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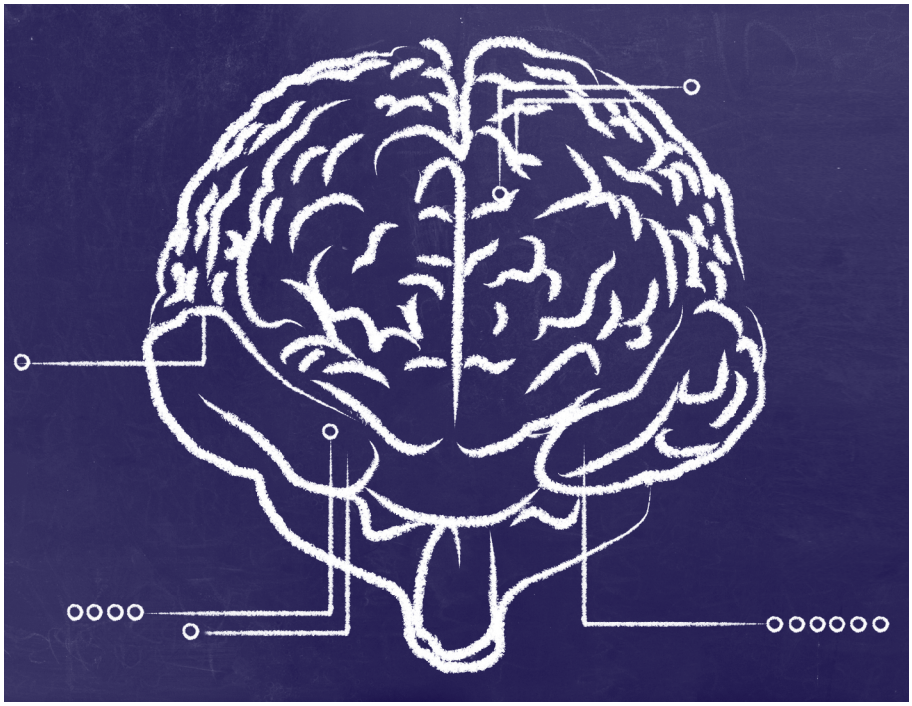


This month's issue of the *Residents' Journal* features articles on a variety of topics. The issue begins with a study by Mario A. Cristancho, M.D., and Josh Natbony, B.A., on psychoeducation in bipolar disorder, focusing on patients' knowledge of their illness. Next, Nikhath Irfana, M.D., and Suraj Singh, M.D., present a case report of an elderly man with dementia who was initially diagnosed with bipolar disorder. Chris A. Karampahtsis, M.D., M.P.H., discusses a case in which manganese toxicity may have contributed to symptoms in a suicidal patient. Mark A. Oldham, M.D., provides detailed information regarding the benefits and importance of residents teaching medical students. Lastly, Priya Sehgal, M.D., M.A., highlights elements of psychiatric school consultation, emphasizing roles for consulting child psychiatrists.

Editorial

Shoulder to Shoulder

Arshya Vahabzadeh, M.D.
Editor-in-Chief

This year, almost 14% of our incoming psychiatry interns are non-U.S. citizen, international medical graduates (IMGs) (1). Our specialty is by no means an exception, as 27% and 11% of incoming internal medicine and pediatric interns, respectively, are also non-U.S. citizen IMGs. In fact, IMGs have been recruited to almost every discipline, including neurosurgery, anesthesiology, and neurology.

A plethora of reasons may draw IMGs to the United States. A few particularly compelling reasons that attract IMGs to the United States are the quality of the training programs, the academic institutions, and the position of the U.S health care system as the standard bearer for medical advancement.

On my own journey from England to the United States, I have become increasingly aware of some of the challenges that may await IMGs. In the U.S. medical graduate system, being an IMG may place one at a disadvantage, especially if you are also not a citizen or permanent resident. This, however, does not imply that IMGs cannot succeed; in fact, medicine has countless examples of very successful IMGs. The former president of the APA and endowed chair in psychiatry, Dr. Dilip Jeste, is one such IMG psychiatrist. Over the last several decades, IMG psychiatrists have contributed exceedingly well to the richness and breadth of thought in psychiatric practice and advances in neuroscience and psychiatric research.

The most common concerns regarding non-U.S. medical graduates stem from worries over the quality of their medical education, linguistic ability, and the ability to connect with U.S. patients. In addition, IMGs also face notable additional barriers to career advancement. Both the residency and fellowship matches are strewn with additional requirements for IMGs, including an unwillingness of many programs to consider any visa support. Some institutions essentially close off their fellowship options to non-U.S. citizens, regardless of personal, academic, or clinical promise or achievement. Other career-enhancing options, including prestigious fellowships and research grants for residents and fellows, also come with the same restrictions. The National Institute of Mental Health, despite funding researchers from around the world, substantially restricts most of its U.S. career development grants to only U.S. citizens and permanent residents. For some IMGs, this reality makes them question their equality in this system. I myself, quite frankly, find our acceptance of such practices concerning.

Psychiatry is full of talented individuals, both from the United States and overseas. If our end goal is to provide quality clinical care and understand the most complex conditions in the house of medicine, we must realize all the human potential in our field. It is not a question of advocating for preferential treatment of any group of individuals, rather a belief that equality in opportunity and reduced discrimination are essential components for the success of our field. Resident and fellow career opportunities and recruitment must focus on ability and achievement and not on nationality.

Despite these challenges, there are a range of highly prestigious training programs and fellowships that set the precedent for making academic achievement their primary consideration. The APA's Leadership Fellowship and the American College of Psychiatry's Laughlin Fellowship are examples of such opportunities. Additionally, the American Association of Directors of Psychiatric Residency Training, recognizing these considerable barriers for IMGs, has proactively established a fellowship program linking promising IMGs to world-renowned mentors.

In conclusion, I believe that ensuring that training opportunities are primarily merit based is key in moving our profession forward in such challenging times.

Dr. Vahabzadeh is a first-year fellow at Massachusetts General Hospital, McLean Hospital, and Harvard Medical School, Boston.

Reference

1. National Resident Matching Program: Results and Data 2013: Main Residency Match. Washington, DC, National Resident Matching Program, 2013. http://www.nrmp.org/data/resultsanddata2013.pdf

Psychoeducation in Bipolar Disorder: How Much Do Our Patients Know?

Mario A. Cristancho, M.D.
Josh Natbony, B.A.

Bipolar affective disorder is a chronic and recurrent condition associated with significant morbidity, reduced longevity, and disability. The 12-month prevalence of bipolar affective disorder in adults is 2.6%; of these, 83% are considered to have severe symptoms (1). Given such public health significance, multiple formal clinical trials have been carried out, leading to the approval of newer pharmacologic agents, but nonpharmacological approaches have received less attention. Available treatment modalities for the treatment of bipolar disorder include psychoeducation, which is a simple therapy with specific therapeutic goals and relatively easy to fit into practice (2). Psychoeducation has been defined as a training aiming to promote awareness and improvement of tools to better cope and live with a specific condition (2). This modality is designed to decrease guilt and hopelessness and encourage responsibility and a proactive aptitude (2). Benefits from psychoeducation include illness awareness, compliance enhancement, early symptom identification, and lifestyle modification, leading to both a decrease in the risk of relapse and hospitalization (3, 4).

Evidence supporting the use of psychoeducation as an adjunctive treatment in bipolar disorder has grown over the last decade and includes randomized controlled trials (5–9). Perry et al. (9) reported the effect of a short (7–12 sessions) psychoeducation course on symptoms in a sample of 69 bipolar patients. Patients received training in early identification of symptom relapse and prompt access to treatment. Patients who received psychoeducation training exhibited a statistically significant decrease in the number of recurrent manic episodes and an increase in time to relapse to mania (48-week difference, p=0.008). The exposed group also had an increase in social function and job performance over the observation period (18 months).

This effect on time to relapse was also observed by Colom et al. (5) in a sample of 120 bipolar patients (type I and II) in sustained remission with pharmacotherapy. These patients were randomly assigned to either adjunctive weekly group psychoeducation or nonstructured group meetings for 20 weeks. In this single-blind study, the psychoeducation intervention significantly decreased the relapse rate (38% in the psychoeducation group compared with 60% in the comparison group). Rates of recurrence, time to recurrence, and hospitalization rates were also significantly lower in the group receiving psychoeducation. Even longer-term efficacy was demonstrated in a randomized controlled trial in which patients exposed to group psychoeducation exhibited longer time to recurrence and spent significantly less time acutely ill than their study counterparts (432-day difference, p=0.0001) over a 5-year observation period (7).

Over the last two decades, both research and clinical practice in psychiatry have been gradually moving away from more conventional treatment approaches. While most of our efforts and training is being focused on complex pharmacological strategies, we unintentionally neglect more simple tools such as formal psychoeducation. With this in mind, we hypothesize that a significant portion of patients treated in a tertiary care bipolar program lack an adequate degree of knowledge about their condition. Therefore, in the present study, we attempted to assess the degree of illness-related knowledge and psychoeducation of patients in an outpatient tertiary care bipolar disorder clinic at an academic medical center.

Method

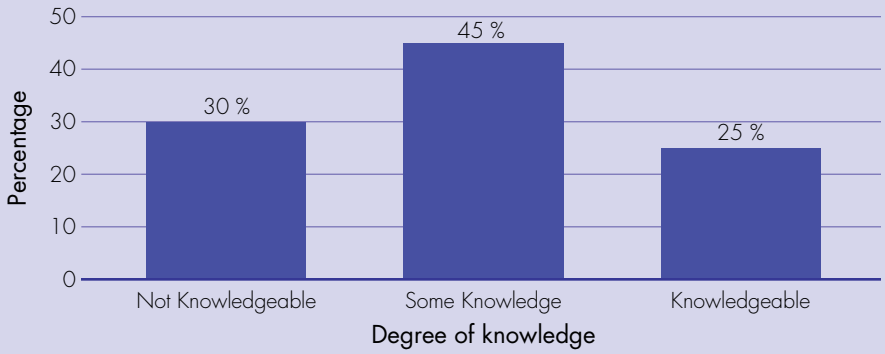
A sample of 60 patients with bipolar disorder was studied. The sample was comprised of patients with bipolar I and II disorder. Participants were recruited from the Bipolar Disorders Clinic at the University of Pennsylvania. We conducted 5-minute interviews assessing participants' knowledge of bipolar disorder. The interview consisted of five questions adapted from the Barcelona Bipolar Disorders Psychoeducation Program (5). We included questions that explore patient knowledge of the nature and course of the condition, triggering factors and behaviors leading to mood episodes, and clinical characteristics of episodes of mania and mood elevation, as well as the short- and long-term role of pharmacological agents for bipolar disorder (Figure 1). Specific instructions on how to ask questions, use anchors, and score answers were included in the form to minimize low scores as a result of low effort and interrater variability. Each item was scored on a scale from 0 to 2, with a possible total score of 10 on the interview. For the total score, participants were categorized as "not knowledgeable" (total score <4), "some knowledge" (total score 5–7), or "knowledgeable" (total score ≥8). Item-wise, a score of 2 was considered to be reflective of an adequate level of knowledge (knowledgeable), and a score of 1 was considered to reflect some knowledge in a specific area. Patients were expected to recognize two features of the illness, including its recurrent nature, both mood poles, and the role of chemical and genetic factors, in order to obtain a score of 1 for knowledge related to the nature and course of their condition. They were required to mention two factors, including stressful life events, major life changes, noncompliance with medications, substance use, and disorga-

FIGURE 1. Questions Included in Patient Questionnaire

1. What is bipolar disorder?
2. What are triggering factors/behaviors that may lead to a manic or depressive episode?
3. What are the symptoms of mania?
4. What are the symptoms of depression?
5. What is the role of medication in bipolar disorder?
6. How long ago (years) were you officially diagnosed with bipolar disorder?

nized sleep patterns, in order to obtain a score of 1 for knowledge about triggering factors and behaviors. When exploring knowledge about the clinical characteristics of mood episodes, simply answering "feeling depressed" or "feeling elated" was not indicative of knowledge; patients were expected to also be able to describe at least one co-occurring symptom to obtain a score of 1 for the question. Additionally, they had to mention two roles of medications, including treatment of acute symptoms, prevention of new mood episodes, and decrease in severity of new mood episodes, to obtain a score of 1 for the question. When their answers exceeded the above thresholds, a score of 2 was given for the item. A sixth question was added in order to assess the estimated time from official diagnosis, since it is a variable that may affect the quantity and quality of illness-related knowledge.

FIGURE 2. Bipolar Patients' Knowledge of Their Illness



Results

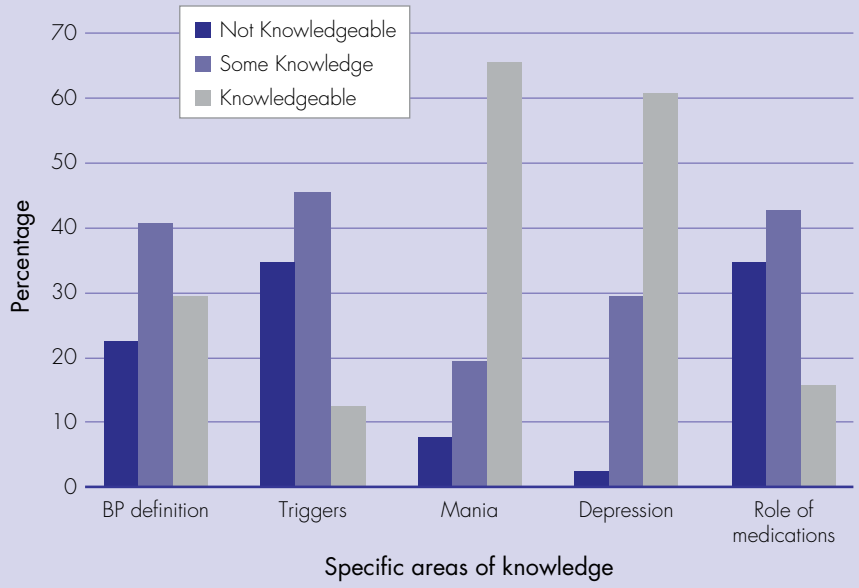
Only about 25% (15 out of 60) of patients demonstrated adequate knowledge (total score ≥8) of bipolar disorder (Figure 2). The sample exhibited knowledge on symptoms of mood episodes, with 68% and 63% being knowledgeable (item score of 2) of mania and depression, respectively. The cohort exhibited a relative lack of knowledge of triggers for mood episodes and of the role of medications, with only 15% (9 out of 60) and 18% (11 out of 60), respectively, qualifying for adequate knowledge (item score of 2) on these areas (Figure 3).

Estimated time from official diagnosis was obtained for 37 participants. The majority of these had carried an official diagnosis of bipolar disorder for longer than 1 year, with only a minority of patients (four out of 37) officially diagnosed less than 1 year prior. The degree of knowledge augmented as the time from official diagnosis increased, with a mean total score of 7.4 (out of 10) among patients diagnosed more than 10 years ago and a mean total score of 2 (out of 10) among those diagnosed less than 1 year ago.

Discussion

Although research has shown that psychoeducation is an effective treatment for the prevention of bipolar relapse and psychiatric hospitalization, our results

FIGURE 3. Bipolar Patients' Knowledge of Specific Aspects of Their Illness[a]



[a] BP=Bipolar disorder.

suggest that a significant portion of patients treated in our academic tertiary care bipolar program lack an adequate degree of knowledge about their condition. This is rather surprising given the proven benefits of psychoeducation and the assumed compromise with patient education in academic clinical centers. Although this sample demonstrated knowledge of symptoms of mood episodes, their lack of adequate knowledge of triggering factors and the role of medications (short- and long-term) is likely to translate into less ability to minimize relapse and to maintain compliance with medications. One possible explanation for these results is the lack of formal psychoeducation programs in academic medical centers. Instead, informal psychoeducation is sprinkled on patients, mainly upon starting treatment and during periods of crisis. Psychoeducation should be understood by physicians as more than informing patients about their diagnosis and should include recommendations on compliance and lifestyle modification. These are in fact expected standards of adequate patient care. Although considered a modality of therapy, psychoeducation is easy to learn, does not require rigorous training for the development of advanced skills, and can be used in the context of day-to-day clinical practice. Encouraging and monitoring treatment compliance is an inherent part of patient care and does not replace formal psychoeducation. Psychoeducation is beneficial even in the absence of noncompliance, suggesting that the role of psychoeducation in bipolar disorder goes beyond improvement of compliance. In a study conducted by Miklowitz et al. (8), 50 bipolar I patients compliant with a medication regimen were randomly assigned to concomitant weekly group psychoeducation or nontherapeutic group meetings for 20 weeks. This was a single-blind study with a 2-year observation period. Recurrence rates were significantly lower in the psychoeducation intervention group, at both the short-term (16% in the psychoeducation group compared with 56% in the comparison group) and long-term (60% in the psychoeducation group compared with. 90% in the comparison group). The number of hospital admissions was also lower in the psychoeducation intervention group (5, 8).

Our study has some limitations. First, the results are limited to our clinical center. We did not asses variables such as age, number of previous episodes and hospitalizations, presence of supportive networks, and current clinical status that may have some effect on the degree of illness-related knowledge. Additionally, although adapted from an established program, the questionnaire used in this study has not been validated.

This is the first study to our knowledge to assess patients' own understanding of their condition in a real-world clinical setting. For our center, this has been an important step toward implementing a formal psychoeducation program for bipolar disorder to optimize patients' treatment experience and outcomes. Although these results are limited to our outpatient clinic, we speculate that they will likely be replicated in other academic clinical centers.

At the time this article was accepted for publication, Dr. Cristancho was a fifth-year fellow in mood disorders and neuromodulation in the Department of Psychiatry, University of Pennsylvania School of Medicine, Philadelphia. Mr. Natbony is a first-year medical student at Hofstra North Shore-Long Island Jewish School of Medicine, New York.

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For further information on what patients with mood disorders want to learn about their illness, see the article by Hallett et al. *in this month's issue of* Psychiatric Services.

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Case Report

Dementia Masquerading as Bipolar Disorder

Nikhath Irfana, M.D.
Suraj Singh, M.D.

Neurocognitive impairments are common in both neurodegenerative and affective disorders. They can often pose a challenge for treating psychiatrists, especially in cases with early-onset dementia and/or late-onset mood disorder. We present a case of dementia masquerading as treatment-resistant affective disorder and highlight the importance of early detection of cognitive deficits to deliver appropriate care as early as possible.

Case

"Mr. A" is a 62-year-old married, retired, Caucasian man with a family history significant for Alzheimer's dementia. He was admitted to our inpatient unit with a diagnosis of bipolar disorder and was currently depressed with catatonic features. He was mute with prominent psychomotor retardation. Laboratory work-up, including CBC, comprehensive metabolic panel, liver function test, urine drug screen, and lipid panel and tests for vitamin B12, folate, and thyroid-stimulating hormone levels, was unremarkable. His medications on admission included bupropion extended release (300 mg, p.o. every morning) and risperidone (1 mg, p.o. every night at bedtime). The patient showed some improvement in psychomotor functioning with use of lorazepam; however, he continued to struggle with insomnia. His score on the Montreal Cognitive Assessment was 25, with deficits on delayed recall, language, and trail making, as well as on the serial 7s. A significant latency was noted on all sections of this assessment measure. Lorazepam and risperidone were titrated to 2 mg (p.o. twice daily) and 1 mg (p.o. twice daily), respectively. Diphenhydramine (50 mg, 1–2 pills p.o. every night at bedtime as needed) was added as a sleep aid. The patient subsequently became delirious, as evidenced by diffuse slowing on EEG and an acute drop to a score of 9 on the Montreal Cognitive Assessment. At this point, dementia was considered, given the patient's age, family history, presentation, and rapid development of delirium with anticholinergic medications. MRI of the brain revealed only mild atrophic changes that were felt to be appropriate for his age. Lorazepam and diphenhydramine were discontinued with resolution of delirium. Detailed neuropsychological and neuropsychometric testing revealed deficits that were consistent with a diagnosis of dementia.

A family meeting was held after the episode of delirium, and it was revealed that Mr. A had initially presented to the mental health clinic for agitation 4 years prior. At that time, he described his symptoms as racing thoughts and poor sleep. He attributed these symptoms to being worried that he "missed something." He denied any alcohol or illicit drug use at that time. He had also quit his job of 25 years because of what he described as "feeling slowed." His symptoms were conceptualized as depressive disorder, and he was prescribed sertraline (200 mg, p.o. once daily) with minimal benefit. He was subsequently tried on multiple psychotropics that included trials of a selective serotonin reuptake inhibitor, serotonin norepinephrine reuptake inhibitor, and tricyclic antidepressant. He continued to worsen with regard to irritability, poor sleep, financial disorganization, memory difficulties, decreased motivation, and repetitive acts such as cleaning up the yard when it had already been done. His diagnosis was changed to bipolar affective disorder, and he was prescribed lithium (900 mg, p.o. every night at bedtime), but the medication was discontinued due to side effects. It was noted in the medical records that his wife provided most of the information during the visits. Given his poor response to medications, ECT was administered but had to be discontinued due to worsening memory problems. The patient was continued on bupropion extended release (300 mg, p.o. once daily) and risperidone (1 mg, p.o. every night at bedtime).

Discussion

Given the complex history, multiple investigations, and multiple past treatments for the above patient, we entertained various diagnoses and subsequently worked our way through to the most likely fit.

While the diagnosis of bipolar disorder can be obvious in its most classical forms, it is far more challenging when the clinical presentation is atypical. Interestingly, bipolar disorder represents approximately 20% of mood disorders in the elderly (1), and 8% of new cases of bipolar affective disorder occur in geriatric patients (2).

Depp and Jeste (3) reported that in the elderly, presentation of bipolar disorder usually conforms to DSM criteria, and patients exhibit robust response to usual pharmacotherapy. Behavioral and psychological symptoms of dementia have been identified as an integral part of dementia and can occur during any stage of the illness. The affective, psychotic, and behavioral symptoms that constitute behavioral and psychological symptoms of dementia are commonly managed by psychiatrists, and appropriate pharmacotherapy is often warranted in an effort to manage these troublesome symptoms.

Meta-analyses have documented the existence of cognitive deficits in all phases of bipolar disorder, which apparently are independent of the affective state (4, 5). These deficits involve selective atten-

tion, processing speed, concentration, immediate episodic memory, attention deviance, executive function, strategic thinking (1), abstraction, verbal learning/immediate memory/planning, and perseveration (4, 5). However, other studies have reported relative preservation in visuospatial memory, verbal fluency, and vocabulary in bipolar affective disorder patients (6–8).

Individuals with dementia are almost three times more likely to experience delirium (as our patient did) than those without dementia, and delirium has been associated with a decline in cognitive functions over the subsequent 5 years (2). As a result, an episode of delirium should prompt the clinician to consider a diagnosis of underlying dementia. Use of anticholinergic medications, such as the diphenhydramine used in the above case, are an independent cumulative risk factor for delirium in the elderly (9).

Conclusions

The significant symptom overlap that often exists between dementia and primary psychiatric disorders represents a particular diagnostic challenge in certain patient populations. However, it remains difficult to establish the true nature of these dementia spectrum disorders despite data emerging from neuropsychological and neuroimaging studies (Table 1). In our case, a thorough neuropsychiatric evaluation, including medical work-up, neuroimaging, and neuropsychological assessment, coupled with good collateral information, provided the best basis on which we were able to develop a comprehensive differential diagnosis and deliver care. This multifactorial approach to patient care should always be considered in persons with late-onset behavioral disturbances. This will help us deliver the most appropriate and needed care at the earliest and hopefully relieve patients' suffering and any distress to their families.

TABLE 1. Differentiating True Dementia From Bipolar Spectrum Disorder[a]

Collateral Data
Psychiatric history • Episodes of mania or depression • Suicide attempts • Anxiety disorders • Alcoholism • Substance abuse Medical history Personality (cyclothymic or irritable or hyperthymic temperament) Life events (psychosocial stressors)

[a] The items listed represent information that must be obtained prior to diagnosis; drawn from Goldberg and Chengappa (5).

Dr. Irfana is a fourth-year resident in the Department of Psychiatry, Medical College of Wisconsin, Milwaukee. At the time this article was accepted for publication, Dr. Singh was a fourth-year resident.

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Case Report

Manganese Toxicity: A Potential Contributor to Mood Disorder and Psychosis

Chris A. Karampahtsis, M.D., M.P.H.

In an acutely suicidal patient, the potential contribution of neurotoxic environmental exposure to the underlying illness may be overlooked. The present case is that of a middle-aged man who presented with suicidal and homicidal ideation and reported an occupational history that prompted consideration of manganese toxicity as a potential etiologic factor.

Case

"Mr. G" is a 40-year-old married, Caucasian male welder who presented with a 2- to 3-month history of escalating depressive symptoms, including suicidal ideation, anhedonia, neurovegetative symptoms, and intermittent auditory and visual hallucinations experienced as a speaking, headless person. He noted increasing feelings of anxiety, irritability, and hostility around other people, but there was no indication of delusional thought content. He described feeling hostility toward his plant manager for demeaning him at work and admitted to pursuing the manager home once, 6 weeks prior to admission, with homicidal intent. One day prior to admission, the patient impulsively crashed his motorcycle. He sustained no serious injuries, but his wife later discovered that he had been carrying a gun and had intended to kill himself once he arrived home. His previous baseline was described as slightly anxious, especially in social situations, although he enjoyed his work and being with his family.

His past psychiatric history was remarkable for one suicide attempt at age 17 and an unsuccessful trial of paroxetine for depression in his early 30s, but no hospitalizations were reported. Treatment for his presenting symptoms was first sought 1 month earlier through a mid-level outpatient provider. Although the exact prescribing history was unknown, his current medications included escitalopram (10 mg daily), an unknown daily dose of alprazolam, buspirone (5 mg three times daily), and clomipramine (25 mg twice daily). Family psychiatric history was positive for paranoid schizophrenia in a maternal aunt and cousin and bipolar disorder in a paternal uncle and aunt. His mother had an unspecified substance use disorder and had died 3 to 4 years earlier. The patient's substance history was positive for heroin dependence, which was in full remission, and past cannabis, tobacco, and alcohol abuse but no recent use. Arrests for assault and DUI were noted from 20 years earlier. He had worked as a welder for over 20 years and admitted inconsistent use of protective gear. Additionally, he described worksite air monitors as being placed far from the welding sites. He had stopped working following confrontation with his manager, and his wife was contemplating divorce because of his deteriorating behavior. His medical history was unremarkable.

On admission, he presented as an anxious, tearful, middle-aged man who was oriented to person, place, and year. He described his mood as "anxious." His thought process was slow but mostly linear and logical. He verbalized vague suicidal ideation and homicidal thoughts toward his plant manager, but he denied any current specific plans. He was observed to be talking as though responding to hallucinations, but he realized that they were not real. His gait was slow and dystonic, characterized by a subtle overlifting of the front leg and a tendency to lean forward and use stationary objects for balance.

A urine drug screen was positive only for benzodiazepines. The patient's serum manganese level was pending. Other laboratory results were unremarkable. Diagnostic impression included social anxiety disorder, generalized anxiety disorder, and bipolar I disorder, mixed type, with psychotic features (provisional). His current medications were continued, since they were reportedly of some benefit, but alprazolam was replaced with clonazepam. Quetiapine was initiated but poorly tolerated, and valproic acid was then prescribed as a mood stabilizer. His mood, anxiety, and hallucinations subsequently improved, and his suicidal and homicidal thoughts subsided. The patient was released to the care of an outpatient psychiatrist, and authorities were notified about the previous threatening behavior directed toward his manager.

Discussion

The presentation of the patient in the above case suggested several potential diagnoses, but most could be ruled out. First, the patient's medical history and available laboratory results did not support a medically related or substance-induced disorder. Late-onset schizophrenia was considered, but characteristic symptom criteria were not met, with only atypical hallucinations reported. With several weeks of anhedonia, neurovegetative signs, and hallucinations that occurred only at the height of the mood disturbance, major depressive disorder with psychotic features was also a possibility; however, concurrent racing thoughts, prominent irritability, decreased need for sleep, psychomotor agitation, and distractibility, all lasting for more than 1 week, were more consistent with bipolar I disorder. Recent antidepressant use may have exacerbated the manic symptoms, although these symptoms apparently were evident prior to the patient receiving any medication (1). Alprazolam, likewise, may have contributed to his disinhibited behavior, but the impulsivity predated use of a benzodiazepine (2). Finally, man-

ganese toxicity cannot be ruled out as a contributing factor. Given the patient's unsafe exposure history and the presence of symptoms similar to the known neuropsychiatric sequelae of manganese overexposure, it is helpful to understand manganese toxicity as a potential co-occurring condition (3).

"Manganism" typically progresses from environmental overexposure to acute intoxication, also known as *locura manganica*, which may culminate in manganese-induced parkinsonism, a manifestation of chronic overexposure. Initial excessive manganese exposure is characterized by poorly defined subclinical complaints, including insomnia, anorexia, decreased libido, apathy, fatigue, irritability, headaches, and muscle cramps. *Locura manganica*, or "manganese madness," is characterized as a syndrome of violent and compulsive behavior, emotional instability, disorientation, and hallucinations, with symptoms typically lasting a few weeks (4, 5). Manganese-induced parkinsonism features a dystonic, high-stepping, plantar-flexed, "cock-walk" gait, as well as postural intention tremor and a tendency to fall forward, along with classic rigidity, tremor, masked facies, hypokinesia, and bradykinesia. In contrast, idiopathic Parkinson's disease is characterized by shuffling gait, resting tremor, and a tendency to fall backward. The patient's violent behavior, emotional volatility, hallucinations, and exaggerated forward-leaning gait are notable (3–5).

His history, presenting symptoms, and physical findings were consistent with known neuropsychiatric features of both acute and chronic manganese exposure; however, review of the literature reveals only poorly defined diagnostic criteria for manganese toxicity. Although elevated serum manganese levels may support the diagnosis, some disagreement exists about whether serum levels adequately reflect total body manganese burden (4). In the present patient, the serum manganese level, measured 6 weeks after his last exposure, was 14.7 mcg/l (normal range, 4.2–16.5).

Manganese has been shown to accumulate in the globus pallidus of the basal ganglia, affecting astrocyte function and causing dopaminergic dysfunction, gliosis, and neuronal loss. It is suggested that this indirect alteration of the nigrostriatal dopaminergic pathway leads to the neurological signs of chronic manganism (3, 5). Bilaterally increased globus pallidus signal intensity on MRI, therefore, supports the diagnosis, but there is evidence that MRI findings may normalize if exposure to manganese is mitigated (6). Unfortunately, no imaging studies or further neurologic evaluation were obtained during the patient's hospitalization. Treatment with levodopa or chelation therapy with edetic acid is reported to only partially improve clinical symptoms of manganese intoxication; to our knowledge, no other specific treatment strategies for manganese toxicity have been published (4). Clinically, targeting treatment to specific symptoms can be helpful, as evidenced in the present case. The patient's subsequent progress since discharge is unknown.

Conclusions

There are subtle clinical differences between manganese intoxication and bipolar disorder with psychotic features, as well as between chronic manganism and idiopathic Parkinson's disease. This case highlights the importance of environmental and occupational exposure history and neurologic examination in differentiating common psychiatric disorders from the adverse effects of manganese overexposure, particularly among miners and welders, but potentially also among the general population as a result of increasing use of manganese as a fuel additive (3).

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Reflections From a Psychiatric Resident as Teacher

Mark A. Oldham, M.D.

Residents are often intimately involved in medical student education, and the literature on the phenomenon of resident-as-teacher has been expanding since the 1980s. To date, most of the research has centered on developing and implementing programs to teach residents how to become effective educators (1–6), and for good reason (7–10). However, emerging in the midst of this literature are residents' voices (11–17).

That residents should be involved in teaching medical students is often an unspoken presumption. The purpose of this article is to explore, from the resident's perspective, why residents should be involved. It is hoped that by discussing various benefits of resident involvement in medical student education and by responding to concerns that residents may have, residents may be inspired to consider incorporating teaching into their residency experience and perhaps even pursue a career in academic psychiatry.

Benefits of Residents Teaching Medical Students

Mastery and Self-Reflection

Teaching on a variety of topics naturally encourages a resident to become an expert in common topics. It leads to a more robust appreciation of previously unrecognized nuances of common topics, broadens a resident's appreciation of related topics and their interconnectedness, and contributes to both clinical and academic mastery (8). In addition, medical students challenge residents to look within themselves, both personally and professionally, by being engaged and asking thought-provoking, ethical, and clinical questions. Self-reflection is fostered when medical students observe residents engaged in clinical care, as well as when a resident guides a medical student through clinical interactions.

Public Speaking

Despite the common fear of public speaking, residents would do well to master this skill in relatively structured environments. Given that physicians often provide frequent consultation and talks to peers and other medical professionals throughout their careers, the experience of public speaking to medical students is, in essence, a "free session" in exposure therapy at worst or a forum for real-world experience in a valuable professional skill at best.

Recursive Impact on the Resident's Specialty

Insofar as residency is characterized by a steep learning curve, residents are well positioned to model a genuine desire to master psychiatry, which has the potential to inspire medical students to consider pursuing a career in psychiatry (6). Evidence in the surgical literature has suggested that resident educators can improve medical students' knowledge base, as assessed by formal testing (18), and even influence medical student decisions regarding specialty selection (19). In a sense, teaching medical students could be viewed as a longitudinal elective in academic psychiatry, which could serve as a foretaste of a potential career in academics. This itself could inspire a future generation of academic psychiatrists.

Improving Psychoeducation

Becoming facile in responding to medical students' questions prepares residents to be able to respond to difficult questions from patients, colleagues, friends, and family. Patients served by psychiatric residents are often very ill, and learning to respond to, perhaps at times, more sophisticated questions may well serve as excellent preparation for future medical professionals.

Altruism and Improving Clinical Care

Consistent with the giving and caring nature of our profession, teaching medical students provides residents with a means of developing and modeling their altruism. As residents, we should invest time and energy in medical students, reflectively and patiently, much in the same way our mentors have done for us. Investing oneself in patient care is powerful. How much more powerful is the impact one can have by investing in those who will invest themselves in thousands of patients throughout their careers? Teaching is a way to have an exponential effect on the care patients receive. This is part of the wisdom and great joy of medical education.

Addressing Concerns

Having discussed several benefits of resident involvement in medical student education, it is pertinent to address several concerns that residents may have regarding teaching. Whereas these concerns are framed from a resident's perspective, many of the concerns can also be appreciated from the perspective of faculty and the medical students being taught.

Time

Given the ever-changing set of responsibilities residents face, time is the most salient barrier preventing residents from teaching medical students. A resident may, however, implement creative approaches that allow for the economical use of time. For example, a resident may teach on a topic that he or she has wanted to investigate more fully or consider the time invested in preparing a formal lecture as a Board review on that topic. Other examples of multipurposed time use may involve preparing for journal clubs, rotation-specific presentations, or the Psychiatry Resident-In-Training/Board examinations.

Emotional Investment

Clinical care in psychiatry requires emotional investment in patients and their

families, treatment teams, and supervisors, not to mention the vicissitudes of maintaining a personal life. Perhaps less recognized is the emotional investment incumbent on teachers. Residents may approach teaching initially in structured, lecture-format didactics in order to carve out time to prepare, rather than having to balance teaching with moment-by-moment service demands. Alternately, residents may approach "bedside teaching" by gradually shaping their own behavior, offering incrementally greater investment in presentations.

Limited Fund of Knowledge and Teaching Skills

A physician's fund of knowledge is constantly expanding—both in facts and, more intangibly, in clinical experience—as such, a resident may consider his or her fund of knowledge insufficient for the teaching of medical students. What residents may lack in a more robust fund of knowledge they can supplement with intellectual and clinical curiosity—cornerstones of academic psychiatry—and share from their experiences of clinical care and systems-level practice. Physicians-in-training ought to receive formal instruction in pedagogy in the same way that school teachers learn to teach. Formal curricula, workshops, supervised experience/role play with attendings, and advanced electives on teaching would equip residents to teach effectively (1–6). In addition, several tools have been developed to evaluate residents' teaching performance and provide meaningful feedback to hone one's teaching aptitude (20).

Variable Incentive

Residents generally assume the de facto role of teacher in clinical settings. While formal teaching is often voluntary, residents who may otherwise prove to be masterful teachers may avoid teaching in the absence of adequate incentives in view of clinical obligations. Fostering an academic environment that emphasizes the great value of teaching and identifying dedicated faculty who support resident involvement in education may serve as critical steps to incentivize teaching. Other steps could involve positive reinforcement (e.g., departmental awards, formal recognition, and priority in call schedule accommodations) or negative reinforcement (e.g., relaxed clinical responsibilities for preparation and delivery of didactics).

Medical Student Perceptions of Psychiatry

Medical students are not immune to the stigma associated with mental illness. Residents would do well to appreciate the far-reaching value of their work in demonstrating to their up-and-coming colleagues the central role mental health plays in overall health and wellbeing. For example, this may include motivational enhancement with regard to perceptions of mental health and illness or tailoring clinical teaching to specific areas of interest for rotating medical students. Residents may discuss topics that psychiatry shares with other specialties, particularly those topics in which rotating medical students have expressed interest (e.g., delirium for those interested in surgery or opioid dependence for those interested in obstetrics and gynecology).

Other Concerns

In view of the performance-based culture within U.S. residency programs today, one can appreciate that concerns of "measuring up" may take many forms. Performance anxiety may either hinder or bolster one's performance, per the Yerkes-Dodson law. One might wonder how many responses—such as, "I don't like teaching" or "I'm not going into academics, so I don't need that"—belie a projective or guised avoidance. We would recommend that residents with such concerns consider the emotion that accompanies these dismissive thoughts. As suggested above, certain requirements and appropriate incentives that emphasize the value of medical student education may facilitate a subtle version of exposure therapy.

Conclusions

In a top-down model of residency education, leaders that model effective teaching and create an atmosphere that actively values, facilitates, and nurtures teaching for the sake of teaching would be expected to have a significant impact on resident involvement. Practicing physicians can often identify standout mentors and role models early in their medical career that led to their chosen specialty. The power of genuine mentorship remains unquestioned. For example, faculty may consider arranging co-teaching opportunities for real-time mentorship.

The present article is addressed primarily toward psychiatric residents as educators but also applies to academic medicine in general. Medical students are often highly grateful to residents for their investment in education. They recognize that residents who take the time to teach are engaged in an act of giving—and that of more than the information but also of oneself. Teaching is a conscious decision that has the power to transform the teacher and learner alike. I encourage residents to consider making this richly rewarding decision and residency training programs to implement formal curricula on teaching residents how to teach.

Dr. Oldham is completing a fellowship in psychosomatic medicine at Yale–New Haven Hospital, New Haven, Conn. He is also a 2013 American Association of Directors of Psychiatric Residency Training/George Ginsberg Fellow.

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Case Report

Moving Beyond the Silos: How a Child Psychiatrist Can Work With a School

Priya Sehgal, M.D., M.A.

The need to integrate education and mental health care is too pressing to ignore. Educational progress is dependent on a child's motivation and ability to learn, which are linked to physical, mental, and emotional health (1). Research has shown that when mental health needs are adequately addressed, the likelihood of school success increases (2). More than 6 million young people in the United States have a mental health disorder associated with significant functional impairment (3). Of those, only about one-fifth receive mental health care, in part due to the national shortage of child psychiatrists (3). When approximately 95% of all children in the United States are enrolled in school, it makes sense to have school-based mental health services and greater integration between child psychiatrists and schools (3).

Given that general psychiatrists care for a large proportion of youths with mental health needs, it is important for general psychiatry trainees to become familiar with school consultation. However, general psychiatry trainees typically have limited experience consulting with schools. General psychiatry training programs are already overburdened with providing a broad range of training opportunities and may be unable to offer additional rotations in child psychiatry.

This purpose of the present article is to introduce general psychiatry residents to the field of psychiatric school consultation. The following case highlights the elements of psychiatric school consultation and depicts possible roles a consulting psychiatrist can assume.

Case

"Tommy" is an 8-year-old third-grade boy who, because of impairments with reciprocal communication and social interactions, was diagnosed with pervasive developmental disorder not otherwise specified. According to DSM-IV, a diagnosis of pervasive developmental disorder not otherwise specified is associated with autism spectrum disorders but does not meet specific autistic diagnostic criteria due to a later age at onset and atypical or subthreshold symptoms.

Tommy attends public school and spends the majority of the school day in an autism spectrum disorder classroom, as required by his individualized education plan, a federally mandated educational plan designed for a child with a learning disability or emotional problems that hinder learning.

The school consulted a child psychiatrist to assess the accuracy of the child's diagnosis and to address his increasingly aggressive behavior and frequent tantrums. The school psychologist felt that his behavior was consistent with mood and anxiety disorders rather than pervasive developmental disorder not otherwise specified. His teachers also wanted to identify the most effective classroom accommodations for his mental health needs.

In a school conference room, the consulting team met with the child, his academic support team, and his mother. The academic support team, which is mandated by the individualized education plan, included his current third-grade teacher, "Ms. K" The team also included his former first- and second-grade teachers, his occupational therapist, his behavior analyst (a staff member who helps identify patterns in behavior and interventions), and his speech therapist.

The child rarely made eye contact with the interviewers. While playing with a green train, he appeared sad. He spoke softly and would take a long time answering questions. His thought content was appropriate, and as he felt more comfortable, he spoke in complete sentences.

The consulting team focused on the antecedents for his disruptive and positive behaviors. Ms. K agreed to have a consulting team member observe her classroom and modify her behavioral plan, a documented approach to manage a child's classroom behavior. Tommy had difficulty with emotion recognition and regulation and experienced anxiety when transitioning to unexpected social interactions and classroom activities or when moving to different classrooms. The consultants recommended the use of an "emotional thermometer," which displayed images of the child in various emotional states. This visual helped him to recognize and identify his mood. The consulting team also recommended the use of a comfort box to reduce anxiety. The comfort box contained objects such as scented lotion and pictures of people the child cared about, which soothed him and was used when he needed to decrease anxiety.

In order to ensure continuity of service, the consulting team facilitated two more meetings with school personnel to reassess and evaluate the child's progress.

Discussion

A consulting child psychiatrist brings knowledge regarding child development, systems-based practice, diagnosis and treatment of mental disorders, and an appreciation of psychodynamic forces within the group, family, and individual (4). This knowledge and skill set can be applied to students with persistent disruptive behavior in school settings.

Within schools, consulting child psychiatrists can assume various roles, including that of teacher, facilitator of referrals for outpatient mental health services, clini-

cal evaluator and provider, and program developer and care coordinator. Depending on the school, a consulting child psychiatrist may also provide direct clinical evaluation and treatment within a school-based health clinic (2).

A consulting child psychiatrist can provide in-service professional development for teachers and school mental health staff regarding the presentation of mental health disorders and the utilization of referral systems to a school-based or community-affiliated child psychiatrist (4). As seen in the above case, teachers may request the consultant to provide assistance with development and implementation of lesson and behavioral plans. Child psychiatrists can apply the knowledge of child development, pathology, and treatment when developing effective classroom interventions for a student.

In this particular case, the consulting team clinically evaluated the student for diagnostic clarification but did not provide direct pharmacological treatment or psychotherapy. However, the team assisted in treatment planning and behavioral planning.

School-based health clinics are becoming more prevalent. In 2008, there were nearly 1,909 school-based linked and mobile clinics (5). Clinical services are increasingly provided at school-based health clinics, and consulting child psychiatrists can help craft, supervise, and execute treatment plans (6). Child psychiatrists practicing within a school-based health clinic can provide direct psychiatric treatment.

Consulting child psychiatrists can also serve as leaders in program development and in care coordination. For example, they might design a school-wide mental health prevention program, develop an early identification and referral system, or manage crisis situations in schools (3). The consulting psychiatric team in the above case facilitated efforts to coordinate care between multiple service providers for the student.

With the passage of the Affordable Care Act, medical care needs to become more integrated among hospitals, specialists, and primary care providers to reduce costs and improve patient outcomes. Because many youths in the United States lack accessible mental health services, schools should be part of this plan, and consulting child psychiatrists can play a significant role.

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For an overview of school mental health programs that are listed in the Substance Abuse and Mental Health Services Administration's National Registry of Evidence-Based Programs and Practices and to learn more about the types of programs that schools are using and need, see the brief report by George et al. *in the May 2013 issue of* Psychiatric Services.

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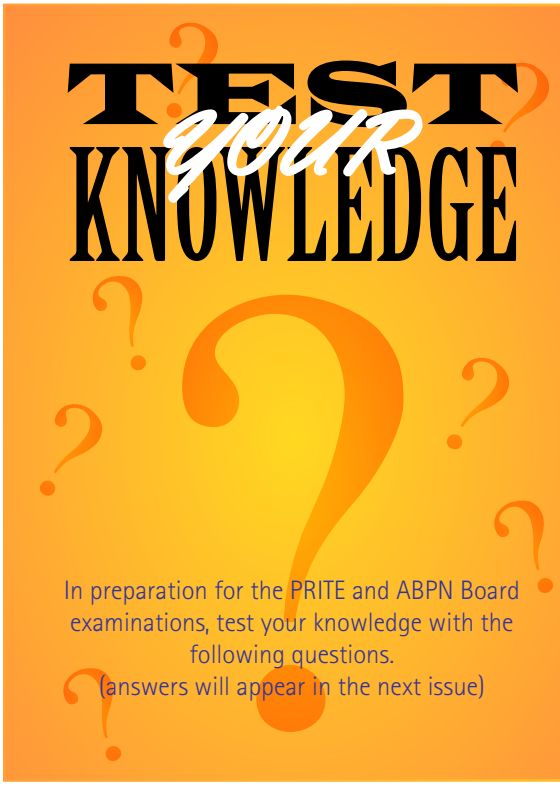

In preparation for the PRITE and ABPN Board examinations, test your knowledge with the following questions (answers will appear in the next issue). This month's questions are courtesy of David Hsu, M.D., a fellow in geriatric psychiatry at Massachusetts General Hospital/McLean/Harvard, Boston, and Deputy Editor of the Residents Journal.

Question 1.
Which of the following is true of substance use disorders?

A. Users of substances have lower rates of suicide.
B. 35%–60% of users meet criteria for antisocial personality disorder.
C. In classic theory, substance users are best able to defend against anxious impulses.
D. Women use drugs more than men.

Question 2.
Which of the following constitute the "four Ds" in medical malpractice?

A. Duty, deviation, damage, and direct causation
B. Deviance, distress, dysfunction, and danger
C. Decline, delirium, depression, and dementia
D. Diarrhea, dermatitis, dementia, and death

ANSWERS TO JULY QUESTIONS

Question #1.

Answer: D. Rapprochement

Margaret Mahler was an important object-relations psychoanalyst. The normal sequence of her separation-individuation paradigm for the young child is as follows: normal autism (A), symbiosis (C), differentiation (B), practicing, rapprochement (D), and object constancy (E). Rapprochement is an important stage in the toddler's development in that he or she is finally becoming aware of the conflicting forces of independence and closeness.

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1. Sadock BJ, Sadock VA: Kaplan and Sadock's Synopsis of Psychiatry, 10th ed. Philadelphia, Lippincott Williams and Wilkins, p 29

Question #2.

Answer: A. Maintenance of IQ until age 80

It is important to know that cognitive impairment is not a normal part of aging, and thus psychiatrists should be able to counsel patients who worry about these issues. Recognition of biological changes in the aging patient will help inform psychiatrists on appropriate medication therapy, as well as assessment of other etiologies for patients' symptoms. In normal aging, there is no increased kidney function, sensory enhancement, or increased testosterone. Without a pathological condition, there should also be no significant reduction of cardiac output.

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We are currently seeking residents who are interested in submitting Board-style questions to appear in the Test Your Knowledge feature. Selected residents will receive acknowledgment in the issue in which their questions are featured.
Submissions should include the following:
1. Two to three Board review-style questions with four to five answer choices.
2. Answers should be complete and include detailed explanations with references from pertinent peer-reviewed journals, textbooks, or reference manuals.
***Please direct all inquiries and submissions to Dr. Hsu: davidhsu222@gmail.com.**

Author Information for *The Residents' Journal* Submissions

The Residents' Journal accepts manuscripts authored by medical students, resident physicians, and fellows; manuscripts authored by members of faculty cannot be accepted. To submit a manuscript, please visit http://mc.manuscriptcentral.com/appi-ajp, and select "Residents" in the manuscript type field.

1. **Commentary:** Generally includes descriptions of recent events, opinion pieces, or narratives. Limited to 500 words and five references.
2. **Treatment in Psychiatry:** This article type begins with a brief, common clinical vignette and involves a description of the evaluation and management of a clinical scenario that house officers frequently encounter. This article type should also include 2-4 multiple choice questions based on the article's content. Limited to 1,500 words, 15 references, and one figure.
3. **Clinical Case Conference:** A presentation and discussion of an unusual clinical event. Limited to 1,250 words, 10 references, and one figure.
4. **Original Research:** Reports of novel observations and research. Limited to 1,250 words, 10 references, and two figures.
5. **Review Article:** A clinically relevant review focused on educating the resident physician. Limited to 1,500 words, 20 references, and one figure.
6. **Letters to the Editor:** Limited to 250 words (including 3 references) and three authors. Comments on articles published in *The Residents' Journal* will be considered for publication if received within 1 month of publication of the original article.
7. **Book Review:** Limited to 500 words and 3 references.

Abstracts: Articles should not include an abstract.

Upcoming Themes

Please note that we will consider articles outside of the theme.

Global Psychiatry

If you have a submission related to this theme, contact the Section Editor, Misty Richards, M.D., M.S. (mcrichards@mednet.ucla.edu).

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If you have a submission related to this theme, contact the Section Editor, Justine Wittenauer (jwittenauer@challiance.org).

Mental Health Disparities

If you have a submission related to this theme, contact the Section Editor, Ijeoma Chukwu, M.D. (ichukwu@uci.edu).