

Short note on Probiotics for Mental health and Anxiety

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Abstract

Hippocrates once said: "let food be thy medicine and medicine be thy food. Recent research in clinical nutrition agrees with Hippocrates opinion about food and health and as general saying 'Tell me your food I will tell you who you are'. It is obvious that food directly influence physical as well as mental health and thereby influence the physiology and behavioural aspects. Research showed that probiotics are used for mental health benefits to host. FAO/WHO (2002) defined probiotics as "living bacteria that, which when administered in adequate amounts, confer a health benefit to the host". Probiotics for Mental health research is on way but specific strain needs to be identified.

Keywords: Mental anxiety; Mental ability; Mental status; Probiotics

Note on Mental Health

Elaborate study on the application of probiotics on their action in preventing infections, treating several metabolic disorders, improving digestion and others [1-3]. Recently, probiotics study focussed on enteric neuroscience research. This suggests that probiotics could be effectively used to treat depression, anxiety and other psychological disorders [4]. The gastrointestinal tract is sensitive to both psychological and physical stress. Stress and stress mediators affect several physiological functions of gastrointestinal tract such as dysfunctioning of intestinal barrier, mucosal permeability, visceral sensitivity and altered production of neuro endocrine factors resulting in the imbalance of gut microbial system and weakening the immunity of the host, furthermore enhancing the symptoms of depression and other psychiatric illness [5-8]. Generally in depressed patients, stress induced hypothalamic-pituitary-adrenal (HPA) alternations such as elevated levels of cortisol in plasma and corticotropin releasing factor in cerebrospinal fluid have been found [9] in addition to cortisol (a steroid hormone) [9]. Another peptide hormone corticotropin takes part in stress response mainly stimulating the pituitary synthesis of Adrenocorticotrophic hormone (ACTH) [10-12], possibility be due to vagal sensory nerve fibre mediated leading to anxiety and depression. In addition, norepinephrine showed to enhance the proliferation of *Escherichia coli*, *Yersinia enterocolitica* and *Pseudomonas aeruginosa* in the gut [6]. Further, these microbial infections result in the release of proinflammatory cytokines that are known to activate hypothalamic pituitary adrenal axis Matalka et al. [13] and release of cyclooxygenase-2 and enhance the inflammation [14]. There are several psychotherapeutic strategies been suggested for the prevention and management of depressive mood disorders. In order to overcome the gap in existing therapies and to obtain better results, combination of one or more of these therapeutic strategies have needs to be practiced. Therefore, medical community is looking for safe, effective and economic treatment strategy to fight depressive mood disorders. In this context, probiotics could be useful as safe and natural adjuvant therapeutic strategy in combination with existing therapies that would alleviate the burden of depressed patients. The commensal and probiotic bacteria could be useful in altering gut-microbe-brain axis communication, influencing the behaviour of host. Considering the probiotics potential for good health, live probiotic formulation or products with their metabolites could be suggestive for the prevention and management of depression. Lactic acid bacteria fermented dairy products such as acidophilus milk, yoghurt, kefir, cheese, fermented vegetable and fruits, sauerkraut, olives, kimchi and fermented cereal beverages, perhaps confer effective protection for of both psychiatric and non-psychiatric mediated mood disorders. Although, there

are several probiotic products to treat nutrient deficiency and malabsorption, and pathogenic infections, as health care products and functional foods, specific probiotics for mood disorders or for mental health is unavailable. The out come of the research is only useful when it would implement and reach the common man. Therefore, further intense research is needed to screen for and development of probiotic formulations for mental health.

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