

The Effect of Bipolar I and II on the Human Psyche

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ABSTRACT

Bipolar disorder, encompassing bipolar I and II, is a complex psychiatric condition characterized by significant mood fluctuations, including episodes of mania, hypomania, and depression. Affecting approximately 2.8% of Americans annually, with a global prevalence of 0.53%, the disorder imposes profound challenges on individuals' psychological well-being, daily functioning, and interpersonal relationships. This paper provides a comprehensive overview of the effects of Bipolar I and II on the human psyche, exploring the disorder's etiology, including genetic and environmental factors, and detailing the cognitive impairments associated with mood episodes, such as deficits in attention, memory, and decision-making. The discussion extends to the interpersonal and psychosocial challenges faced by individuals, including the impact of co-occurring mental health disorders and physical health risks, such as cardiovascular disease. Neurochemical and structural brain changes under the disorder are examined, highlighting the involvement of key regions like the prefrontal cortex, amygdala, and hippocampus. The review also addresses current diagnostic and treatment challenges, emphasizing the importance of accurate diagnosis, personalized medication, and psychotherapeutic interventions. Future research directions, including personalized medicine, neuroimaging advances, and the integration of digital health tools to enhance diagnosis, treatment, and overall quality of life for individuals with bipolar disorder are covered as well.

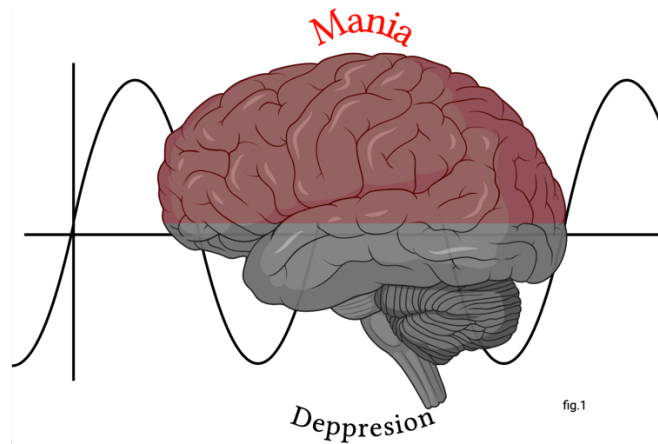
Introduction

Overview of Bipolar Disorder

Bipolar disorder, formerly known as manic depression disorder, is a mental illness that includes unusual shifts in mood, activity levels, energy, and concentration, making it difficult to carry out day-to-day tasks, go to work or school, and maintain relationships. Bipolar disorder affects over 2.8% of Americans each year with a lifetime prevalence of 4.4% (Bipolar Disorder, 2024). According to the World Health Organization in 2019, 40 million people, or 0.53% of the world, were living with bipolar disorder worldwide, approximately 1 out of 150 people. (Bipolar disorder, 2024)

Importance of Understanding its Effects on the Human Psyche

Understanding the effects of bipolar I and II, on the mind is extremely important for a variety of reasons. One key reason is that accurate diagnosis is essential for providing treatment. Recognizing how different types of bipolar disorder impact a person's state helps ensure that doctors can give the diagnosis and patients receive appropriate care whether through specific medications like psychotropics and antipsychotics or established psychotherapy techniques. Moreover, grasping the effects of bipolar I and II is crucial for building a support system involving loved ones and community services. These support networks play a role in helping individuals navigate their circumstances. This comprehensive understanding enables healthcare providers to address the emotional needs of patients. By understanding how bipolar disorder affects the psyche researchers can delve deeper into health studies guiding society toward a brighter future, with improved well-being.



Understanding Bipolar Disorder

Definition and Classification (Bipolar 1 vs. Bipolar 2)

Bipolar disorder is a psychiatric mood disorder that alternates episodes of mania and depression. There are multiple different types of bipolar disorder however the two most common are bipolar 1 and bipolar II. Bipolar I is classified by episodes of mania lasting at least seven days, for most of each day, or by severe symptoms of mania that cause a person to require immediate medical attention. Depressive episodes occur as well for at least 2 weeks, however, episodes of depression can include both depressive and manic symptoms. Bipolar II, often said to be a less extreme version of bipolar I, is categorized by a mix of depressive and hypomanic episodes (National Institute of Mental Health, 2024).

Etiology

Bipolar disorder is caused by a multitude of factors including genetic and epigenetic. Genetic research has identified multiple points associated with an increased risk of bipolar disorder, identifying hereditary as a part. However, genetic mechanisms remain complex, as no single gene dictates the disorder. Epigenetic factors complicate the picture further by affecting gene expression without altering the underlying DNA sequence. Environmental stressors, such as childhood trauma or abuse, can cause epigenetic changes that modify gene activity, influencing the chances of bipolar disorder. As further research and studies are conducted hopefully the etiology of bipolar disorder will be more clear (de Pablo, 2023).

Symptoms and Diagnostic Criteria

Bipolar I disorder is characterized by the presence of at least one manic episode which may come after or before a hypomanic or major depressive episode. A manic episode is characterized by a period of abnormal elevated, or irritable mood and an increase in activity or energy lasting at least seven consecutive days unless for hospitalization in which any duration applies, additionally at least three of the following symptoms must be present: inflated self-esteem, less need for sleep, more talkative, racing thoughts, distractibility, increased goal-directed activity, or excessive involvement in risky activities (de Pablo, 2023.)

Bipolar I disorder also requires a major depressive episode involving five or more of the following symptoms for at least two weeks: depressed mood, anhedonia, significant weight change, insomnia or hypersomnia, psychomotor

agitation or retardation, fatigue, feelings of worthlessness or excessive guilt, decreased concentration, and recurrent thoughts of death or suicide. One of the symptoms must be either depressed mood or anhedonia (de Pablo, 2023.)

Bipolar II disorder requires at least one hypomanic episode and one major depressive episode. A hypomanic episode involves a period of elevated or irritable mood and increased activity or energy lasting at least four days. During that time at least three symptoms must be present: inflated self-esteem, less need for sleep, more talkative, racing thoughts, distractibility, increased goal-directed activity, or excessive involvement in risky activities (de Pablo, 2023.)

Cognitive Impairment During Episodes

Attention, Memory, and Decision Making

During both manic and depressive states there are significant drops in attention, memory, and decision-making. These cognitive impairments even persist into euthymia, a state in which the individual is neither manic or depressive, especially in those with significant psychosocial problems even when mental symptoms are controlled. Attention deficits can lead to difficulty in organizing and processing information, whereas memory impairment, especially in working memory, hinders the ability to store information. Decision-making is also difficult, leading to an increase in poor choices and risk-taking behaviors. People with bipolar disorder can also find social interaction very difficult. Failure to recall thoughts and memories can lead to misunderstandings and poor communication with friends, family, and colleagues. These cognitive impairments can make individuals seem untrustworthy or undesired, making social interactions more difficult and leading to isolation (Emily & Levy, 2011.)

Interpersonal Challenges

Bipolar disorder impairs psychosocial development, affects educational, occupational, and interpersonal development, and impairs personality development. Recurrent mood episodes and hospitalizations lead to inconsistencies in life courses, whereas symptoms can impede reintegration into social demands. The occurrence of psychosis and substance abuse further compromises development, reducing the likelihood of achieving psychosocial adjustment. Collectively, these factors directly influence interpersonal relationships and social integration, complicating both the cognitive and social functioning of individuals with BD (Emily & Levy, 2011.)

Co-Occurring Mental Health Disorders

Many individuals with bipolar disorder also have psychiatric comorbidities that make diagnosis and treatment difficult. Common co-occurring disorders include anxiety, Attention Deficit Hyperactivity Disorder (ADHD), substance use disorders, and eating disorders. These disorders can even worsen the symptoms of bipolar disorder and make it more difficult to manage. In addition to these, some individuals when experiencing severe manic or depressive episodes may experience psychotic symptoms such as delusions or hallucinations. These psychotic symptoms often coincide with the person's extreme state of mind. For example, during a depressive episode, a person may think they are financially ruined, whereas, during a manic episode, a person may believe that he or she is extremely wealthy and powerful. The comorbidities accompanying bipolar disorder require careful evaluation over time and the consideration of an individual's family history for accurate diagnosis and effective treatment planning (National Institutes of Health, 2022.)

Cardiovascular Risks, Metabolic Syndrome

People with bipolar disorder died of Cardiovascular disease approximately 10 years earlier than the general population. Over one-third (38%) of all deaths in people with bipolar disorder were caused by cardiovascular problems and nearly half (44%) by other somatic diseases, whereas suicide and other external causes accounted for less than a fifth of all deaths (18%) (Rossom et al, 2022.)

Neurochemical Effects

Multiple major brain regions are affected by bipolar disorder, causing mood swings and behavioral changes that are characteristic of the disorder. The prefrontal cortex, the part that controls decision-making and emotional control, shows reduced activity during depressive states as well as impaired judgment and emotional regulation. The amygdala, used for processing emotions, becomes overactive during manic episodes, causing heightened and accelerated emotional responses, while its function may be impaired during depression (Manji et al, 2003.) The hippocampus, which is used for memory and cognitive processing, exhibits abnormalities, contributing to manic and depressive episodes. The anterior cingulate cortex (ACC) and the basal ganglia, which play an important role in emotional regulation, decision-making, and motor control, also exhibit irregularities during emotional instability and cognitive changes. The thalamus, which regulates emotional and physical signals and affects mood is also affected, contributing to the disruption of sleep patterns and circadian rhythms seen in bipolar disorder. Along with parts of the brain, some evidence suggests that bipolar disorder may affect levels of dopamine, serotonin, and norepinephrine. For example, high levels of noradrenaline can cause depression, while low levels can cause depression. Other neurotransmitters that may be affected include glutamate, an excitatory neurotransmitter that causes neurons to fire (Clark & Sahakian, 2008.)

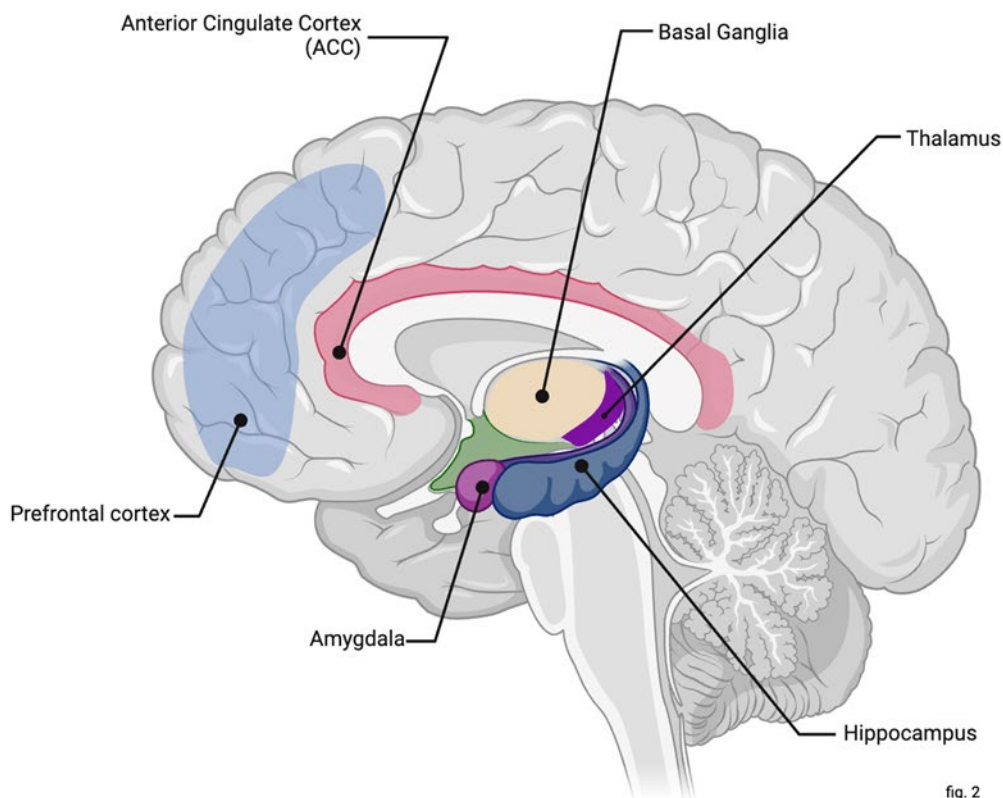


fig. 2

Approaches and Challenges in Diagnosis

Treatment for bipolar disorder aims to lessen the impact and frequency of depressive and manic episodes helping individuals maintain stable and fulfilling lives. A common approach involves a combination of treatments including mood-stabilizing medications such as lithium, antiepileptics, and daily antipsychotics to manage mood swings and severe symptoms over time. Early identification of symptoms and triggers is crucial for intervention through medication adjustments. Cognitive therapies such as CBT psychoeducation and family therapy work alongside medications to support individuals in coping with bipolar disorder enhancing relationships and increasing insight into their condition. Lifestyle changes like exercise, a balanced diet, and sufficient sleep play a major role in managing bipolar disorder effectively. While many patients can be managed outside a hospital setting, severe cases may necessitate hospitalization for safety concerns. Special consideration must be given to women with bipolar disorder during pregnancy due to the risks posed by certain medications on the unborn child. In essence, a tailored treatment plan that meets the individual's needs is crucial for the successful management of bipolar disorder (United Kingdom National Health Service, 2023.)

The frequent misdiagnosis of symptoms with other mental illnesses such as ADHD and schizophrenia often complicates the diagnosis of bipolar disorder. Many individuals experience hypomania, a mild form of mania, which is easy to ignore because it usually does not require hospitalization and may even be considered normal, especially in different cultures. Furthermore, remembering details about mood swings can be difficult for those affected, and feelings of shame can suppress symptoms altogether. Symptoms from co-occurring conditions such as Autism Spectrum Disorder (ASD) may be misrepresented which further complicates diagnosis. To improve diagnosing accuracy, individuals can document mood changes and provide a detailed history of past treatments (United Kingdom National Health Service, 2023.)

Future Directions in Research and Treatment

In the field of bipolar disorder research and treatment, upcoming efforts will most likely center around medicine. This approach involves customizing treatments based on a person's genetics, biological characteristics, and environmental influences. Progress in neuroimaging and biomarker discovery could enhance the speed and precision of diagnosing the condition. Moreover, there is a rising curiosity about how digital health resources, like applications and wearable gadgets, can track symptoms in time and offer prompt interventions. Research may also expand on understanding the impact of lifestyle factors, such as diet and sleep, on bipolar disorder, potentially leading to new holistic treatment approaches.

Conclusion

Bipolar disorder, both type I or II, presents challenges for individuals by affecting mood thinking processes and overall quality of life. The complex nature of the disorder influenced by environmental and neurobiological factors underscores the importance of diagnosis and tailored treatment approaches. Understanding the nuances of the disorder and the struggles associated with manic episodes is crucial for delivering effective care and support. Ongoing advancements in research, brain imaging technology, and digital tools offer hope for better diagnosis and treatment outcomes. Exploring lifestyle influences is predicted to contribute to developing treatment strategies that enhance the well-being of those living with Bipolar Disorder.

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References

- Bipolar disorder*. (2024, July 8). World Health Organization (WHO). Retrieved August 28, 2024, from <https://www.who.int/news-room/fact-sheets/detail/bipolar-disorder>
- Bipolar Disorder - National Institute of Mental Health (NIMH)*. (n.d.). National Institute of Mental Health. Retrieved August 26, 2024, from <https://www.nimh.nih.gov/health/statistics/bipolar-disorder>
- Clark, L., & Sahakian, B. J. (2008). Cognitive neuroscience and brain imaging in bipolar disorder. *Dialogues in clinical neuroscience*, 10(2), 153–163. <https://doi.org/10.31887/DCNS.2008.10.2/lclark>
- de Pablo, S. (2023, February 20). *Bipolar Disorder - StatPearls*. NCBI. Retrieved August 28, 2024, from <https://www.ncbi.nlm.nih.gov/books/NBK558998/>
- Emily, M., & Levy, B. (2011). *Functional Outcome in Bipolar Disorder: The Big Picture*. NCBI. Retrieved August 28, 2024, from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3180778/>
- Manji, H. K., Quiroz, J. A., Payne, J. L., Singh, J., Lopes, B. P., Viegas, J. S., & Zarate, C. A. (2003). The underlying neurobiology of bipolar disorder. *World psychiatry : official journal of the World Psychiatric Association (WPA)*, 2(3), 136–146.
- National Institute of Mental Health. (2024, February). *Bipolar Disorder*. Retrieved August 28, 2024, from <https://www.nimh.nih.gov/health/topics/bipolar-disorder?sa=D>
- National Institutes of Health. (2022). *Bipolar Disorder - National Institute of Mental Health (NIMH)*. National Institute of Mental Health. Retrieved August 28, 2024, from <https://www.nimh.nih.gov/health/publications/bipolar-disorder>
- Rossom, R. C., Hooker, S. A., O'Connor, P. J., Crain, A. L., & Sperl-Hillen, J. M. (2022, March 9). *Cardiovascular Risk for Patients With and Without Schizophrenia, Schizoaffective Disorder, or Bipolar Disorder*. *Journal of the American Heart Association* logo. Retrieved August 28, 2024, from <https://www.ahajournals.org/doi/10.1161/JAHA.121.021444>
- United Kingdom National Health Service. (2023, January 2). *Treatment - Bipolar disorder*. NHS. Retrieved August 28, 2024, from <https://www.nhs.uk/mental-health/conditions/bipolar-disorder/treatment/>