A Glimpse to Understand The "Psycho" —bipolar disorder

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Abstract: Bipolar disorder is an emotional disorder that results in extreme mood swings. It includes three main symptoms which are mania, hypomania and depression. Patients will feel overexcited in the mania episode; over confident in the hypomania episode; upset and pessimistic in the depression episode. This has brought significant influence to their daily life. There is still a lot of research needed to understand bipolar disorder, and there are currently no identified factors which directly cause bipolar disorder. However, there are three factors that may increase the risk of bipolar disorder: genetics, brain structure and age. For treatment, typical and atypical antipsychotics are prescribed to treat both mania and depression.

1. Introduction:

Bipolar Disorder, previously referred to as manic depression, is an emotional disorder that results in extreme mood swings.As show in Table 1, it includes both overexcited emotion, mania or hypomania, and gloomy emotion, depression. When people are under mania, they will feel overjoyed, full of energy and excited. They do not want to sleep or eat and therefore their daily schedule is affected. This may seem quite positive, but it is not as simple as stated. Overexcitement can lead to severe effects, for instance, patients become irritable and experience illogical thoughts which may lead to potentially harmful actions. On the other hand, hypomania is shorter in time and are less extreme than mania. When your moods shift to hypomania, you may feel euphoric, energetic, and/or irritable. These mood swings can interfere with your daily activities including sleeping, working, and thinking. On the other extreme ends, in the period of depressive episodes, it will lead to loss of interest in daily events. Patients will feel sad, hopeless, or irritable most of the time. They will be in self-doubt and pessimistic about everything. In the worst-case scenario, they will have suicidal thoughts. Yet, that is not the worst of all. For some patients, they will be in a mixed state, which means they will experience symptoms of mania, hypomania, and depression together. The disorder affects people worldwide, and it is very serious because people who are influenced by the disorder fail to lead a normal life. They cannot work or have sufficient rest. (*Bipolar Disorder - Symptoms and Causes - Mayo Clinic*, n.d.) The lifelong prevalence of bipolar disorder, or manic-depressive illness (MDI), including subsyndromal forms in the United States has been noted to range from 0.9% to 2.1%. (Bipolar Disorder: Practice Essentials, Background, Pathophysiology, 2021)

Table 1: The manifestation of bipolar disorder across different emotional states

Symptoms of a Manic Episode	Symptoms of a Depressive Episode	Symptoms of a Hypomanic Episode
Feel overexcited or extremely irritable or touchy	Feel very depressed, sad, or anxious	Have a happier mood than usual
Feel jumpy or stressed, hyperactive	Feel slowed down or restless	More irritable or act in a rude behavior
Have racing thoughts	Experience difficulty to think or concentrate, or become indecisive	Feel overconfident
Decreased need for sleep	Have difficulty falling asleep, waking up too early, or sleeping too much	Feeling the need to sleep less than usual
Be talkative in different ways (“flight of ideas”)	Lose interest or feel no pleasure in all — or almost all — activities	More active or energetic than usual for no clear reason
Excessive appetite for food, drinking, sex, or other pleasurable activities or have a loss of appetite	Reluctant to speak or have nothing to talk about	Be more social and talkative, and have a stronger sexual desire than usual
Have unlimited energy	Feel worthless or guilty	Feeling the need to sleep less than usual
Feel like they are unusually important, talented, or powerful	Unable to do even simple things	
Awful decisions -- for example, going on shopping sprees, taking sexual risks or making stupid investments	Think about, plan, or attempt suicide	

(NIMH » bipolar disorder, n.d.-a), (bipolar disorder - Symptoms and Causes - Mayo Clinic, n.d.), (NIMH » bipolar disorder, n.d.-b), (Mania vs. Hypomania: Differences, Similarities, and Treatments, n.d.)

2. Types of bipolar and its symptoms

At present, there are two most common types of bipolar disorder: bipolar I disorder (BPI) and bipolar II disorder (BPII). As show in Table 2, The symptoms are different in different types of bipolar disorder, but in general, the patients experience mania, hypomania, and depression. (Bipolar Disorder - Symptoms and Causes - Mayo Clinic, n.d.) Bipolar I disorder requires symptoms that meet all the criteria for a manic episode. A manic person will show symptoms of mania but be able to continue with day-to-day responsibilities and may even see improvements in job performance or other goal-oriented activities. However, the elevated mood is not severe enough to require hospitalization or significant disruption at home or work. Patients don't have to experience depression to be diagnosed with bipolar I, but many people diagnosed with bipolar I experience both mood episodes. (The Difference Between Bipolar Disorder I and II, n.d.-a) Bipolar II disorder patients would experience

both a depressive episode and hypomania. (The Difference Between Bipolar Disorder I and II, n.d.-a)

Apart from these two, there are two other categories called “Cyclothymic disorder” and “Other types”. Cyclothymic disorder, also called cyclothymia, refers to persistent hypomanic and depressive symptoms that are not strong enough or last long enough to be defined as a hypomanic or depressive episode. (NIMH » bipolar disorder, n.d.-a) Symptoms (alternating "highs" and "lows") are present at least 50% of the time and last for at least 2 years. They disappear within 2 months and are not due to chemical abuse or medical conditions. In addition, cyclothymia has caused severe pain or impairment of daily functions, but not severe enough to qualify for major depression or bipolar disorder. (Cyclothymia: Symptoms, Causes, Tests and Treatment, n.d.) Other Specified and Unspecified Bipolar and Related Disorders is a category of DSM-5 diagnoses that applies to individuals who have symptoms characteristic of a bipolar and related disorder (e.g. - bipolar I, bipolar II, cyclothymic disorder) but do not meet the full criteria for any of them. (Other Specified Bipolar and Related Disorders - PsychDB, n.d.) It is also called bipolar disorder not otherwise specified (NOS). There are no specific criteria for when a doctor should make a diagnosis of bipolar NOS. That being said, the Diagnostic and Statistical Manual of Mental Disorders (DSM) published by the American Psychological Association (APA) does provide appropriate examples, as follow: “

- The person has experienced alternating manic or depressive symptoms, but the episodes are too short to meet the criteria for inclusion.
- The person has experienced both hypomania and depression, but the episodes are too short to qualify as a cyclothymic disorder.
- The person may have had multiple episodes of hypomania but no depressive episode.
- The person has had a manic or mixed episode after having been previously diagnosed with either schizophrenia or a psychotic episode.
- The person meets the criteria for bipolar disorder, but the doctor is concerned that the symptoms may be caused by recreational drugs, alcohol, or a neurological disorder.” (Bipolar Disorder Not Otherwise Specified (NOS), n.d.)

For example, if a patient has experienced manic and depressive symptoms for several years, but does not reach the requirements for a full manic or depressive episode, then his or her doctor may diagnose the patient with cyclothymic disorder. Some people with bipolar disorder also meet the criteria for rapid cycling, which requires an episode of depression, mania, or hypomania within 12 months. Both types of bipolar disorder can occur in cycles. (The Difference Between Bipolar Disorder I and II, n.d.-a)

Table 2: Comparisons between Bipolar Disorder I and Bipolar Disorder II

Symptoms of bipolar Disorder I	**Symptoms of bipolar Disorder II**
Increase self-esteem or grandiosity	Depressed, accompanied by a feeling of guilt or uselessness
Reduced need for sleep	Changes in diet
Increases target direct activity, energy levels or irritability, reduced need for sleep	Fatigue or lack of energy, changes in sleep
Spontaneous racing thoughts for excitement	Loss of enjoyment of activities once enjoyed
Poor attention	Have trouble concentrating or slowing down
Increased risk-taking behavior (spending money, risky sex, etc.)	Suicidal thoughts

(The Difference Between Bipolar Disorder I and II, n.d.-b)

3. Risks which contribute to the disease

The exact cause of bipolar disorder is unknown. However, current research suggests there is no single cause and the following factors (*NIMH » bipolar disorder*, n.d.-a), may contribute:

1. Genetics -- If a child has a parent or sibling with bipolar disorder, the chances of the child developing bipolar disorder increased. However, a child from a family with a history of bipolar disorder may never develop the disorder. Studies of identical twins have found that even if one has the disease, the other may not.
2. Brain structure and function -- Brain scans cannot diagnose bipolar disorder, but researchers have found subtle differences in the average size or activation of some brain structures in people with bipolar disorder. (*Bipolar Disorder | NAMI: National Alliance on Mental Illness*, n.d.)
3. Age -- The age range of bipolar disorder is from childhood to 50 years, with a mean age of approximately 21 years. Most cases of bipolar disorder commence when individuals are aged 15–19 years. The second most frequent age range of onset is 20–24 years. (In What Age Groups Is the Onset of Bipolar Affective Disorder (Manic-Depressive Illness) Most Likely, n.d.)

There are also other factors that may increase the risk of developing bipolar disorder or act as a trigger for the first episode. For instance, periods of high stress, such as the death of a loved one or other traumatic event, drug or alcohol abuse. If left untreated, bipolar disorder can lead to many complications that affect all aspects of life. Some conditions which can make bipolar symptoms worse or reduce the effectiveness of treatment. For example: anxiety,eating disorders,attention deficit/hyperactivity disorder (ADHD) Attention deficit/neurosis of consciousness, alcohol or drug problems, physical health problems such as heart disease, thyroid problems, headaches or obesity,and the list goes on. (*Bipolar Disorder - Symptoms and Causes - Mayo Clinic*, n.d.) Patients with bipolar disorder, depression and other mental disorders often resort to self-harming behaviors to cope with overwhelming emotions when they feel extreme sadness, despair, anxiety or confusion. In severe cases, suicidal thoughts occur. 25% to 50% of people with bipolar disorder had attempted suicide and 15% lost their lives. (Bipolar Disorder: Practice Essentials, Background, Pathophysiology, n.d.)

4. Drug to treat the disease: antipsychotic

Antipsychotics are drugs used to treat psychotic symptoms, such as delusions (for example, hearing voices), hallucinations, paranoia, or confusion. They are used to treat schizophrenia, major depression, and severe anxiety. Antipsychotics may also be used to stabilize manic episodes in people with bipolar disorder. (List of Antipsychotics - Generics Only - Drugs.Com, n.d.-a) The main mode of action is to block dopamine receptors. They may also affect downstream activities of other neurotransmitters. (List of Antipsychotics - Generics Only - Drugs.Com, n.d.-b)

Antipsychotics fall into two categories:

1. Typical antipsychotics, or first-generation antipsychotics. Haldol (haloperidol) and Thorazine (chlorpromazine) are the best-known typical antipsychotics.
2. Atypical antipsychotics, or second-generation antipsychotics. These new drugs were approved for use in the 1990s. Clozapine, asenapine, olanzapine, quetiapine, paliperidone and so on are atypical antipsychotic drugs.

(Typical and Atypical Antipsychotic Drugs, n.d.)

As mentioned, Haldol and Thorazine are best-known typical antipsychotics. They reduce dopamine activity by preventing dopamine from binding to the dopamine D2 receptors. (Haldol (Haloperidol) - Huntington's Disease News, n.d.) Dopamine is one of several neurotransmitters closely associated with mood and pleasure.(Belujon & Grace, 2017) Low dopamine levels will lead to depression.(Carhart-Harris & Nutt, 2017)The dopaminergic system of the brain is believed to play a major role in the regulation of motor, cognitive and neuroendocrine functions as well as the pathogenesis of various pathological conditions, including affective disorders and drug addiction.(KS, 1998) Unfortunately, these traditional antipsychotics also block D2 receptors in regions outside the mesolimbic pathway. This can lead to adverse effects associated with the disease.

Side effects of blocking D2 receptors can include tremors, inner restlessness, muscle cramps, sexual dysfunction and, in rare cases, tardrunken dyskinesia, a condition that causes repetitive, unconscious, aimless movements. (How Antidepressant and Antipsychotic Medications Work | Here to Help, n.d.)

Atypical antipsychotic drugs block dopamine receptors and 5-HT2A serotonin receptors. Unlike dopamine which brings pleasure and promotes happiness, serotonin acts more as a stabiliser. When serotonin levels are low, it can lead to mood, sleep and digestive problems. (Carhart-Harris & Nutt, 2017) In the treatment of depression, selective serotonin reuptake inhibitors (SSRIs) are the most commonly used antidepressants. (Celada et al., 2004) This combination of D2 and 5HT2A receptors is believed to treat both positive and negative symptoms. Pharmacological and genetic studies have highlighted the important role of 5-HT2A-RS in specific central nervous system pathologies such as depression and epilepsy. Like all drugs, antipsychotics have side effects. Side effects associated with atypical antipsychotics include weight gain, diabetes, and lipid disorders which are more commonly associated with clozapine and olanzapine. (How Antidepressant and Antipsychotic Medications Work | Here to Help, n.d.)

5. Conclusion

Bipolar disorder is a mental disease that is common around the world so it may happen to anyone around us. While the science community has been playing their role to understand the disease to relieve the symptoms or potentially, to cure the disease, the general public should play a role in helping the sick. We should not discriminate against them but be more patient and care about them. We should be supportive to the patients and help them whenever needed and be aware of our words,for they are more powerful than we have imagined.

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