Using magnetic resonance imaging (MRI) may be an effective way to diagnose mental illnesses, such as bipolar disorder, according to new research.

In a new study, researchers from the Icahn School of Medicine at Mount Sinai were able to correctly distinguish bipolar patients from healthy individuals based on their brain scans alone most, but not all, of the time.

"Bipolar disorder affects patients’ ability to regulate their emotions successfully, which puts them at great disadvantage in their lives," said Sophia Frangou, professor of psychiatry at Mount Sinai Hospital in New York.

"The situation is made worse by unacceptably long delays, sometimes of up to 10 years, in making the correct diagnosis. Bipolar disorder may be easily misdiagnosed for other disorders, such as depression or schizophrenia."

Frangou said that is why bipolar disorder ranks among the top 10 disorders worldwide in terms of significant disability.

Frangou and her team used MRI to scan the brains of people with bipolar disorder and of healthy individuals. Using advanced computational models, they were successful in correctly separating people with bipolar disorder from healthy individuals with 73 percent accuracy using brain imaging scans alone.

They replicated their finding in a separate group of patients and healthy individuals and found a 72 percent accuracy rate.

Bipolar disorder is a serious mental illness characterized by severe and debilitating mood swings between depression and mania, which is marked a persistent elevated, expansive or irritated mood. This expansive, manic mood is often marked by grandiosity, decreased need for sleep, racing thoughts, increased distractibility, and pressured speech.

At present, mental disorders like bipolar disorder are diagnosed through self-report and observation by others by a set of scientifically-defined symptoms.

"This approach does not undermine the importance of rigorous clinical assessment and the importance of building relationships with patients, but provides biological justification for the type of diagnosis made," said Frangou.

"However, diagnostic imaging for psychiatry is still under investigation and not ready for widespread use.

"Nonetheless, our results, together with those from other labs, are a harbinger of a major shift in the way we approach diagnosis in psychiatry."

The study was published in the journal Psychological Medicine.

Source: The Mount Sinai Hospital/Mount Sinai School of Medicine