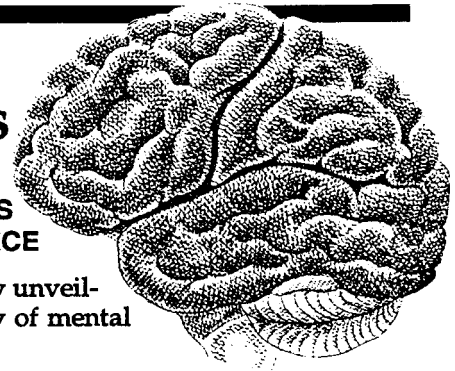




The Biology of Mental Disorders



NEW DEVELOPMENTS IN NEUROSCIENCE

likely to be a slow unveiling of the biology of mental disorders.

Mental disorders can strike with savage cruelty, producing nightmarish hallucinations, crippling paranoia, unrelenting depression, a choking sense of panic, or inescapable obsessions. Approximately one in five American adults will experience a mental disorder during his or her lifetime, including the severe mental disorders considered in this report—schizophrenia, bipolar disorder, major depression, obsessive-compulsive disorder, and panic disorder (table 1). Furthermore, the most recent and comprehensive estimate of the total costs of mental disorders—for fiscal year 1985—added up to \$103.7 billion. When adjusted for inflation, this figure reaches \$136.1 billion in 1991.

Clinical, epidemiologic, genetic, anatomical, and chemical studies have led to important advances in understanding the biology of the mental disorders and have produced testable hypotheses about causation. The intense efforts and rapid progress in brain research portend increased knowledge about these disorders in the years to come. Thus, OTA concludes that research into the biology of mental disorders is key for improved understanding of these conditions.

Many questions remain, however, concerning the biology of mental disorders. In fact, research has yet to identify specific biological causes for any of these conditions. This reflects the complexity of the brain and behavior. Given our nascent understanding of the brain, it will be necessary to persist in what is

The National Institute of Mental Health (NIMH), the chief sponsor of research into mental disorders in the United States, spent \$483.8 million on research in fiscal year 1991, reflecting the nearly 7 percent annual increase in funding between 1980 and 1992 (table 2). While NIMH supports a wide range of research, its expenditures reveal an emphasis on biological research and the severe mental disorders covered in the OTA report.

Despite the recent funding increases, Federal support for mental disorders research is comparatively less than that for other areas of health research. In 1985 only \$0.30 was spent on research for every \$100 of costs imposed by mental disorders; in comparison, \$0.73 and \$1.63 were spent on research for every \$100 of costs of heart disease and cancer, respectively. A similar disparity emerges from evaluating the Department of Veterans Affairs (VA) medical research expenditures and clinical costs: Patients with mental disorders occupy 40 percent of all VA beds, but the VA spends only 7 percent of its research monies on mental disorders research, \$15 million in fiscal year 1991. Nonfederal research support is also limited. Even with the recent creation of such organizations as the National Alliance for Research on Schizophrenia and Depression (NARSAD) and the establishment of special research awards by the National Alliance for the Mentally Ill, private foundation support for mental disorder-related research is much less than for other diseases. For example, in fiscal year 1991, the American Cancer Society spent nearly \$91 million on research, compared with NARSAD's \$3.3 million.

One important implication of research into the biology of mental disorders is the expectation for improved medications. While treatments exist for these disorders, they are not effective in all cases and side-effects are common. OTA finds that the development of new drugs to treat mental disorders is one of the greatest promises that biological research holds. At the same time, important issues—cost, side

Table 1—Prevalence of Severe Mental Disorders

Disorder	Adults diagnosed with disorder during their lifetimes (%)
Schizophrenia	1.0
Bipolar disorder	0.8
Major depression	4.9
Obsessive-compulsive disorder	2.6
Panic disorder	1.6

SOURCE: L.N. Robins and D.A. Regier, *Psychiatric Disorders in America, The Epidemiologic Catchment Area Study* (New York, NY: Free Press, 1991).

Table 2—Funding of Extramural and Intramural NIMH Research, Fiscal Year 1991^a

NIMH research	Funding (\$ millions)	Percent of research budget
Extramural		
Division of Basic Brain and Behavioral Sciences	124.2	25.7
Division of Clinical Research	169.6	35.1
Division of Applied Sciences and Services Research	42.0	8.7
AIDS	62.3	12.8
Total	398.1	82.3
Intramural	85.7	17.7
Total	483.8	100.0

^aFunding for research training is included in budgets for extramural and intramural research.

SOURCE: National Institute of Mental Health, 1991.

effects, and the civil liberties of patients subject to involuntary treatment—accompany the development and use of psychoactive medication.

Advances in understanding the biology of mental disorders may alter public perception of these conditions. Negative attitudes toward and ignorance of mental disorders abound. Surveys continue to show that many people consider mental disorders a sign of moral or personal weakness or that bad parenting causes these conditions. Some advocates emphasize the biology of mental disorders, which suggests parallels with other “physical” diseases, to counter these stigmatizing, cruel, and erroneous perceptions.

Attributing mental disorders solely to biological and especially genetic factors may, however, lead to the interpretation that human actions are predetermined. The meaning attached to a person’s thoughts and actions goes far beyond biology alone and requires social, philosophical, legal, and moral considerations. OTA does debunk some myths: Biological theories of causation are not inherently more damaging to the person afflicted with a mental disorder than other theories. Nor is it true that a biological underpinning is necessarily immutable and a psychosocial one is more malleable. Recent research does not support the conclusion that our brains are biologically fixed; instead, it shows the dynamic nature of nervous tissue and its responsiveness to environmental cues throughout life.

Advocates also draw attention to the biological bases of mental disorders in arguing for greater insurance coverage for mental health care, which is generally lower than coverage for “physical” conditions. At the same time, other mental health advocates raise concerns about the coverage of “non-biological” disorders or interventions. Because of the complexities involved in financing mental health care, the immense issue of health care finance, and the significant public health issues raised by mental disorders, OTA concludes that a full evaluation of financing for these disorders is warranted.

The findings of this study attest to the recent growth of the neurosciences and to a corresponding surge of interest in the biology of mental disorders. The potential consequences of biological research into mental disorders raise several policy issues of congressional interest: Federal support for research;

societal implications of scientific advances; and dissemination of new information. OTA presents options for action by Congress in these three areas.

Federal Support for Research—Congress is faced with the question: How should we support research on mental disorders? The most important congressional response to this question is given annually, in the allocation to NIMH. Current research opportunities, the public health problem posed by mental disorders, and the promise of research advances argue for maintained or increased support for NIMH research. Other mechanisms, such as increasing support for VA clinical research, would also serve to improve clinical studies with modest increases in appropriations.

Implications of Scientific Advances—While individuals and organizations have addressed some of the ethical, legal, and social implications of research findings, OTA finds that little formal attention has been given to these concerns by the Federal Government. OTA discusses several options for congressional action concerning these issues, including the formation of a NIMH program focused on the implications of the research it funds.

Dissemination of New Information—The dissemination of new information is an important issue for congressional consideration. Despite the rapid accrual of new information, ignorance about mental illness and its treatment abounds in our society, hampering treatment and sustaining a fertile environment for negative attitudes toward mental disorders. OTA provides several options for congressional action aimed at improving the relay of information about mental disorders to those who need it—individuals with these conditions, their family members, care providers, the public-at-large, and policymakers.

Copies of the report for congressional use are available by calling 4-9241.

Copies of the report for non-congressional use can be ordered from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402-9325 (202) 783-3238. The GPO stock number for the OTA report, “The Biology of Mental Disorders,” is 052-003-01299-5. The price is \$11.00.

For further information contact OTA’s Publications Office. Address: OTA, U.S. Congress, Washington, DC 20510-8025 (202) 224-8996.