

Short note on Probiotics for Mental health and Anxiety

Devaraja Gayathri*

Department of Microbiology, Davangere University, Shivangangothri, India

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.

References

1. Gayathri D, Rashmi BS (2014) Development of celiac disease; pathogenesis and strategies to control; a molecular approach. *Journal of Nutrition & Food Sciences* 4: 310.
2. Asha, Gayathri D (2012) Antagonistic properties of *Lactobacillus Fermentum* and *L Plantarum* with potential intestinal pathogens; purification and characterization of bacteriocin isolated from curd and fecal samples advance. *Journal of Food Science and Technology* 4: 265-269.
3. Gill HS (1998) Stimulation of the immune system by lactic cultures. *International Dairy Journal* 8: 535-544.
4. Lyte M (2011) Probiotics function mechanistically as delivery vehicles for neuroactive compounds: Microbial endocrinology in the design and use of probiotics. *Bio Essays* 33: 574-581.
5. Konturek SJ, Konturek JW, Pawlik T, Brzozowski T (2004) Braingut axis and its role in the control of food intake. *J Physiol Pharmacol* 55: 137-154.
6. Lyte M, Vulchanova L, Brown DR (2011) Stress at the intestinal surface: catecholamines and mucosa-bacteria interactions. *Cell and Tissue Research* 343: 23-32.
7. Lyte M, Ernst S (1992) Catecholamine induced growth of gram negative bacteria. *Life Sciences* 50: 203-212.
8. Soderholm JD, Perdue MH (2001) Stress and gastrointestinal tract II stress and intestinal barrier function. *Am J Physiol Gastrointest Liver Physiol* 280: G7-G13.
9. Arborelius L, Owens MJ, Plotsky PM, Nemeroff CB (1999) The role of corticotropin-releasing factor in depression and anxiety disorders. *Journal of Endocrinology* 160: 1-12.
10. Chyun YS, Kream BE, Raisz LG (1984) Cortisol decreases bone formation by inhibiting periosteal cell proliferation. *Endocrinology* 114: 477-480.

*Corresponding author: Devaraja Gayathri, Department of Microbiology, Davangere University, Shivangangothri, India, E-mail: gayathridevaraja@gmail.com

Received June 14, 2016; Accepted June 16, 2016; Published June 21, 2016

Citation: Gayathri D (2016) Short Note on Mental Health: Anxiety and Probiotics. *Matern Pediatr Nutr* 2: 114. doi:10.4172/mpn.1000114

Copyright: © 2016 Gayathri D. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

11. Morton IK, Hall JM (2012) Concise dictionary of pharmacological agents: properties and synonyms. Springer Science & Business Media, pp: 84.
12. Taché Y, Bonaz B (2007) Corticotropin-releasing factor receptors and stress-related alterations of gut motor function. *Journal of Clinical Investigation* 117: 33-40.
13. Matalka KZ, Sidki A, Abdul M, Thewaini AJ (2000) Academic stress-influence on epstein-barr virus and cytomegalovirus reactivation cortisol and prolactin. *Laboratory Medicine* 31: 163-168.
14. Elsenbruch S, Rosenberger C, Enck P, Forsting M, Schedlowski M, et al. (2010) Affective disturbances modulate the neural processing of visceral pain stimuli in irritable bowel syndrome: an fMRI study. *Gut* 59: 489-495.

Citation: Gayathri D (2016) Short Note on Mental Health: Anxiety and Probiotics. *Matern Pediatr Nutr* 2: 114. doi:[10.4172/mpn.1000114](https://doi.org/10.4172/mpn.1000114)

OMICS International: Publication Benefits & Features

Unique features:

- Increased global visibility of articles through worldwide distribution and indexing
- Showcasing recent research output in a timely and updated manner
- Special issues on the current trends of scientific research

Special features:

- 700+ Open Access Journals
- 50,000+ Editorial team
- Rapid review process
- Quality and quick editorial, review and publication processing
- Indexing at major indexing services
- Sharing Option: Social Networking Enabled
- Authors, Reviewers and Editors rewarded with online Scientific Credits
- Better discount for your subsequent articles

Submit your manuscript at: <http://www.omicsgroup.org/journals/submission>