INTRODUCTION AND OVERVIEW

Our abilities to perceive, to move, to reason and understand, to love and hate, to work, to have moods and emotions, and to take action are based in the structure and function of our brains. To appreciate this truism, one has only to observe the slow decay of these abilities in someone with Alzheimer’s dementia or the frighteningly sudden loss of such abilities following a significant brain injury. The brain, like other organs, is vulnerable to congenital defects and damage from illness or injury. When similar problems affect the heart, the result is an impairment of blood flow. When problems affect the brain, the result is likely to be an impairment in thinking, feeling, and/or behaving.

Many people who are served by the community mental health system have identifiable problems with perception, emotion, cognition, and behavior that can be traced to brain dysfunction. Accurate assessment of these problems, followed by proper neuropsychiatric treatment, is an essential element of care. Medications for these disorders are rarely curative, but often decrease symptoms and increase social function. The person is then more capable of participating in psychological treatment and in making better use of social resources. The diagnosis and treatment of mental illness are intended to enable people to live more fully, more effectively, and more meaningfully.

The success of neuropsychiatric treatment depends, not only on medical science, but also on the social context in which treatment is given, and the values of the people giving the care. In the context of adequate social support and culturally sensitive, “person-centered” services, neuropsychiatry provides powerful tools for helping people with mental illnesses to live more stable, more fulfilling lives. In settings of social neglect or authoritarianism, such results cannot be expected; diagnosis and treatment may at best be ineffective. The development and deployment of neuropsychiatry have not occurred in an ideal manner, but rather have been confounded by the major societal issues of our times, such as stigma against the poor and ill, economic factors, the politics of gender, race, and culture. Clearly, an understanding of neuropsychiatric disorders and pharmacotherapy is essential for any provider of community mental health care, and for administrators of community mental health services.
HISTORICAL AND THEORETICAL BACKGROUND

In the 1950s, chlorpromazine became the first medication prescribed to reduce the hallucinations, delusions, and thought disorder of schizophrenia; lithium was the first medication to reduce the mood swings of bipolar affective disorder. The fact that these medications were chemically quite different and that each affected only a particular set of mental symptoms indicated that distinct biological factors caused the symptoms of major psychiatric disorders.

The success of these early medications spurred research into the brain and the development of new medicines. Technological advances in brain imaging, molecular genetics, and cell biology led to an increasingly sophisticated appreciation of the neurological basis of major psychiatric disorders, and to the development of more effective medications. Nonetheless, knowledge remains partial, and treatments are only somewhat effective.

“Mental illnesses,” more accurately referred to as “psychiatric disorders” or “neuropsychiatric disorders,” are now considered to be long-standing errors in brain function, caused by both genetic and environmental factors. Environmental factors are both physical and psychosocial. Genetics determine the potential for a brain’s development. The physical and social environments shape how this potential unfolds over a lifetime. There is no longer a sharp distinction between “nature” and “nurture,” but rather an appreciation of the continuous give and take between the brain’s biological potential and the effects of being in the world. Physical factors that shape brain development include nutrition, infections, injury, and the like. Psychological and interpersonal experience also alters brain structure and function, for better or worse. Changes in the brain that accompany PTSD are a dramatic example of the deleterious and lasting effects of negative experiences. There is growing recognition of the influence of positive social experience in healthy brain development and in the treatment of neuropsychiatric disorders. A perspective of brain plasticity based on genetics and environment allows for a realistic, comprehensive, and hopeful view of neuropsychiatric disorders (Baroncelli et al., 2010).

Classification of Psychiatric Disorders

Neuropsychiatry assumes that recognizable patterns of disturbances in thought, emotion, and behavior can be traced to particular problems in brain structure and function. Treatment is assumed to be most effective if it is directed toward this specific brain malfunction. Hence, a key activity of biological psychiatry is to parse the large historical category of “madness” or “insanity” into distinct syndromes, on the basis of symptoms, age of onset, course of the illness, and similar factors. In psychiatry, as in other branches of medicine, the description of a syndrome is followed by a scientific search for the cause of the disorder, the associated physiological abnormalities, ways to ameliorate the symptoms and, occasionally, to cure the illness. For example, at the beginning of the 20th century, German psychiatrist Emil Kraepelen drew the important distinction between what we now call “schizophrenia” and what we term “bipolar affective disorder.” A hundred years later, we know that these disorders do in fact differ in genetics, in their response to various medications, and in a variety of aspects of brain function.