental concept. In high-functioning executives, spirituality manifests itself in satisfying, loving relations with others, possibly another thing that money cannot buy.

The SOLAR measure is a self-rating scale using subjective units of satisfaction and depends on subjective report. The tool needs to undergo further convergent validity studies and confirmatory factor analysis. Its Chronbach alpha reliability coefficient is 0.84, which falls within the range considered to indicate good internal consistency.

Follow-up studies can track the impact of coaching interventions on health outcome variables. The SOLAR tool is appropriate for use in behavioral health populations and may be useful as an outcome measure as well as a clinical assessment of well-being.

Mr. Kiffer is an executive health coach for Cleveland Clinic’s Executive Health Program and coordinator of the Psychological Testing Center. He can be contacted at 216.444.9040 or kifferj@ccf.org.

Figure 2. The effects of gender and life stage on life satisfaction according to analysis of variance (ANOVA) testing of SOLAR self-assessment data from healthy executives \((N = 6,326)\). The ANOVA demonstrated significant differences between midlife \((<= 45\) years\) and later-life \((> 45\) years\) executives \((P < .001)\) as well as significant gender differences \((P < .03)\). No significant interaction between life stage and gender was present.
Depression and suicidal ideation or behavior are serious psychiatric comorbidities commonly seen in patients with neurological disorders. Among patients with multiple sclerosis, epilepsy, Parkinson disease and dementia, the prevalence of psychiatric comorbidities ranges from 20 percent to as high as 50 percent.

Given these high rates of morbidity, Cleveland Clinic’s Neurological Institute has initiated systematic screening for depression using the nine-item Patient Health Questionnaire-9 (PHQ-9) as part of an electronic patient-reported outcomes collection initiative known as the Knowledge Program. The PHQ-9 is administered to patients across the Neurological Institute’s 18 disease-based centers, including those focusing on epilepsy, multiple sclerosis, psychiatry/psychology, neurology, neurosurgery and rehabilitative medicine. A PHQ-9 score of 10 to 14 indicates moderate depression, a score of 15 to 19 indicates moderate to moderately severe depression and a score of 20 or higher signifies a severe level of depressive symptoms.

Recognizing Suicidal Tendencies

The Joint Commission recently made suicide screening a national safety goal, and legacy depression measures such as the PHQ-9 typically include a question regarding suicidal ideation or behavior. Indeed, item 9 of the PHQ-9 asks patients how often they have thoughts that “you would be better off dead” or of “hurting yourself in some way.” While some investigators have used item 9 of the PHQ-9 as a suicide screen in primary care, others are reluctant to rely on a single binary question for screening, especially considering its potential for high false-positive results. Moreover, while most patients who screen positive for suicidal ideation or behavior have a mood disorder, not all do. Therefore, screening for depression may not be the optimal means of identifying suicide risk.

Over a five-year period, we compiled demographic and PHQ-9 data for patients in three specific disease-based centers within the Neurological Institute and for all patients within the institute as a whole (N = 135,403) (Table). The number of patients who reported morbidity due to major depression across the institute’s 18 centers was striking, with 34 percent having a PHQ-9 score of 10 or greater. In addition, 15 percent of patients across the Neurological Institute endorsed item 9 — that is, they reported suicidal thoughts.

Testing the Test

The high number of patients who endorsed PHQ-9 item 9 across our centers reinforced our questions about its ability to adequately determine suicide risk. This prompted us to conduct a preliminary study to implement and evaluate a self-reported suicide screen, the Columbia-Suicide Severity Rating Scale (C-SSRS). The C-SSRS is the first evidence-based scale to assess the full range of suicidal ideation and behaviors, and it provides a summary measure (positive or negative screen) for suicide risk as well as categorical outcomes for ideation vs. behaviors. The scale has demonstrated good convergent, divergent and predictive validity as well as good sensitivity, specificity and responsiveness to change. The C-SSRS is considered the gold standard for determining suicide risk and was recently endorsed by the Food and Drug Administration and the Centers for the Disease Control and Prevention.

We propose an efficient two-step suicide screening process whereby all patients complete the PHQ-9 and only those with a positive item 9 response complete the C-SSRS.

We made the strategic decision to initially use the C-SSRS only for outpatients in our psychiatry department since suicide risk assessment is part of the standard of psychiatric care. For this pilot study, we (I and my Neurological Institute colleague Irene Katzan, MD) worked closely with Kelly Posner, PhD, principal developer of the C-SSRS, to adapt the computerized, self-rated version of the C-SSRS for administration through Cleveland Clinic’s electronic Knowledge Program interface (i.e., for completion via a touch-screen tablet device).
We hypothesized that a patient-reported outcomes collection tool such as the C-SSRS would identify a significant number of false-positive screens from item 9 of the PHQ-9 and be easily integrated into the clinical workflow.

We collected data from Dec. 14, 2011, to April 4, 2012, during which time 1,461 outpatients completed a baseline C-SSRS and the PHQ-9. The observed point prevalence of suicidal ideation and/or behavior was 24 percent based on responses to PHQ-9 item 9, whereas it was only 6 percent based on the C-SSRS. Thus, administration of the C-SSRS markedly reduced the number of false-positive suicide screens compared with using item 9 alone.

As expected, patients with lower PHQ-9 scores tended to be less likely to endorse item 9 or to screen positive on the C-SSRS. Likewise, as PHQ-9 scores increased, the likelihood of endorsing item 9 or screening positive on the C-SSRS increased (Figure).

### Patients Report Satisfaction

Another of our information-gathering initiatives was a 12-question patient satisfaction survey. We asked our patients about their experience with and concerns about completing a suicide screen as part of their routine clinical visit with their psychiatrist or psychologist. The majority of patients (91 percent) supported the idea of regular suicide screening. Some other key findings:

- 71 percent felt that their provider would find the information useful
- 16 percent felt apprehensive about the questionnaire
- 98 percent did not think that suicide screening increases suicidal thoughts
- 38 percent were uncomfortable with nonpsychiatric medical providers being able to access their screening results
- 80 percent felt that the electronic touch-screen tablet was easy to use
- 45 percent felt that using the tablet made reporting sensitive topics, such as suicide, easier

### Our Plan for the Future

Our data suggest that relying solely on PHQ-9 item 9 as a suicide screen leads to a high proportion of false positives. As an alternative, administration of the C-SSRS in...
an electronic self-report format resulted in a fourfold reduction in the number of positive screens. We also found that administration of the C-SSRS in this way was feasible and supported by patients. Limitations of our C-SSRS study include its completion within an outpatient psychiatric population that already has a high baseline prevalence of suicidal ideation and behavior. In addition, our results from a tertiary care center may not be generalizable to the community.

Nevertheless, our findings prompt us to propose a more efficient, two-step suicide screening process whereby all patients complete the PHQ-9 and only those with a positive item 9 response complete the C-SSRS. This approach would maximize sensitivity for detecting patients at risk for suicide while minimizing patient burden and the discomfort that some patients feel when asked questions related to self-harm. Whether our proposed two-step process would apply to other ambulatory neurological populations deserves further study.

REFERENCES


Dr. Viguera is a staff psychiatrist in the Center for Behavioral Health and the Department of Psychiatry and Psychology. Her specialty interests include women’s health and women’s issues. She can be contacted at 216.445.8245 or viguera@ccf.org.
Cleveland Clinic Resource Guide

About Cleveland Clinic
Cleveland Clinic is an integrated healthcare delivery system with local, national and international reach. At Cleveland Clinic, 2,800 physicians represent 120 medical specialties and subspecialties. We are a main campus, 18 family health centers, eight community hospitals, Cleveland Clinic Florida, the Cleveland Clinic Lou Ruvo Center for Brain Health in Las Vegas, Cleveland Clinic Canada, Sheikh Khalifa Medical City, and Cleveland Clinic Abu Dhabi.

In 2012, Cleveland Clinic was ranked one of America’s top 4 hospitals in U.S. News & World Report’s annual “America’s Best Hospitals” survey. The survey ranks Cleveland Clinic among the nation’s top 10 hospitals in 14 specialty areas, and the top hospital in three of those areas.

Resources for Physicians

Referring Physician Center and Hotline
Cleveland Clinic’s Referring Physician Center has established a 24/7 hotline — 855.REFER.123 (855.733.3712) — to streamline access to our array of medical services. Contact the Referring Physician Hotline for information on our clinical specialties and services, to schedule and confirm patient appointments, for assistance in resolving service-related issues, and to connect with Cleveland Clinic specialists.

Physician Directory
View all Cleveland Clinic staff online at clevelandclinic.org/staff.

Track Your Patient’s Care Online
DrConnect is a secure online service providing real-time information about the treatment your patient receives at Cleveland Clinic. Establish a DrConnect account at clevelandclinic.org/drconnect.

Critical Care Transport Worldwide
Cleveland Clinic’s critical care transport teams and fleet of vehicles are available to serve patients across the globe.

• To arrange for a critical care transfer, call 216.448.7000 or 866.547.1467 (see clevelandclinic.org/criticalcaretransport).

• For STEMI (ST elevated myocardial infarction), acute stroke, ICH (intracerebral hemorrhage), SAH (subarachnoid hemorrhage) or aortic syndrome transfers, call 877.379.CODE (2633).

Outcomes Data
View clinical Outcomes Books from all Cleveland Clinic institutes at clevelandclinic.org/outcomes.

Clinical Trials
We offer thousands of clinical trials for qualifying patients. Visit clevelandclinic.org/clinicaltrials.

CME Opportunities: Live and Online
The Cleveland Clinic Center for Continuing Education’s website offers convenient, complimentary learning opportunities. Visit ccf.me.org to learn more, and use Cleveland Clinic’s myCME portal (available on the site) to manage your CME credits.

Executive Education
Cleveland Clinic has two education programs for healthcare executive leaders — the Executive Visitors’ Program and the two-week Samson Global Leadership Academy immersion program. Visit clevelandclinic.org/executiveeducation.

Resources for Patients

Medical Concierge
For complimentary assistance for out-of-state patients and families, call 800.223.2273, ext. 55580, or email medicalconcierge@ccf.org.

Global Patient Services
For complimentary assistance for national and international patients and families, call 001.216.444.8184 or visit clevelandclinic.org/gps.

MyChart®
Cleveland Clinic MyChart® is a secure, online personal healthcare management tool that connects patients to their medical record. Patients can register for MyChart through their physician’s office or by going online to clevelandclinic.org/mychart.

MyConsult
Cleveland Clinic offers online medical second opinions for more than 1,000 life-threatening and life-altering diagnoses. For more information, visit clevelandclinic.org/myconsult or call 800.223.2237, ext. 43223.
Every life deserves world class care.
Go green with Cleveland Clinic today!

Use your device to connect to our medical professionals page and sign up to receive publications electronically from Cleveland Clinic Neurological Institute.

To read the QR code with your device, find and download a reader from http://ccf.org/QRCodes.