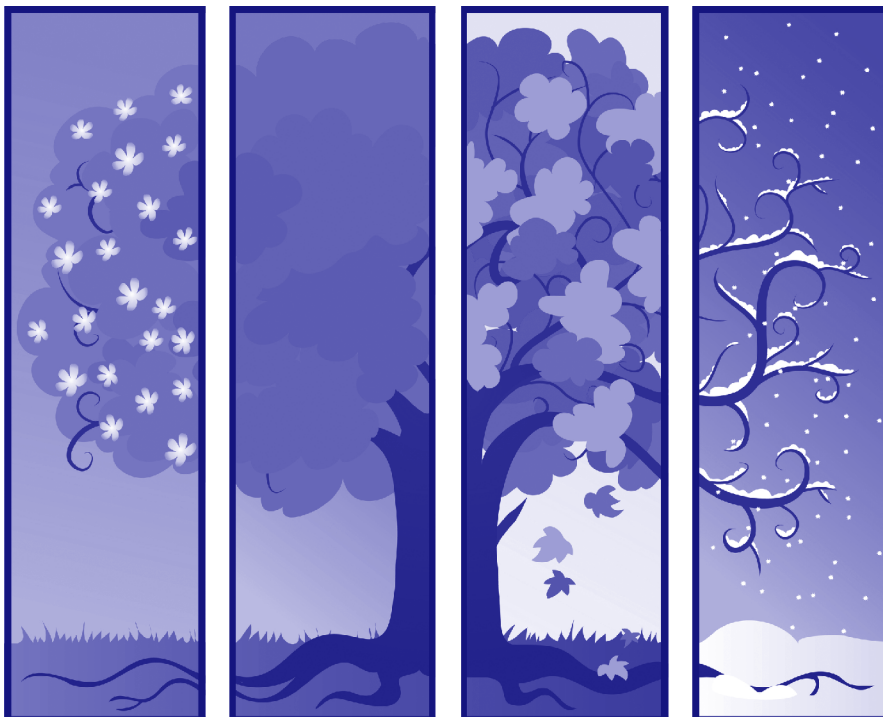


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With Change Comes Opportunity

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

As the New Year beckons, many uncertainties face our profession. We have helped win many victories for our patients, including taking another step toward real mental health parity. As the Affordable Care Act rolls out, more than 30 million Americans will find themselves able to benefit from health insurance. The demand for mental health services has never been so high and so crucial. Psychiatry will play an increasingly important role in providing integrated care in both primary care and specialist settings. Resident voices must also be heard within the APA. I encourage every resident to cast their vote in the upcoming APA election (starting January 2, 2014).

Despite these opportunities, many hurdles continue to hinder the delivery of mental health care to our patients: stigma, funding cuts to graduate medical education, and reduced research support.

The New Year offers us hope and, without doubt, challenges. We owe our mentors, our patients, and our specialty the best that we can muster. *Carpe Diem.*

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Changes to the Field of Psychiatry to Secure a Brighter Future

Varinder S. Parmar, M.D.

To forecast what a discipline will look like in the future is a difficult task but an important one. Indeed, much research and discussion revolve around a pessimistic concept of a crisis in psychiatry and psychiatrists themselves becoming an endangered species. A key challenge is the stigma associated with mental illness, which affects the general population and medical students. An additional challenge is coping with changing roles and responsibilities of psychiatrists as mental health treatment is diffused among a range of health professionals. Another key challenge is attempting to work within the realm of general medicine, chiefly reliant on a biomedical model, much to the exclusion of social and psychological knowledge that is central to psychiatry.

Although the field of psychiatry is facing many challenges, it has a bright and necessary future if we are able to adapt and implement new ways of thinking, working, and providing care.

The Stigma of Mental Illness

Among patients who do not comply with a referral to a psychiatrist, the most frequent reason is a fear of mental illness stigma, rather than negative expectations about treatment and its quality (1). A key instigator of negative public opinion is the media. In one media commentary, psychiatry was portrayed as a discipline without true scholarship, scientific methods, or effective treatment techniques (2). The Hollywood mythology of psychiatry does not highlight successful treatment based on medication and gradual progress but rather a single cathartic session, often with images of punitive electroshocks, forced confinement, or psychoanalytical treatment.

Changing the depiction of psychiatry in the media is an important prerequisite for changing public opinion, particularly by promoting realistic expectations about treatment modalities and their success

(2). Mental health professionals and patients should be more present in media to provide an accurate portrayal of psychiatric treatment. National psychiatric societies should consider different ways of providing current information and developing working relationships with media representatives, for example, through the use of workshops and regular press releases. Indeed, media training for mental health professionals may improve their credibility and the acceptability of their message (3).

Certainly, the proportion of medical students indicating that they would choose psychiatry as a career is often low (4). Public perceptions of mental illness have a negative impact on medical students, deterring them from choosing a career in psychiatry (5). Beyond this, perceived low prestige and lack of respect among other medical disciplines (5), as well as financial aspects (6), such as low pay and lack of government funding, also paint a bleak picture of psychiatry. Medical students also perceive psychiatry as lacking an authoritative scientific foundation, partly because classifications of mental disorders in DSM and ICD are not often validated by biological criteria (7).

Changes to medical school curriculum and teaching methods (acquisition of knowledge, awareness of the therapeutic potential of psychiatric intervention, and direct patient contact) will improve attitudes and enhance psychiatry's attractiveness as a career choice (8). Shifting of teaching methods, such as allowing contact with recovering patients with mental illness, contact with successful community care, use of exchange programs, and further integration of psychiatry with the neurosciences are all integral. Additionally, firmly addressing stigma in psychiatric education and giving medical students an accurate idea of psychiatry is paramount in presenting psychiatry as a reputable career choice.

A Multidisciplinary Team Approach

Often looked upon as psychiatry's loss of "jurisdictional control," another challenge facing the field is the shifting of psychiatrists' roles as a result of various professionals and nonpsychiatrist physicians now entering a domain that was traditionally that of psychiatrists (9). It is common now to see mental health treatment being diffused among multidisciplinary teams that consist of professionals such as clinical psychologists, care givers, dietetics, and pharmacists, as well as primary care physicians, to name a few.

Much discussion centers on primary care physicians who now care for a greater volume of anxiety disorders, mood disorders, and other common conditions than do psychiatrists, and, like psychiatrists, prescribe a range of psychotropic agents. More than one-half of psychiatrists' patients carry diagnoses that family physicians also treat (9). Moreover, the area of psychopharmacologic therapy, traditionally the domain of psychiatrists, is contentious as psychologists seek prescriptive privileges, particularly in the United States (i.e., in New Mexico, Nebraska, and Texas). Even without state sanction, the authority to prescribe psychotropic medications has existed among a group of psychologists who are also nurse practitioners and who prescribe under their nursing license. It also exists de facto for many psychologists through their associations with family physicians (9).

Multidisciplinary and multiagency work, although presented as a challenge, actually presents numerous opportunities. A report from the National Institute for Mental Health in England (10) highlights the evolution of multidisciplinary teamwork. The report emphasizes the need to clearly define the responsibilities of each member within a team so that professionals and stakeholders may identify their "unique" contributions,

what aspects of their role can be passed on to others (and to whom), and what additional work they may undertake given more capacity. This means a reduced and more focused role for senior professionals, shedding repetitive activities or doing them with increasing competence. As the report details, through a multidisciplinary approach wherein numerous professionals have particular expertise in specific areas, it is more likely that all bio-psychosocial-cultural components of intervention and care are delivered.

A Neuropsychiatric Approach

A key challenge psychiatry faces is in its organizing framework, the bio-psychosocial-cultural model (11), which operates on the understanding that a system has physical elements, both subpersonal (a nervous system) and suprapersonal (individuals exist in a complex psychosocial context). Although mental health professionals favor this inclusive view of mental illness, which is both scientific and humanistic, it is the heart of the criticism asserting that psychiatry has little scientific foundation, a key feature behind the stigmatization of psychiatry (2). Perhaps it is important to consider a school of thought that meshes with psychiatry's philosophical foundation and adds a more "scientific" spin—that being neuropsychiatry.

Neither psychiatry nor neurology can escape a fundamental flaw that lies at both their foundations: the arbitrary cleavage of brain-based disorders into two disparate medical specialties (12). They emphasize that neuropsychiatry does not simply dilute psychiatry; rather, it prioritizes the importance of a bio-psychosocial framework, including psychodynamic, interpersonal, societal, and spiritual factors, in the care of patients. Studies have highlighted the bond between psychiatry and neurology, with one study finding a high number of psychiatric disorders, such as depression, alcohol-related disorders, and various personality disorders, in patients who experienced a traumatic brain injury (13).

In recent years, The U.S. National Institute of Mental Health (NIMH) has funded areas of studies in epigenetics. Researchers

are working to characterize how epigenetic events affect neurodevelopmental processes that may cause mental illnesses, and they are investigating how to identify epigenome-wide marks that are linked to environmental influences and vulnerability to mental disorders (14). The hope is that this research will yield better understanding of how epigenetic mechanisms turn early experiences into long-term neural changes and how they may affect risk and resilience in relation to mental disorders (15). Such research may eventually lead to the development of in vivo imaging or analysis of epigenetic changes in the brain. NIMH also funds researchers who work to examine functional neuroimaging to map brain activity and neurochemical mechanisms associated with normal higher-cognitive function, dysfunction in neuropsychiatric illnesses, illnesses with genetic sources of cognitive dysfunction, and other conditions affecting cognition, such as normal aging. Current research in neuropsychiatry is truly innovative, and, as such, important to integrate into psychiatric practice.

Conclusions

Although our field faces challenges, we must not overlook the progress in psychiatry over the past few decades. The demand for psychiatric services is multiplying, and thus to remain relevant and provide the best services possible, psychiatrists may be seen changing or adapting their roles and responsibilities in order to face challenges and provide care to an expanding number of patients. While it is important to increase open-mindedness, it is paramount that we defend our integrative work between mind and brain, highlighting the fundamental contributions psychiatry has made to medicine. With willingness to adapt on the part of psychiatrists, the field of psychiatry, with its rich intellectual milieu, has a necessary and bright future.

Dr. Parmar is a fifth-year resident in the Department of Psychiatry at Queen's University, Kingston, Ontario, Canada.

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Time for Change

Joshua R. Ackerman, M.D.

I would like to propose a shift in our collective thinking about our patients. I propose that we begin to refer to mental illness as psychiatric disease. As a community of mental health professionals, we have outgrown this dated moniker.

As an example, the term “mentally retarded” was used to describe developmentally disabled adults. To hear the term mentally retarded today conjures up derogatory imagery and incorrectly encapsulates these patients within the confines of misperception and misunderstanding. The term mental illness keeps our patients locked in the past, a past with frontal lobotomies and incorrect eti-

We have the power to influence how psychiatric disease is perceived and understood by others.

ological theories of psychiatric disease, as well as large state hospitals for the insane, another term that has gratefully been retired.

Our understanding of the etiology, pathology, and treatment of psychiatric disease has grown exponentially. As psychiatric professionals, we represent the most up-to-date and accurate resource of psychiatric information for all other health professionals and laymen. In short, we have the power to influence how psychiatric disease is perceived and understood by others. With this in mind, let us jointly advance our cause and complete the move of our profession into the 21st century.

Dr. Ackerman is a third-year psychiatry resident at New York Medical College, Metropolitan Hospital Center, New York.

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Natural Disasters and Posttraumatic Stress Disorder: A Global Perspective

Holly S. Peek, M.D., M.P.H.

Posttraumatic stress disorder (PTSD) is the most prevalent psychiatric disorder after a disaster (1). Most PTSD research to date is based on DSM-IV, with symptom clusters including re-experiencing the trauma, avoidance, numbing, and hyperarousal.

Some argue that PTSD is a Western syndrome and not generalizable to non-Western countries. Culturally bound syndromes as reactions to stress are common, making international studies of PTSD complicated. In a study of the cross-cultural validity of DSM-IV PTSD criteria, although all symptom clusters were present, the saliency of the clusters varied across cultural groups. For example, avoidance and numbing symptoms were less common cross-culturally, while hyperarousal and re-experiencing symptoms were more common. Somatic symptoms as a reaction to trauma also cluster in specific cultures (2).

Given that many developing countries are commonly exposed to war, disease, violence, and terrorism, the prevalence of traumatic stress disorders in these populations is of concern. Natural disasters in particular can cause destruction of property, displacement, injuries, disease, and death. These types of disasters can be particularly traumatic for people in developing countries who often have poor health resources, weak building infrastructure, and financial instability and lack community support even prior to the disaster. In addition to those whose lives are directly threatened by a natural disaster, first responders who witness the traumatic aftermath are also adversely affected.

The purpose of the present study is to provide discussion of PTSD as a result of natural disasters globally. The epidemiology of disease and effective methods of prevention and treatment at a public health level, taking cultural considerations into account, are examined.

Epidemiology

Natural disasters typically result in high personal exposure to trauma, with many individuals sustaining severe injuries or witnessing death. Because of the varying levels of traumatic exposure among disaster victims, referred to as the exposure effect, there are wide ranges of PTSD prevalence in many postnatural disaster epidemiological studies (1). Prevalence ranges from 3.7% to 60% have been reported, with most values in the lower half of this range. Interestingly, there are higher prevalence rates in areas harder hit by a disaster (i.e., exposure effect), as well as among specific groups (3, 4).

Common trends in the prevalence and predictors of PTSD after a natural disaster are seen among various international studies. Over one million people worldwide have lost their lives in the 108 major earthquakes of the 20th century. Ninety-one major earthquakes have occurred in developing countries, accounting for 83% of deaths as a result of these disasters (5). Postdisaster studies have shown prevalence rates of 43% in the 1999 Turkey earthquake, of 47.3% and 10.4% in heavily and moderately damaged areas, respectively, in the 2008 Wenchuan, China earthquake, and of 50% in the 1988 Armenian earthquake (5, 6). Predictors of PTSD in these studies included closeness to the epicenter; female gender; death of a family member; intense fear during the earthquake, such as being trapped under rubble; past psychiatric illness; participating in rescue work; and psychosocial issues, such as low education, no income, disruption of social networks, degree of disruption of life, and resource loss (5, 6).

Similar predicting factors for PTSD are seen across multiple studies after various types of natural disasters (3). Many of these factors revolve around an extreme loss of control, perhaps contributing to more severe stress reactions. Women are consistently found to be more susceptible

to PTSD than men, perhaps for varying reasons. First, women may be more likely than men to self-disclose and seek help. Second, women in traditional paternalistic cultures may perceive a disaster as more distressing because of the threat of loss of their providers. Women in these cultures also have a greater emotional attachment and responsibility to their homes and children, creating a more intense sense of threat during and after the disaster. Finally, women are more vulnerable to developing depression, and those with depression are at greater risk for PTSD, making comorbidity a critical factor (7).

The extent of community destruction and emergence of a “disaster landscape” complicates the recovery of individuals. Referred to as “collective trauma,” community demise has a tremendous impact on the psychological well-being of individuals (8). In Indonesian communities after the 2004 tsunami, community destruction increased PTSD symptoms, despite controls for individual levels of exposure and loss. The effects of individual traumas were heightened in the months after the tsunami, while the effects of community destruction were slower to develop and lasted longer. Perhaps this reflects people’s gradual realization that community life had been permanently disrupted with an unknown course. Additionally, community level poverty and political insecurity predisaster are important predictors of the development of PTSD postdisaster (8). This may also explain why PTSD morbidity postdisaster among children and adult survivors in developing countries is greater than that of the United States (9).

Rescue workers are also vulnerable to PTSD after natural disasters. This population experiences high levels of stress, including long work hours and working with disrupted communities and evacuee populations, and they are often separated from loved ones at home. Studies of relief

workers after earthquakes have estimated the prevalence of PTSD to be between 20% and 25%, and in some studies, the estimated prevalence is as high as 43% (10). Associated factors for the development of PTSD include being a volunteer worker (compared with a professional), high levels of exposure to dead bodies and victims' families, severity of the disaster trauma, work-related stressors, low social support, female gender, and the use of avoidant coping strategies (10, 11).

Psychiatric Interventions Using a Public Health Approach

When international disasters occur, news and social media are quick to broadcast information widely. Relief agencies follow this pace, responding swiftly with food, clothing, shelter, equipment, and funds. However, psychosocial needs, which are sometimes more chronic and not as apparent, are often overlooked.

The lack of mental health professionals specially trained to manage psychosocial needs after disasters is a problem. The magnitude of this issue was made apparent in Aceh, Indonesia after the 2004 tsunami, when thousands of people with depression, anxiety, and PTSD were left without any resources for psychiatric treatment. Prior to the disaster, there was only one psychiatric hospital staffed with one psychiatrist, five psychologists, and several nurses and general practitioners who had no training in mental health. After the tsunami, when mental health needs could not be met, the Indonesian government created new policies for the management of postdisaster mental health and psychosocial problems. These included community-based mental health training courses to educate general practitioners and nurses on early detection and management of mental health problems, including basic psychiatric drug therapy and counseling. When a patient required more specialist care, they were then referred to a hospital for treatment by a psychiatrist or psychologist (12). Many other developing countries have created detailed psychosocial interventions post-disaster, although these plans vary greatly in detail and quality (13). In fact, evidence

TABLE 1. Principles of Psychological First Aid^a

Safety: Develop a physically safe environment; identify safe areas and behaviors.
Efficacy (individual and community): Maximize individuals' ability to care for self, family, and others through measures, clear policies, and guidance (e.g., evacuation or shelter-in-place procedures; mechanisms for obtaining food, shelter, vaccination, and medical care).
Calmness: Teach and encourage relaxation and calming skills and maintenance of natural body rhythms (e.g., nutrition, sleep, rest, and exercise).
Connectedness: Maximize and facilitate connectedness to family and other social supports to the extent possible.
Foster hope and optimism without minimizing ongoing risks.

^a For further details pertaining to psychological first aid, see Benedek et al. (17).

suggests that many communities often fail to receive the care needed and consequently suffer from increased mental health morbidity and rates of suicide (14).

Perhaps the most useful approach mental health professionals can take is to understand appropriate and effective public health interventions. Psychiatric interventions utilizing a public health approach after a natural disaster help to restore communities and reduce post-disaster mental health burdens. For example, capacity building is an important concept in international public health relief efforts because the difficulty of managing mental health services after a disaster is often compounded by a shortage of educated responders (14). Embedding mental health programs in pre-existing programs, such as primary care offices, school-based activities, or work programs, has been shown to be another effective public health model. Using this method, relief workers can help establish local supports by organizing culturally sensitive training programs for local people (15).

Psychological first aid is a strategy that has been recommended by the World Health Organization (WHO) for relief workers to provide culturally sensitive psychosocial support after a disaster. Additionally, WHO offers training for relief workers so that these strategies can be appropriately implemented (16). The primary principle of psychological first aid, as summarized in Table 1, includes establishing a sense of safety by creating a protected environment to prevent retraumatization (14, 17).

Despite the development of specific psychosocial interventions, the value of

providing the most basic needs, such as safe housing and food, cannot be underestimated (15). Without providing these most basic needs that are often lost in a disaster, it is difficult to meet more complex needs of the people, such as mental health.

Cultural Considerations

One of the most controversial areas for international disaster mental health is when professionals from outside cultures attempt to identify and treat victims according to Western psychiatric diagnosis and practices. There have been several efforts to bring western mental health paradigms to international settings over the years with limited success (15).

It is imperative that international mental health relief workers take into account local history, politics, religion, and indigenous sources of support and healing when aiding different cultures after a natural disaster. Mental health professionals should open dialogue with local leaders in order to understand what has been lost and disrupted from their point of view and in order to invite critique of interventions. Ultimately, greater success could be earned through empowering local community leaders by working within their paradigm to help the community heal in the context of its own values (15).

Dr. Peek is a second-year resident in the Department of Psychiatry and Behavioral Sciences, Tulane University School of Medicine, New Orleans.

For further information about mental health support after a natural disaster, see the American Journal of Psychiatry Images in Psychiatry article by [Shigemura et al.](#), pub-

lished in the August 2012 issue, on mental health assistance provided to employees of the Fukushima Daiichi nuclear power plant who suffered workplace trauma following reactor explosions, nuclear meltdowns, and radioactive leaks after a large-magnitude earthquake and subsequent tsunamis.

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The screenshot shows the Psychiatric News website interface. At the top, there's a navigation bar with links like 'Home', 'About', 'Contact Us', 'Site Map', and 'RSS'. Below that, the main content area features the article 'Integrated Care: What Does It Mean for You?' with a sub-headline 'Integrated care is everywhere—in theory, at least, and increasingly in practice. APA has established a number of initiatives in this area.' The article text discusses the concept of integrated care, its benefits, and mentions APA's initiatives in this area, including the Work Group on Integrated Care of the Council on Healthcare Systems and Financing, the Board of Trustees Health Care Reform Strategic Action Work Group, and the Network on Mental Health Policy Research. There are also social media sharing options (Facebook, Twitter, LinkedIn, Email) and a 'Related Articles' section on the right side of the page.

Schizophrenia in Postearthquake Haiti

Christopher Rodgman, M.D.
Alison Smith, B.S.
John Roberts, M.D., M.P.H.

As a psychiatry intern, I volunteered with a medical relief team in rural Haiti just 2 months after the devastating 7.0-magnitude earthquake in 2010. The Haitian countryside was filled with refugees in dire need of food, water, and medical care in an already resource-deprived environment. We present the case of a refugee with schizophrenia.

Case

When the earthquake struck, “Mr. W” had been receiving care in the only inpatient public psychiatry unit in the country. The roof of the hospital came down, killing hundreds of patients. However, Mr. W pulled himself from the rubble and managed to find transportation through the mountains, 70 miles away to his home village and family. Without appropriate psychiatric care, he quickly decompensated. One night, in a fit of paranoia, he murdered a family guest with a machete, the ultimate cultural violation of guest/host custom. He was deemed too dangerous to wander freely on his own and was put in bicycle chains.

At the request of his family, local leaders took me to Mr. W’s house along with our supervising physician, Dr. Sue Rodgman, to provide assistance. We were led into a darkened back room, lit only by candles and voodoo shrines, where Mr. W was tied on the cold, dirt floor. Through interpreters, I let him know that we were there to help him and conducted a psychiatric interview. He was disheveled, bound as above, and wore malodorous, feces-covered clothing. His affect was labile and noncooperative. The translators stated that his speech was nonsensical, the process loose. It soon became clear that he was responding to internal stimuli and was delusional and paranoid. Per his family, as a young man he had been very good in school and learned English,

which is unusual for Haitians from the countryside. When he was an adolescent, he owned his own business in Port-au-Prince, the capital city of Haiti, and had a girlfriend. He then demonstrated unusual behavior, withdrew from both public and private life, and was unable to work (since age 18). His relationships quickly deteriorated, and he wandered throughout Port-au-Prince when he was not admitted to the inpatient psychiatric facility.

Our medical team desired to provide assistance to Mr. W’s family. However, there was no available psychiatric care, and the only locally available medication to treat psychiatric illnesses was haloperidol. The family also did not have access to primary care services. We decided to treat Mr. W with olanzapine, which functions as a mood stabilizer without required blood level checks. His presentation, including grandiosity, sleeplessness, agitation, racing thoughts, and rapid speech, indicated a schizoaffective presentation. Physicians committed to follow up with him every 3 months, and local leaders reported status updates in the meanwhile. His family agreed to our treatment plan and proved to be a strong support structure. They administered medications and monitored his status. Within a month, he was much improved, showering, shaving, and working; he even had a new girlfriend. When I saw him again, he was like a new man. Speaking to me in English, he told me that meeting me was the best thing that had ever happened to him.

Discussion

I personally struggled with the nature of what we were doing. Was the Haitian culture prepared for what we were offering? Did we tread into spiritual matters, and although providing effective treatment, were we inappropriately “westernizing” the Haitians’ worldview? If Mr. W ran

out of medications and we were not there, what would he do?

Amazingly, on subsequent medical trips, many people with similar symptoms came forward. Families who had hidden their mentally ill loved ones sought our help. We visited more than 20 families that had come to the village leader asking for help. We did what we could, attempting to appropriately diagnose and treat severe psychiatric illnesses. To date, most patients are still doing well and leading functional lives. Psychiatric illnesses remain a frequent complaint to the medical team, which visits the same community in Haiti every 3 months.

Psychiatric Illnesses in Haiti

According to the World Health Organization, there is no reliable prevalence data of schizophrenia in Haiti; however, reports show that up to 50% of people seen in a Haitian psychiatric hospital have schizophrenia (1). Before the 2010 earthquake, Haiti had two psychiatric hospitals with 15 psychiatrists in the entire country. Families in Haiti have traditionally borne the burden of caring for the mentally ill, providing financial support for hospitalizations, as well as nursing and food. Following the earthquake, the influx of international aid has changed the dynamic of health care in Haiti.

Culturally, the diagnosis of schizophrenia in Haiti is difficult to elucidate. Haitians recognize psychotic episodes and label these individuals as “fou,” which means “crazy” in Haitian Creole. These individuals are viewed as permanently dysfunctional of both cognitive ability and judgment. This may be a great loss for their families, especially if the person had a bright educational future or promising career, as well as long periods of remission (2).

In Haiti, as it is in many other cultures, it is essential to distinguish spiritual practices from psychiatric problems. Spiritual experience should not be interpreted as delusional or hallucinations (3). As Azaunce states (4), distinguishing a negative possession (best treated by spiritual leaders) from that of possession experience associated with schizophrenia is difficult. Regarding the latter, it can be associated with a wider range of essentially negative symptoms. One study compared explanatory models of schizophrenia between four culturally different populations: African-Caribbean individuals, West Africans, Bangladeshis, and Whites. Whites cited biological causes more frequently, whereas non-White groups cited supernatural causes more often. Non-Whites were more likely to have social or supernatural explanatory models. However, treatment compliance was not evaluated using this type of model (5). Different stigmas are attached to different types of psychotic and religious states (6).

Conclusions

Several years after commencing treatment, the patient in our case disappeared mysteriously one day. Ultimately, I learned that he was killed while breaking into a car in Port-au-Prince. His family sent me their appreciation, grateful that we

could help him for several years. At the end of the day, I am kept awake at night by the idea that by treating him, I may have done more harm than good, merely delaying the inevitable. I feel that this is a constant struggle for a young psychiatrist. Mr. W will always remain a major figure in my life, and I wish him the peace in death I was unable to give him in life.

Dr. Rodgman is a South Central MIRECC (Mental Illness Research and Education Clinical Center) Advanced Fellow in Mental Illness Research and Treatment with Baylor College of Medicine at the Michael E. DeBakey Veterans Affairs Medical Center in Houston, with work and research funded by the Department of Veterans Affairs, and at the time this article was submitted for publication, he was Chief Resident in the Department of Psychiatry and Behavioral Sciences, Tulane University School of Medicine, New Orleans. Ms. Smith is an M.D./Ph.D. candidate at Tulane University School of Medicine. Dr. Roberts is a forensic psychiatry fellow, and at the time this article was submitted for publication, he was a resident in the Department of Psychiatry and Behavioral Sciences, Tulane University School of Medicine.

For further information about the use of health care services before and after a natural disaster among survivors, see the recently published Psychiatric Services article by

Rosendal et al. To learn more about factors that prompt people in Haiti to seek treatment and the kind of treatment received, see the article by Wagenaar et al., published in the April 2013 issue.

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Cool or Cold? Freon Abuse

Emaya Anbalagan, M.D.
Anupama Ramalingam, M.D.
Stephen Tourjee, M.D.

Freon is the trademark name of a group of hydrochlorofluorocarbons first manufactured by DuPont industries in the 1920s. They were invented as safer alternatives to the refrigerator coolants in use at that time and were marketed as being odorless, colorless, noncorrosive, nonflammable, and nontoxic. After ozone depletion was discovered to be caused by these compounds in the 1970s, the Montreal Protocol was implemented, and their production is being phased out (1). Although they are being replaced with less environmentally harmful hydrocarbons in refrigerant systems, the name Freon is still widely used to refer to these coolants.

There have been multiple media reports of deaths due to accidental and intentional coolant exposure. However, there is very little awareness among physicians, including psychiatrists, regarding air conditioner coolant abuse in spite of its prevalence going back to the early 20th century. Exposure to coolants can be accidental or through intentional abuse. Accidental exposures result from refrigerant leaks, spills, and industrial accidents. Freon gas abusers typically obtain it from air conditioning units that are present outside buildings. A small instrument, like a key or a fork, is used to depress the valve and release the gas, which is either inhaled directly or collected in a bag and “bagged” later (2). Inhalational Freon abuse is associated with a myriad of adverse effects.

We present a case of a patient who presented with cold injuries to the face after first-time recreational Freon abuse.

Case

“Mr. D” is a 33-year-old Caucasian man with a psychiatric diagnosis of schizoaffective disorder, bipolar type, and extensive substance use, including methamphetamines, crack cocaine, and “everything else.” His psychiatric history

included unusual behavior, depression, auditory hallucinations, and multiple hospitalizations for suicidal attempts. He had entered many drug rehabilitation treatment programs in the past, and at the time of admission, he admitted to ongoing cannabis use and occasional alcohol use but denied any other illicit substance use. He was currently receiving citalopram (20 mg daily), clonazepam (0.5 mg b.i.d.), valproate (250 mg every morning and 500 mg at bedtime), and risperidone (3 mg at bedtime) and had been stable, from a psychiatric standpoint, over the past year. He lived with his girlfriend, and he worked at a heating and cooling company.

Mr. D presented to the emergency department after his first time “huffing” Freon from an air conditioning unit in an attempt to “get high.” He had abused nitrous oxide in the past and felt that he could achieve a similar drug “high” with the coolant. After inhaling the gas with his mouth over the opening of the valve, he passed out and woke up sometime later, with the gas still freely flowing. He was able to walk back home but within the hour developed increasing swelling and numbness of the lips, mouth, and cheeks, which brought him to the emergency department. On examination, there was significant swelling to both the upper and lower lips and cheeks and desquamation of the mid-lower lip and bleeding of the upper gums. There was no pharyngeal or tongue swelling. The only significant laboratory finding was a leukocytosis value of 18.7. On psychiatric evaluation, there was no evidence of psychosis or mood symptoms.

The patient was evaluated by laryngoscopy, and no signs of respiratory compromise were found. He did wake up choking on his secretions that night but showed improvement with intravenous methylprednisolone, and his oxygen satu-

ration limits were within normal range on room air. There was no psychiatric decompensation after the high-dose steroid use. The oral swelling decreased, and he was discharged after 2 days with oral antibiotics. A follow-up with otolaryngology revealed the formation of a band of fibrous tissue limiting the opening of the oral commissure, for which the patient was receiving triamcinolone injections.

Discussion

Inhalants have long been substances of abuse. Many household products that are easily obtained can be inhaled, including glue, toluene, lighter fluid, gasoline, correction fluid, and air dusters. A Substance Abuse and Mental Health Services Administration survey found that 67.1% of individuals who had started using inhalants in 2011 were under age 18. The survey also noted that about 7.5% of all first-time drug users in the past 12 months reported using inhalants (3). Previous reports have shown that inhalants are the most commonly abused substance used by children ages 12 to 13, although a downtrend from 2005 has been reported (4, 5).

Although the data on general inhalant abuse are abundant, there is very little information on the abuse of refrigerator coolants or Freon gas. One study, conducted by Maxwell (6), reported 144 deaths in Texas between 1988 and 1998 in which the use or abuse of inhalants was mentioned as a cause of death. The mean age of the deceased individuals was 24 years, and 35% of the cases involved chlorofluorocarbons. Another study that involved youths in juvenile correctional facilities in Virginia found that 40.45% of those who were inhalant abusers had experimented with Freon (7). The first reported death after Freon abuse was in the 1970s (8). Poison Control Center data from 2011 show 6,398 reports of abuse

of Freon and other propellants, with 19 cases resulting in death (9).

Accidental and recreational exposure to Freon gas causes a variety of symptoms, including headaches, dizziness, nausea, sore throat, shortness of breath, blurred vision, and lacrimation, as well as blisters and frost bite in perioral regions and fingers. Treatment is directed symptomatically. Long-term effects of inhaled Freon gases have included impaired cognition, delayed response times, and mood instability. Fatalities are most commonly due to respiratory depression, cardiac arrhythmias, and accidental trauma. Hydrocarbons are heavier than air and displace the oxygen in the blood when inhaled, resulting in asphyxia. Freon gases also make the myocardium more sensitive to catecholamines and predispose air coolant abusers to arrhythmias (8).

Gas chromatography is the standard measure used for detection, but it requires specific methods of specimen collection in airtight containers because it is the vaporized air above the specimen that is tested. It is also available only at certain laboratories, and false negatives are common because the tested compounds are highly volatile.

Owing to the fact that coolant gas is easily available, inexpensive, and requires only minimal tools for procurement, its popularity is growing. The number of people abusing Freon gas may be much

higher than reported because of lack of detectability in standard drug screens.

Conclusions

Providers should be aware of coolants as a source of inhalant abuse and regularly screen for this type of substance abuse. Children and adolescents need to be educated about the ill effects of huffing Freon. Using locks for air conditioner compressors should be considered as a safety option in all units. Because abusers know very little about the ill effects of inhaling Freon gas, educating providers, parents, and children and adolescents remains the most important factor in preventing adverse events.

Drs. Anbalagan and Ramalingam are both third-year residents in the Department of Psychiatry, University of Missouri School of Medicine, Columbia, Mo. Dr. Tourjee is a resident physician who is currently pursuing psychiatry residency.

The authors thank Dr. John Lauriello for his assistance and valuable guidance.

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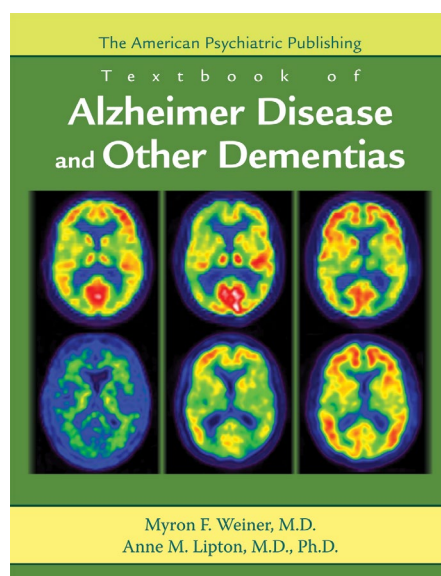
The American Psychiatric Publishing Textbook of Alzheimer Disease and Other Dementias

David Hsu, M.D.
Associate Editor

Comprehensive and useful, *The American Psychiatric Publishing Textbook of Alzheimer Disease and Other Dementias* is different from other textbooks on Alzheimer's disease in that it comes from a psychiatric perspective rather than a neurological one, thus catering to a broader audience. Geriatricians, geriatric psychiatrists, psychologists, social workers, nurses, students, and researchers all will find this text helpful in their daily clinical activities.

The introduction features a narrative starting all the way back to the ancient Greeks, leading up to Dr. Robert Butler and the start of the National Institute on Aging, ending with the molecular discoveries centered around dementia. A thorough overview of epidemiology is provided, and the urgency for more research is highlighted. The authors note that the estimated "global cost of dementia, including medical expenditures and informal care costs, was \$315 billion in U.S. dollars" (p. 28). The prevalence of dementia in the United States has been estimated to be 8 million, with a 6-year duration from the time of onset of Alzheimer's disease to the person's death.

The editors devote a large section of the book to evaluation and diagnosis. According to the writers, positron emission tomography (PET) is superior to single photon emission computed tomography in differentiating Alzheimer's disease from vascular dementia. PET can also be used to differentiate Alzheimer's disease from frontotemporal dementia. One of the most brilliant sections of this part,



edited by Myron F. Weiner, M.D., and Anne M. Lipton, M.D., Ph.D. Washington, DC, American Psychiatric Publishing, 2009, 575, pp., \$148.00.

however, is the chapter titled Cognitive Disorders as Psychobiological Processes, wherein the writer describes how a cognitive disorder affects the individual's personality and coping style.

The textbook then focuses on the phenomenology of Alzheimer's disease and other dementias. Many noncognitive and behavioral manifestations of Alzheimer's disease are also presented, such as apathy, psychosis, agitation, and mood disorders. The authors also discuss research from the University of Pittsburgh on Pittsburgh compound B, which enables in vivo imaging of brain amyloid to help differ-

entiate mild cognitive impairment from Alzheimer's disease.

The last parts of the book focus on treatment, caregiver issues, and the future of dementia care. Much attention is given to nonpharmacological and pharmacological treatments. One unique chapter in this textbook focuses on (and is titled) Ethical Issues and Patterns of Practice, written by Julian C. Hughes, a Master in the Royal College of Psychiatrists. Dr. Hughes argues against the "hypercognitive" personhood to which society is often accustomed and recommends that we focus on the multidimensional domains pertaining to physical, psychological, social, legal, family, ethical, and spiritual contexts.

This textbook is an important contribution to the field of dementia research. However, it falls short by primarily focusing on studies in psychiatry and neurology, leaving out dementia care in the primary care physician's office. Perhaps future editions can highlight ways to enhance collaborative care in this respect or further guide the primary care physician in helping someone with a cognitive disorder. Otherwise, this text will serve psychiatry residents well by introducing them to the main issues involved when they are called to consult on patients with Alzheimer's disease.

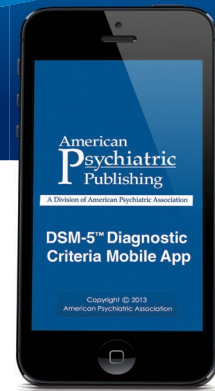
Dr. Hsu is Associate Editor of the Residents' Journal and Partners HealthCare Geriatric Psychiatry Fellow at Massachusetts General and Mclean hospitals, Boston.

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TEST YOUR KNOWLEDGE

In preparation for the PRITE and ABPN Board examinations, test your knowledge with the following questions. (answers will appear in the next issue)

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 Samidha Tripathi, M.D., a third-year resident in the Department of Psychiatry at Einstein Medical Center, Philadelphia.

Question #1

Lysergic acid diethylamide (LSD) is under which of the following categories of hallucinogens?

- A. Phencyclidine-like psychomimetic
- B. Cannabinoids
- C. Cholinergic hallucinogen
- D. Serotonergic hallucinogen

Question #2

Late-onset schizophrenia is associated with which of the following?

- A. Age of onset after 50 years.
- B. Men represent the majority of individuals with middle- to late-onset type.
- C. Risk factors and clinical presentation that differ from early-onset type.
- D. Higher prevalence of the paranoid subtype of schizophrenia.

ANSWERS TO NOVEMBER QUESTIONS

Question #1.

Answer: C. Partial agonism of the 5HT_{1A} receptor

Questions about mechanism of action of psychotropic medications frequently appear on PRITE and Board examinations. Residents must be familiar with these mechanisms of action, side effects, and drug interactions for the purpose of both examination and clinical knowledge.

Reference

1. Schatzberg AF, Cole JO, DeBattista C: Manual of Clinical Psychopharmacology, 7th ed. Washington, DC, American Psychiatric Publishing, 2010

Question #2.

Answer: D. Prominent motor signs can be found in Alzheimer's disease

Alzheimer's disease is a common type of cortical dementia, and the neuropathology of Alzheimer's disease is being widely studied, a central site being the hippocampus. Cortical dementia, unlike subcortical dementia, does not usually present with prominent motor signs.

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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.

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 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.

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- 3. Clinical Case Conference:** A presentation and discussion of an unusual clinical event. Limited to 1,250 words, 10 references, and one figure.
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- 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.

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David Hsu, M.D.
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