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The biomedical model of mental disorder: A critical analysis of its validity, utility, and effects on psychotherapy research

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HIGHLIGHTS

- This commentary reviews the validity and consequences of the biomedical model.
- Drug treatments and biological theories are predominant in the United States.
- The biomedical era has witnessed little clinical innovation and worsening outcomes.
- The biomedical model has powerfully shaped psychotherapy research and dissemination.
- Dialog is needed on the utility of the biomedical vs. biopsychosocial approaches.

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ABSTRACT

The biomedical model posits that mental disorders are brain diseases and emphasizes pharmacological treatment to target presumed biological abnormalities. A biologically-focused approach to science, policy, and practice has dominated the American healthcare system for more than three decades. During this time, the use of psychiatric medications has sharply increased and mental disorders have become commonly regarded as brain diseases caused by chemical imbalances that are corrected with disease-specific drugs. However, despite widespread faith in the potential of neuroscience to revolutionize mental health practice, the biomedical model era has been characterized by a broad lack of clinical innovation and poor mental health outcomes. In addition, the biomedical paradigm has profoundly affected clinical psychology via the adoption of drug trial methodology in psychotherapy research. Although this approach has spurred the development of empirically supported psychological treatments for numerous mental disorders, it has neglected treatment process, inhibited treatment innovation and dissemination, and divided the field along scientist and practitioner lines. The neglected biopsychosocial model represents an appealing alternative to the biomedical approach, and an honest and public dialog about the validity and utility of the biomedical paradigm is urgently needed.

Contents

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1. The biomedical model of mental disorder: a critical analysis of its validity, utility, and effects on psychotherapy research

Mental disorders are brain diseases caused by neurotransmitter dysregulation, genetic anomalies, and defects in brain structure and function. *Yet, scientists have not identified a biological cause of, or even a reliable biomarker for, any mental disorder*. Psychotropic medications work by correcting the neurotransmitter imbalances that cause mental disorders. *However, there is no credible evidence that mental disorders are caused by chemical imbalances, or that medicines work by correcting such imbalances*. Advances in neuroscience have ushered in an era of safer and more effective pharmacological treatments. *Conversely, modern psychiatric drugs are generally no more safe or effective than those discovered by accident a half-century ago*. Biological psychiatry has made great progress in reducing the societal burden of mental disorder. *However, mental disorders have become more chronic and severe, and the number of individuals disabled by their symptoms has steadily risen in recent decades.* Educating the public that mental disorders are biologically-based medical diseases reduces stigma. *But despite the public's increasing endorsement of biological causes and treatments, stigma has not improved and shows signs of worsening*. Increased investment in neuroscience research will lead to diagnostic biological tests and curative pharmacological treatments. *The pharmaceutical industry has dramatically scaled back efforts to develop new psychiatric drugs due to the lack of promising molecular targets for mental disorders and the frequent failure of new compounds to demonstrate superiority to placebo*.

Such is the perplexing state of mental healthcare in the United States. The ascendancy of the biomedical model — the notion that mental disorders are brain diseases[1] — has yielded advances in genomics, neuroscience, and molecular biology that are commonly believed to have revolutionized our understanding of the nature and treatment of mental disorders. An atmosphere of enthusiastic anticipation has surrounded biological psychiatry for decades (Deacon & Lickel, 2009; Peele, 1981) driven by the faith that the field is on the verge of discoveries that will transform assessment, prevention, and treatment, and even eradicate mental disorders altogether (Wolfe, 2012). According to National Institute of Mental Health (NIMH) director Thomas Insel (2010), advances in neuroscience will "lead to more targeted and curative treatments" (p. 51) and may herald the day when "the distinction between neurological and psychiatric disorders will vanish, leading to a combined discipline of clinical neuroscience" (Insel, 2007, p. 757). The biomedical model of mental disorder is an accepted reality in the United States, and those who publicly question its legitimacy are swiftly and vigorously criticized by its advocates (e.g., American Psychiatric Association, 2003a, 2005, 2012; Kramer, 2011).

Often overlooked in the context of widespread enthusiasm for the biomedical model, until recently brought to light by a series of high-profile challenges to the status quo in psychiatry (e.g., Carlat, 2010; Kirsch, 2010; Whitaker, 2010a), is the fact that mental health outcomes in the United States are disconcertingly poor. There exists a striking disconnect between decades of pronouncements by mental health authorities about transformative advances in neuroscience and biological psychiatry and the stagnant state of the clinical management of mental disorders. The aforementioned critiques of the modern biomedical model approach to mental disorder, and the popular media attention they have received (e.g., Angell, 2011a, 2011b; Begley, 2010; Spiegel, 2012; Stahl, 2012), have stimulated an increasingly public dialog regarding the validity and utility of the biomedical paradigm in mental health. A critical analysis of this topic is long overdue, as is a close examination of the practical consequences of the longstanding dominance of the biomedical model on clinical psychology and psychotherapy research.

2. The biomedical model

The biomedical model assumes that mental disorders like schizophrenia, major depressive disorder, attention deficit/hyperactivity disorder (ADHD), and substance use disorders are biologically-based brain diseases. Core tenets of this approach include: (a) mental disorders are caused by biological abnormalities principally located in the brain, (b) there is no meaningful distinction between mental diseases and physical diseases, and (c) biological treatment is emphasized (Andreasen, 1985). In the biomedical paradigm, the primary aim of research into the nature of mental disorders is to uncover their biological cause(s). Similarly, treatment research seeks to develop somatic therapies that target underlying biological dysfunction. The ultimate goal is the discovery of magic bullets — precise therapeutic agents that specifically target the disease process without harming the organism, like penicillin for bacterial infection (Moncrieff, 2008).

The biomedical model was eloquently described (and criticized) by psychiatrist George Engel (1977) as follows:

> The dominant model of disease today is biomedical, with molecular biology its basic scientific discipline. It assumes diseases to be fully accounted for by deviations from the norm of measurable biological (somatic) variables. It leaves no room within its framework for the social, psychological, and behavioral dimensions of illness. The biomedical model not only requires that disease be dealt with as

[1] The phrase "biomedical model" is used throughout this article to describe the predominant approach to mental disorder in the United States. Also known as the "disease model" (Kiesler, 2000), the biomedical model is a specific manifestation of the broader medical model in which psychosocial approaches to mental disorder are eschewed in favor of biological theories and treatments (Engel, 1977).