

Ethics & Psychiatry

An Insight into Modern Medical Treatments



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The science of psychiatry confronts some of the most difficult issues of modern medicine, veering on the outskirts of human knowledge. Yet, the study of mental health in America has existed for centuries, indicating that the desire to understand the human mind has and will continue to exist for years to come. It is no surprise, therefore, that efforts to recognize and treat mental health patients have grown more in this country's past 50 years than ever before. Today, public practice of psychology has become more and more widely accepted, indicating an increased social acknowledgement and recognition of mental and behavioral disorders. However, enthusiasm for psychiatry is abated by how little is known about the human brain in the medical world. Diagnosis and treatment are only effective to the extent that we can understand the human mind. Nonetheless, an increased understanding of neuroscience and a heightened sense of awareness in society has brought psychiatry to the forefront of modern medicine.

In this paper, I will be specifically discussing the diagnosis, treatment, and issues surrounding mood disorders such as depression and bipolar disorder I/II in America. While biological knowledge regarding these illnesses is limited, I will attempt to dissect the modern-age understanding of such mental health disorders by discussing how they are recognized, categorized, and neurologically defined. I will then progress from a broad analysis of multiple forms of treatment into a discussion of the major social, ethical, and limitation issues surrounding psychiatry, specifically through the lens of mood disorders. As a culmination, this paper will provide a comprehensive introduction and analysis of mood disorder-related psychiatric practice in modern-day America.

DIAGNOSIS/PROGNOSIS

Beginning even as early as the era of ancient Greece, the earliest diagnosis of mood disorders were all categorized under *melancholia* and were attributed to arbitrary imbalances in vague bodily fluids known as "humors". Today, psychiatric diagnosis is much more intricate. In the 21st century, medicine has been ushered into the "era of the genome" thanks to advances in molecular biology and genomics (3)¹. Because of these advances, abstract fields such as psychology can be increasingly substantiated and defined in terms of etiology, or the biological causation behind certain disorders.

Yet modern methods of evaluation are, in a way, similar to the abstract methods of centuries past. That is, diagnoses of mental disorders are still largely syndrome-based as opposed to genetically derived. According to Nancy Andreasen and Donald Black's Introductory Textbook of Psychiatry, a syndrome is characterized by a compilation of symptoms that have a tendency to occur simultaneously and project an identifiable course and outcome (4)¹. This definition is central to the diagnostic process for mood disorders, based primarily on interviews and subjective reports of personal experiences and observations.

The Mental Status Examination is perhaps the most prevalent example of syndrome-based diagnosis in modern psychiatry. A comprehensive evaluation of patients based on appearance, speech patterns, memory, and judgment, the MSE is almost entirely based on the observation and study of visible symptoms, often unapparent in average interactions (22)¹. A typical MSE interview is outlined according to assessment of attitude, motor activity, thought and speech, perception and orientation, reading and writing, attention, and the list goes on. These assessments are derived from patient responses to deductive questioning and monitored exercises. The MSE's main focal point, however, is standardization. That is, patients' responses are evaluated according to their levels of normality or abnormality. In order to facilitate this comparison, doctors must develop a consistent repertoire of questions and processes when executing the MSE so that they can gauge various behaviors on a well-founded range of normal to abnormal responses. Thus, the validity of psychiatric diagnosis relies on the standardization of symptom-based procedures like the MSE.

THE DSM:

This emphasis on standardization in psychiatric diagnosis has been manifested over time into the final product known today as **Diagnostic and Statistical Manual of Mental Disorders**, or the DSM. The first DSM was developed by the American Psychiatric Association in 1952 and has since been revised through four major editions. A testament to the growing interest in psychiatric studies, the DSM has expanded from its initial 132 pages to today's 494 pages, almost four times its original size, with the manual's most recent revision is expected to be released in May of 2013². The goal of this standardized system of diagnosis, however, has always been to create a system of specificity, essentially to foster discussion between different diagnoses, as well as to decipher different disorders from one another (8)¹.

The manual's multi-axial organization ensures that this detailed deciphering between disorders takes place, evaluating the nuanced aspects of patient health and experience on five main axes: 1) clinical disorders, 2) personality disorders/mental retardation, 4) medical conditions, 5) environment, and 6) overall assessment of functionality (12)¹. The first axis is used to indicate major existing syndromes, such as schizophrenia or bipolar disorder. The second axis, on the other hand, tracks disorders that manifest early in life, to account for prior conditions that may be otherwise ignored. The manual's third axis codes any relevant medical conditions, such as thyroid disease, that may interact with a psychiatric disorder or psychoactive drugs. The fourth axis does the exact opposite, coding any social or environmental factors that may influence a patient's mental health. These factors are in turn classified in nine different subcategories, an indication of the DSM's specificity. The final axis of the system is also multidimensional, as it calls for doctors to place patients on a 1-100 scale of overall functioning.

The final goal of the DSM is to create improved reliability in nation-wide diagnoses of mental disorders. "Reliability", in this sense, can be defined as the ability for two independent observers to agree on a decision, in this case the psychiatric evaluation of a patient. By providing a detailed skeleton for diagnoses, the DSM thus serves as a backbone for the legitimacy of

psychiatry. However, its unintended consequences for the diagnostic process include false certainty, sacrificing of validity in favor of reliability, and dehumanizing of patients. These side effects (analyzed further into the paper) suggest that the DSM's major drawback is its reliance on widespread yet arbitrary interpretations of symptoms.

DEFINING MOOD DISORDERS

DEPRESSION:

The main group of DSM diagnoses discussed in this paper is mood disorders, primarily depression and manic episodes or bipolar disorder. These disorders are defined as involving intense and prolonged shifts in mood, often underlying symptoms that have been known to translate or exist in a multitude of other disorders such as schizophrenia and behavioral disorders. The DSM diagnoses major depressive episodes according to five criteria labeled from A to E. According to the first criterion, depression can be identified by meeting five of nine common symptoms, at least one of which must be depressed mood or loss of interest for over two weeks in order to rule out transient mood fluctuations. Among these other symptoms are irritability, vegetative state (the inability to get up and perform every day tasks), insomnia, decreased sex drive, altered motor activity (psychomotor retardation or agitation being the most extreme cases), and suicidal thoughts. Depression has also been known to exhibit diurnal variation, which is the fluctuation of symptoms over the course of a 24-hour period. For example, a depression patient with diurnal variation may wake up feeling no symptoms, but may slowly move towards more depressive symptoms as the day approaches night. In such cases, depression often remains masked and patients attempt to self-treat their symptoms by abuse of drugs, alcohol, or stimulants.

The remaining criteria for recognizing depressive episodes serve to either rule out other possible conditions, such as bipolar disorder which would constitute a *mixed episode*, or to gauge whether the symptoms create sufficient "distress or impairment in social, occupational, or other important areas of functioning"³. In this way, the DSM criteria is both specific, addressing the variability of other disorders and random fluctuations, and broad, comprised of generic and accessible symptoms of depression.

Most single cases of depressive episodes are expected to clear within approximately six months, with a relatively good prognosis for recovery due to the efficacy and availability of antidepressants. Yet this is not always true. Out of American depression patients, 20 percent develop a chronic form of depression, meaning that their depressive episodes are recurrent and not treated within six months. Another 20 percent of patients who suffer from severe depression may develop psychotic or delusional symptoms. In worst case scenarios, 10 to 15 percent of patients will eventually commit suicide (145)¹. These statistics are a clear indicator of the gravity of mood disorders, even in commonly acknowledged syndromes like depression.

MANIC/BIPOLAR:

The DSM criterion for manic episodes is similar to the structure of the depressive episode criterion. Doctors diagnosing for bipolar disorder must observe the abnormal presence of elevated moods (irritable or euphoric) for more than one week, in addition to three of seven key symptoms. These symptoms include grandiosity or inflated self-esteem, decreased need for sleep, increased talking, racing thoughts, distractibility, psychomotor agitation, and excessive involvement in dangerous activities³. The main characteristic of manic patients is therefore their lack of insight or judgment, and extreme moods. This extremity is so serious that as opposed to the 20 percent frequency in depression patients, over 50 percent of manic patients have psychotic symptoms (147)¹. The classification of manic episode-based disorders is thus more divided than the classification of depression, although both have their various versions and anomalies.

The diagnostic criteria for mood disorders can ultimately be divided into two primary groups: *unipolar* and *bipolar*. Unipolar patients have only been diagnosed with depression while bipolar patients have been diagnosed with mania, potentially along with depression. These two subtypes are based on differences in heredity, treatment, and perhaps etiology. The bipolar sect itself is further divided into two types of disorders. Bipolar I is characterized by recurring manic and depressive episodes that are large impediments to everyday life and that may often times require hospitalization and an intensely regulated medical regimen. Bipolar II, on the other hand, is characterized by intermittent phases of hypomania that occur in close proximity to episodes of depression. The term “*hypomania*” entails that the patient’s symptoms are not as severe or otherwise do not meet the full criteria for a manic episode, and that hospitalization is not required. Bipolar patients of either sort may even seem perfectly normal in inter-episode functioning. In both cases, however, extreme and unpredictable mood fluctuations can be severely hindering to patients’ lifestyles. Bipolar disorder has thus been rightfully ranked as sixth among the world’s most disabling illnesses (139)⁴.

BRAIN STRUCTURE AND FUNCTIONING

STRUCTURE:

In order to grasp the etiology behind the surface symptoms of these mood disorders, we must first gain an understanding of basic brain structure. The major subregions of the brain related to mental health are the prefrontal cortex, limbic system, and basal ganglia. The prefrontal cortex is known to be central to a variety of executive functions, including attention, perception, motility, planning, and emotion. In other words, the executive functions refer to cognitive processes that require mental and psychological reasoning. The prefrontal cortex is the largest cerebral region in the human brain, larger than in any other animal in fact. A combination of neuroimaging and cognitive tests has not only revealed the correlation between these functions and the prefrontal cortex, but has also linked prefrontal activity to certain mental disorders. Patients with obsessive compulsive disorder and anxiety, for example, have shown increased prefrontal brain activity in neuroimaging. This supports the hypothesis that certain

patients with mental illnesses may be “hyperfrontal” or “hypofrontal”. Hence, depressed patients that experience decreased mobility may have lower prefrontal activity (hypofrontal), while bipolar patients with increased anxiety and mobility may have higher activity (hyperfrontal). Through neuroimaging, it is therefore possible to finally understand certain psychological processes through a neurological lens.

Much less is known about the limbic system of the brain, except that in some way affects mental health. There is no clear knowledge of what constitutes the limbic system, other than the fact that *limbic*, a term first used by French neurologist Paul Broca, refers to a ring of tissue that surrounds the frontal cortex. A broader understanding of the system is linked directly to the hypothalamus and amygdala to create a circuit of sensory signals from the brainstem and prefrontal cortex. Although the true function of the limbic system is still not fully understood, it is believed to be of great importance to the human psyche because it collects a foundation of sensory experiences and memories. Lesions on the amygdala, for example, have been shown to be connected to paranoia, creating fear and suspicion in patients and indicating a clear link to psychological processes.

The basal ganglia may also be related to the modern understanding of mental illnesses for two main reasons. The first is the correlation between multiple syndromes and abnormalities in the basal ganglia regions. Huntington’s disease, for example, presents symptoms such as delusional thinking and unprecedented dementia in patients whose caudate nuclei (a component of the basal ganglia) have atrophied⁵. Parkinson’s disease also affects neurotransmitter activity in the basal ganglia, resulting in symptoms of schizophrenia and dementia¹. The implication here is that abnormalities in the basal ganglia have a tendency to manifest into psychological disorders. The basal ganglia are also highly pertinent to psychiatry because of the high chemical concentrations of neurotransmitters in the system, the main control factors in mood disorders.

NEUROTRANSMITTERS:

Among these factors, the three main neurochemical systems related to psychiatry are the dopamine, norepinephrine, and serotonin systems. These neurotransmitters are the main functional units of the brain’s anatomy, responsible for the transmission of signals in between neurons and target cells. When an abnormality occurs in the number of neurotransmitter receptors, anatomical systems in the brain cannot function properly, resulting in various psychological side effects such as depression or mania. The **dopamine system** affects primarily the prefrontal cortex, basal ganglia, and limbic system through the concentration of D₁ or D₂ receptors in these respective regions. The most specific and localized neurotransmitter, dopamine affects executive – primarily cognitive and emotional – functioning in the cortical region, making it one of the most crucial systems in understanding psychotic disorders.

The **norepinephrine system** projects neurotransmitters virtually all throughout the brain, suggesting that it may be directly linked to the central nervous system. In early psychiatric medicine, antidepressants worked by inhibiting brain receptors from the reuptake of

norepinephrine, thereby increasing production of the neurotransmitter to accommodate lower levels. This method was proven effective and led doctors to believe that a deficiency of norepinephrine led to depression while an excess led to mania.

Today's knowledge of the **serotonin system** has shown this belief to be an oversimplification. Serotonergic neurotransmitters are distributed similarly to the distribution of norepinephrine transmitters, projecting to a wide range of central nervous system regions¹. Hence, most antidepressants that regulate norepinephrine also regulate serotonergic activities. Knowledge about the link between serotonin and psychiatry thus grew *from* the study of psychiatric medicine, which demonstrated an improvement in depressive symptoms after the blocking of serotonin receptors. Thus, with the intermingled regulation of all three neurochemical systems, it is clear that there are no exclusive relationships between mood disorders and any single neurotransmitter¹.

EPIDEMIOLOGY: GENETIC AND PSYCHOSOCIAL

Yet knowledge of these neurotransmitter systems still gives us a relatively vague understanding of psychological disorders and the processes behind them. The modern day consensus that mental illnesses are backed by a genetic component has thus led to increased epidemiological approaches in studying psychiatry:

The first of these methods is *family studies*, which examines whether or not certain ailments are hereditary, thereby drawing conclusions about these disorders. Essentially, if a control patient's illness is tracked in a substantial number of first-degree relatives (mother, children, etc.), doctors can assume that the disease is familial and possibly genetic. Examples of disorders that have been found to run in families include major depression, bipolar disorder, schizophrenia, and ADHD to name a few.

The second method of epidemiological study is known as *twin studies*. These studies delve beyond whether a certain disorder is merely familial, and provide perspective as to whether an ailment is specifically genetic. The key to these studies is a comparison of identical vs. non-identical twins, primarily because identical twins are monozygotic and therefore share exact genetic material whereas non-identical twins share only an average of 50% of their genetic material. Thus, higher concordance rates of certain ailments in identical twins as opposed to lower rates for non-identical twins would suggest that these ailments have a higher degree of genetic influence¹. Studies have shown that the concordance rates of schizophrenia and bipolar disorder in identical vs. non-identical twins are 60 percent to 5 percent, whereas the respective rates for breast cancer are much closer together at 30 percent to 10 percent¹. The supposed significance of these numbers is that mental illnesses appear to be more genetic than other medical diseases. Yet, the main drawback of *twin studies* is the unaccounted influence of psychosocial factors such as family environment.

The third and most reliable method of epidemiological study is *adoption studies*, which serves to differentiate between social and genetic influences in mental disorders. The study is based on observing children that are born to parents with psychiatric illnesses but raised by parents without these illnesses. These children are compared to control groups of other adopted children. The higher the rate of a certain illness in the first group of children as opposed to the second, the more doctors can assume that it is genetic rather than social. This study has demonstrated a clear genetic component to mood disorders and even schizophrenia.

Yet medical attempts to further identify the genes behind mental disorders have been relatively futile. Three major approaches all yield relatively low results:

Linkage studies were the earliest successful means of finding genes for disorders. The discovery of a correlation between chromosome 4 and Huntington's disease, for example, was found through linkage studies. Yet apart from this, they are not very successful. Promising links between sites on chromosomes and illnesses are rarely able to be reproduced in subsequent studies, leading to false optimism and hope rather than real, valuable information.

Association studies are more specific from the beginning. Researchers choose a "candidate gene", such as a protein or enzyme that regulates brain activity, and compare its functioning in patients with mental illness vs. control patients without any history of mental illness. This method has led to the discovery of potentially prone genes for schizophrenia. However, association studies have the same drawback as linkage studies, namely that they rely on repeated replication.

Finally, *genome-wide scans* are the broadest form of searching for specific psychology-related genes, made possible by the haplotype map of the entire human genome¹. Though this method has only revealed weak evidence for certain chromosomes, it is expected to become a much more effective method of gene location over time. Already, researchers have found evidence to suggest that bipolar disease is connected to the *Val* allele on the BDNF gene.

The etiology of mood disorders is therefore comprised of many different factors. Genetics is the newest and least substantiated tier of psychiatric understanding and there is no doubt that social and environmental factors have large effects on mental health patients. Often times, stressors from traumatic events persist beyond two months and translate into depressive episodes, suggesting that there is a clear and undeniable correlation between social factors and mood disorders. The question to ask is therefore exactly *how* influential are outside factors on psychiatry? It is possible that social factors may instigate biological reactions that are difficult to stop and are translated into various mental disorders. Not to mention that certain patients may be conditioned from an early age to be psychologically sensitive to stressors, demonstrating a clear coexistence of genetics and environment.

TREATMENT

The primary motivation in understanding the etiology behind mood disorders is to further hone and perfect methods of treatment. Current treatments for bipolar syndrome and depression include psychotherapy, antipsychotics, antidepressants, and mood stabilizers. In many cases, these methods of treatment are used in conjunction with one another, a true sign of the interconnectedness of most psychiatric studies.

PSYCHOTHERAPY:

The first order of treatment, psychotherapy, is considered a crucial facet of a multi-pronged approach to dealing with mood disorders. Psychiatrists are often encouraged to work together with patients' therapists in order to gain a comprehensive understanding of individual cases based on both medical and personal information. The importance of therapy is that it offsets the arbitrariness of psychiatric practice with empathetic and caring relationships with trained professionals. The main function of psychotherapy is therefore not necessarily to "heal" a patient, but to work with medical treatments by providing patients with education, insight, and support in the midst of a difficult process that may or may not lead to permanent recovery. Because of the highly varying and internalized nature of mood disorders, there is no single way to open up to patients through therapy. Hence, psychotherapy exists in many forms, three of which are behavioral, cognitive and classical practices.

Behavioral therapy is constructed around the relationship between stimuli and responses in patients, essentially an expansion of Pavlov's studying in conditioning. In this mode of therapy, attention is not geared towards patients' internal thought processes, but rather towards their actions and routines. The idea here is that changes in behavior will ultimately manifest into changes of emotion. In some ways, this is true. Studies have shown that increased exercise releases endorphins which translate into feeling of happiness and contentment in people. In the *Pavlovian* process, certain stimuli are correlated with certain reflexes through repetition until a patient is conditioned to associate the two with each other. An example of this is found in Anthony Burgess' novel *A Clockwork Orange* (written years after the introduction of Russian physiologist Pavlov's conditioning experiments) when the main character is transformed from a violent delinquent to a submissive and obedient citizen through conditioning. He is trained to experience fear and sickness whenever he sees or thinks of violence, and unintentionally when he hears Beethoven's Ninth Symphony. This concept can be applied moderately in modern psychotherapy, using music signifiers to induce calmness in unpredictable bipolar patients. Operant forms of behavioral therapy also mold patients through positive or negative reinforcement based on responses to certain behaviors.

The second form of psychotherapy is a subset of individual therapy known as *classical psychoanalysis*. This practice originates from the treatments of Sigmund Freud in the early twentieth century, aiming for full disclosure of patients' subconscious thoughts and insecurities⁶. Freud's particular method is indicative of the stereotypical therapy setting in which the patient

lies on a couch while the therapist encourages them to talk freely about any repressed thoughts (Freud actually used to place his hand on his patients' forehead to foster a sense of intimacy and comfort). Classical psychoanalysis is centered on the fundamental belief in *transference neurosis*, or the idea that through relaying thoughts and feelings based on early life experiences, patients are able to identify hidden issues and thereby able to make necessary modifications through mere awareness. The therapist in these scenarios is almost always a neutral filter for the patient, although these therapists often require extensive psychoanalysis and training themselves in order to maintain balanced relationships with their patients. Classical psychoanalysis today is generally only applied to patients whose mental health is stable enough for self-scrutiny and contemplation. Yet Freud's study of subconscious thought has contributed numerous systematic concepts to the field of psychiatry, including psychosexual development, motivational structure (id, ego, and superego), and dream symbolism. Ultimately, classical psychoanalysis seems to be an excellent form of practice for patients with less severe cases.

The third major form of psychotherapy, *cognitive behavioral therapy* (CBT), is perhaps the form that is most widely practiced today and is a combination of various sources of therapy, including behaviorism and Freudian theory. The basic tenet of CBT is the idea that life experiences shape each patient's set of cognitive structures (perception, memory, etc.) which determine how they will react to certain environmental stressors. When a patient's cognitive structures are predisposed to negative reactions and interpretations, they develop syndromes like depression or anxiety. In fact, CBT is the most common form of treatment for depression patients today. The end goal of CBT is therefore to help patients restructure their cognitive processes so that they can perceive reality differently. This requires behavioral practices, such as preaching patients of *mindfulness*: being aware of their own thought progressions and noting patterns. For example, a patient with bipolar syndrome might be encouraged to observe thought patterns associated with their manic episodes (e.g. spiraling or fatalistic thoughts) and record the time span for these patterns. In this way, the patient is able to study their own disorder and develop different cognitive structures through awareness. CBT therefore seems to be the most effective form of therapy for patients with more severe symptoms because it relies on a combination of physical practices and mental restructuring, culminating in a comprehensive plan of treatment.

PSYCHIATRIC MEDICINE:

Of course, almost all forms of psychotherapy are combined with an alternate form of medical treatment. The primary drugs that are prescribed for mood disorders are antipsychotics, antidepressants, and mood stabilizers, all of which have different target functions:

Antipsychotics are mainly used to control psychotic symptoms, such as delusions and hallucinations, but are not curative. Because of this, they are often referred to as "major tranquilizers", a misnomer considering that they do not produce tranquility, but rather halt extreme psychological instability. Conventional antipsychotics (Thorazine, Prolixin) do so by

blocking dopamine receptors in the cortical and limbic pathways of the brain. This mechanism leads to considerable side effects in patients, the most common of which is *tardive kinesis* (TD), a condition in which patients lose control of voluntary movements as a result of receptor hypersensitivity to dopamine. Other side effects include *pseudoparkinsonism* (loss of motor control), impotence, and hypotension or low blood pressure. However, second generation antipsychotics (Abilify, Zyprexa) have stronger interactions with serotonin receptors and also have antihistamine properties, reducing the side effects commonly associated with antipsychotics. Yet even these drugs are linked to dysfunction in metabolic processes such as glucose and lipid regulation (486)¹. Ultimately, the use of antipsychotics is controversial because of its high affinity for harmful side effects. Yet antipsychotics have still been used in treatment of illnesses that are not psychotic, including mood and drug-induced disorders. Controversy surrounding nonspecific prescription of antipsychotics has been abated by the development of modern antidepressants that are better suited for most psychiatric ailments.

The discovery of **antidepressants** is actually derived from the development of antipsychotics, namely the introduction of the drug imipramine which was found to have no effect on psychotic symptoms but proved very successful in the treatment of depressive symptoms⁷. This led to the development of tricyclic antidepressants (TCAs), followed by monoamine oxidase inhibitors (MAOIs), and finally the modern favorite, selective serotonin reuptake inhibitors (SSRIs). All of these options work by controlling the levels of neurotransmitters in the brain to alter patients' mental states, and are used to treat a multitude of disorder, including bipolar, OCD, and PTSD. The term *antidepressant* is therefore also a misnomer. Overall, these drugs have proven to be the most effective forms of psychiatric treatment, with approximately 65%-75% of patients responding within 4-6 weeks of use (488)¹.

The first choice in antidepressant prescriptions are SSRIs, mainly because they are safe in overdose and present no danger to patients prone to epilepsy or cardiac defects. There are six SSRIs in the current drug market: citalopram, escitalopram, fluoxetine, fluvoxamine, paroxetine, and sertraline¹, all of which essentially function by inhibiting serotonin receptors from re-accepting used serotonin transmitters, therefore inducing an increased production of serotonin in the body. All six drugs share similar side-effect profiles, all of which consist of minor symptoms such as initial nausea, anxiety, insomnia, and sexual dysfunction. However, the withdrawal symptoms for SSRIs are similar to the initial symptoms with the exception of frequent "brain shocks", or periodic moments of disorientation and vertigo. This is perhaps the most frightening aspect of SSRIs because it reveals the intensity of chemical alteration in the brain that is caused by antidepressants. In extreme cases, SSRI use can lead to serotonin syndrome, caused by overwhelming levels of serotonin in the brain and resulting in potential hyperthermia, renal failure, and death. Yet with the proper monitoring and correct dosage, SSRIs are still the best antidepressant option in medicine today, primarily because of their versatility, relative safety, and compatibility with other medications.

MOAIs and TCAs are the secondary options in antidepressant drugs, presenting more severe risk for dangerous side effects in mental health patients. MOAIs function by inhibiting the enzyme known as monoamine oxidase that is responsible for the breakdown of neurochemicals like serotonin, dopamine, and norepinephrine, ultimately resulting in increased levels of these transmitters. MOAIs are mostly prescribed to patients with anxiety and other atypical symptoms related to depression. However, they have low antihistaminic properties which lead to significant and numerous side effects, including hypotension and fatal interactions with other substances, such as tyramine. Because of this, patients on MOAIs must be particularly conscious of their diets and consumption. TCAs function by inhibiting the reuptake of both norepinephrine and serotonin. However, because they bind to plasma and tissue proteins, they are known to commonly cause high variation in plasma levels in the blood which can result in toxicity and loss of homeostasis. Thus TCAs present the problem of intense regulation of patients' blood levels and cardiovascular performance through frequent hospital visits.

The last primary group of drugs used to treat mood disorders is **mood stabilizers**, also known anticonvulsants, which are most commonly used for bipolar or mania patients. Lithium Carbonate, the most widely used form of mood stabilizers, is a natural salt that became available for psychiatric use in 1970 and is still used today. While lithium has been shown to relieve symptoms of mania, its mechanism of action is still relatively unknown (505)¹. It is known to alter the intracellular processes in neurons by inhibiting enzyme response to neurotransmitters rather than regulating the levels of neurotransmitters themselves. Yet despite its unknown nature, lithium is still used to treat a vast array of disorders other than bipolar syndrome, including dementia, mental retardation, and recurrent depression. This presents a crucial controversy in the widespread practice of lithium-based treatment. Harsh and largely common side effects, such as toxicity from salt imbalance, hypothyroidism, hypercalcemia, and renal failure, further support the case against lithium use.

CONTROVERSIAL ISSUES

The various methods of treatment and diagnosis in mental health inevitably lead to controversy in questions of ethics and efficacy. In this final section, I will address the main issues surrounding the medical practice and social context of modern-day psychiatry:

ALTERING OF BRAIN CHEMISTRY:

Given the limited extent to which we can understand the human brain, most opposition to psychiatric treatments stems from a wariness of meddling with a fragile system that we know so little about. According to neuroscientist Martha Farah of the University of Pennsylvania, “brainbased enhancement involves intervening in a complex & poorly understood system, & the likelihood of unanticipated problems is consequently higher.”⁸ Indeed psychiatry faces the burden of treating disorders in uncharted territories, whose etiologies are mostly unknown to this day. We have yet to fully understand the true, biological association between

neurotransmitters and the prevalence of mood disorders Not to mention that the use of linkage, associative, and genome-wide scans have all proven relatively ineffective thus far, providing psychiatrists with an unstable basis for diagnosing these mental illnesses.

Yet the knowledge that we *have* gained through neuroimaging has provided us with enough insight to make these first steps into the world of psychiatry. True, we may not know enough about the biological and genetic components of mental disorders. But I believe that doctors today are doing the best work that they can with the information that they currently have. Neuroimaging has allowed us to assess mental disorders by observing localized brain activity, and the manipulation of neurotransmitters has proven effective in antidepressants, especially SSRIs. Thus, just because we may not fully understand *why* a certain medication is successful does not mean that we should abandon all efforts for treatment all together. Psychiatry is similar to any new field of science in that it develops and operates through time and research.

VALIDITY IN PROGNOSIS:

The lack of biological knowledge behind mental disorders leads to the key problem of doctors having to rely on symptom-based forms of diagnosis. This provides a major roadblock to constructing invariably valid conclusions about mental health patients. Because psychiatry is largely driven by patient testimonies, clinicians must draw conclusions almost solely from the subjective account of various informants. It is therefore almost impossible to discern a true diagnosis in psychiatry because it is impossible evaluate thought directly from a patient's subjective speech (43)¹. The most common example of difficulty in the diagnostic process occurs with hypomanic patients who often oscillate between mild manic and depressive states. Thus it is hard for psychiatrists to evaluate the true mental state of patients with hypomania based on outward appearances. In these cases, it can be very easy for patients to manipulate doctors or for doctors to misunderstand patients based on purely symptom-based diagnosis. Hence, there seems to be little argument in favor of absolutely valid diagnoses in psychiatry given our limited knowledge of genetics and neurobiology.

WHAT IS THE "NORM"?

One of the key dangers to blindly accepting the validity of psychiatric diagnoses is the power for doctors and psychiatrists to define and standardize what is considered "abnormal" versus "normal" behavior. Most of the criteria in the DSM are based off of whether a patient "shows *appropriate* or *inappropriate* emotional reactions" (24)¹. The third criterion of depression itself aims to identify significant distress in order to differentiate the symptoms from *normal* fluctuations in a patient³. Yet, aren't all patients different? How can a doctor determine what is or is not normal for any one individual? To do so requires the assumption that all human beings behave according to the same standards of normality on a day-to-day basis. This places too much power in the hands of doctors and psychiatrists who are themselves subjective human beings. How about if we fall in love with someone on Prozac? Should we assume that their "normal" state exists on or off of the drug⁹? What is the definition of "normal" once brain

chemistry is altered? Current diagnostic language therefore present problems based on the arbitrariness of judging normality in relation to all of human society. The apprehension towards diagnosing mental illness is hence a reasonable fear in light of psychiatry's inherently subjective nature.

MANIPULATION OF MENTAL DISORDERS:

The fear of placing too much power in the hands of doctors is also relevant to the increasingly frequent prognoses of mood disorders in today's society. According to professor and psychiatrist, David Healy, "The greater tolerability of these medications, along with increased public awareness of mental illness and aggressive marketing of psychiatric medications to physicians and patients has led to the widespread use of psychopharmacology by people who would not have been considered ill twenty years ago"¹⁰. This suggests that the study and treatment of mental illness today has become increasingly prone to corruption and erroneous diagnoses. Psychiatrist Laura Hirshbein has suggested that clinicians today view patients as "part of large statistical series who [have] some statistical chance of response to any particular treatment" (130)¹¹. It is noteworthy, therefore, to recognize that current diagnostic models rely solely on patients' individual relationships with their doctors, often ignoring patients' overall contexts in their respective communities.

This potential for manipulation of mental health patients also extends to the **commercialization** of psychiatry. Hirshbein argues that depression has "become part of our mass market consumer society – it is a problem that can be solved with a product" (129)¹¹. Indeed, pharmaceutical companies have become undeniable beneficiaries in the increase of psychiatric practices in today's society. Treatment of mental disorders has turned into a profitable industry for private businesses that manipulate the resources of patients who may or may not even need medication. In fact, for people from ages 15-45, depression accounts for 10.3% of all biomedical illness costs worldwide (139)¹. It is thus fair to deduce that psychiatric treatments in the modern era may be unreliable because they are connected to and in many ways molded by commercial interests.

The history of mood disorders also reveals a basis for the argument that psychiatry can and has enforced **discrimination**, particularly gender-based discrimination against women. Hirshbein asserts that depression was originally constructed as a disease that pertained only to women in the pre-1960s era. She claims women were diagnosed on the basis that "if they feel bad...or if they're not enjoying life, then it is a disease" (129)¹¹, suggesting that unhappiness in women was initially viewed as an abnormality that was thus summed up as a new disorder known as depression. Studies showing the ratio of depression in men and women to be 2:1 (155)¹ support this theory of the disorder as a gendered phenomenon in modern medicine.

However, I believe this assumption to be a hasty conclusion about psychiatry. Given how little we know about the biology behind mood disorders, we cannot rule out that women in fact

are more prone to depression than are men. Women have been known to have more volatile variations in hormonal activity. And hormones are closely associated with emotional fluctuations. In fact, a facet of depression is pre-menstrual dysphoric disorder (PMDD), a condition in which women experience severe fluctuations in mood that correspond with their shifting hormone levels around the time of their menstrual cycles. Thus, although we may not know the exact correlation between hormone levels and depression, it is wrong to label higher diagnoses of depression in women as pure prejudice.

ETHICS AND PRIVACY:

One of the often forgotten aspects of psychiatry is the nature of doctor-patient confidentiality. According to Justice Clark of the Supreme Court, “the very practice of psychiatry depends upon the reputation in the community that the psychiatrist will not tell.”¹². This is of course a necessity, especially in psychotherapy, which is reliant on the candidness and truthful testimony of all patients. Yet the ethics of privacy in psychiatry are strained by practitioners’ duty to the public. In the 1974 Tarasoff Decision (the result of the Tarasoff versus Regents of University of California court case), it was decided that every therapist must give warning to any persons that may be endangered by a patient’s mental state, thereby breaking the essential confidentiality between patient and doctor. Justice Tobriner summed up the majority opinion of the case by asserting that “protective privilege ends where the public peril begins.”¹³.

Of course, this decision stands for the protection of public safety over individual privacy. Yet the one argument against this jurisdiction is that it may discourage patients from being truthful with their therapists. If a patient is harboring violent thoughts, he or she may feel uncomfortable sharing them with a therapist for fear of facing legal repercussions. Some might argue that in doing so, therapists are giving up the safe relationships that they must have with their patients, ultimately relinquishing the ability to treat violent tendencies in patients that are too afraid to open up.

Despite these controversial issues in the study of mental health, I have no doubt that the field of psychiatry will continue to develop with progress in neurological understanding. It is the most recent and unestablished form of medicine today, and is thus bound to be met with obstacles and scrutiny. Yet the prevalence of mental disorders can no longer be ignored in society. The association between violent behavior, such as school shootings, and individuals with psychiatric disorders has truly brought mental health to the forefront of public attention as a legitimate medical issue. The potential for corruption and manipulation in psychiatry, though worrisome, does not overshadow the need for people with impairing mental illnesses to receive proper treatment. In this sense, psychiatry is one of the fundamental measures of preventing criminal acts and should be widely developed rather than suppressed.

In this paper, I have therefore outlined the crucial elements of psychiatry from diagnosis and brain structure, to the various forms of treatment, culminating in a final discussion of controversies surrounding the relatively new practice. In doing so, I hope to have presented a comprehensive understanding of the mysterious yet growing field of psychiatry. In a technological age of unprecedented human interconnectedness, it is more important than ever to appreciate the human psyche and more *possible* than ever to do so. Thus, the science of psychiatry is truly at the developing forefront of modern-day medicine, reaching into unknown and extraordinary territories of the perplexing human mind.

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