

Use of probiotics in treating psychiatric and neurological disorders

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Madam, The gut-brain axis is a bidirectional pathway through which the central nervous system and gut microbiota communicate. Metabolites from the gut microbiota can interact with ANS gut synapses, similarly, gut physiology can be controlled by the ANS. Visceral sensory signals from the gut travel to the CNS via the vagus nerve and can influence mood changes. Any alterations in this complex pathway can lead to the development of several gastrointestinal, psychiatric, and neurological disorders that include depression, anxiety, Alzheimer's disease and Parkinson's disorder.^{1,2} As the relationship between psychiatric and gastrointestinal symptoms becomes well-established with 60% of patients with gastroenterological complaints having psychiatric origins,³ the question arises of whether it would be beneficial to focus on the gut microbiota and use probiotics to treat psychiatric and neurological ailments.

Recent research has opened a new door to targeting the gut microbiota to treat disorders such as depression, anxiety, Alzheimer's disease, Parkinson's disease, and autism spectrum disorder.¹ The effect of modifying gut microbiota to treat psychiatric illnesses that include depression, anxiety, and schizophrenia has been studied, showing that the use of probiotics can alleviate depression but has no effect on schizophrenia. The gut microbiota influences the hypothalamic-pituitary-adrenal axis, allowing probiotics to alter the stress response of cortisol; however, sufficient data is not available to comment on the effect of probiotics on anxiety.⁴ Furthermore, the scope of probiotics seems to extend beyond mood disorders to

relieving symptoms of neurological disorders that include Parkinson's, migraine and epilepsy.⁵

The close relationship of gastrointestinal and neuropsychiatric health often results in disorders of both systems appearing concomitantly and GIT manifestations are often dismissed as being caused by the psychiatric complain; however, we may look at the other side of the picture which is that gastrointestinal dysbiosis may be a cause or an exacerbating factor of the neuropsychiatric symptoms in which case probiotics can be a reliable treatment. More evidence needs to be obtained on their effectiveness and whether they may be used as stand-alone or along with other medications.

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