Journal of Depression & Anxiety
ISSN: 2167-1044
Khan and Khan, J Depress Anxiety 2016, 5:1
http://dx.doi.org/10.4200/2167-1044.1000220
Review Article
Open Access

Healthy Diet a Tool to Reduce Anxiety and Depression

Sarah Khan[1] and Rafeeq Alam Khan[2]*

[1]Department of Psychology, University of Karachi, Karachi-75270, Pakistan
[2]Department of Pharmacology, University of Karachi, Karachi-75270, Pakistan

Abstract

'Let food be thy medicine and medicine be thy food' Hippocrates c. 400BC

An upsurge in the use of drugs for treating anxiety and depression has been observed worldwide. The adverse side effects of the said drugs called for a need to discover alternative approaches. Studies on nutritional therapy for anxiety and depression emerged rapidly in the last few years. Alteration in dietary habits in consultation with nutritionist may help reducing these mood disorders. Previous studies have reported several nutritional elements beneficial for mental health and some other harmful for mental health.

Keywords: Anxiety; Depression; Nutrition

Introduction

Anxiety is a subjective sense of restlessness, distress, trepidation or fearful worry along with a host of autonomic and somatic manifestations. It is a regular, emotional, rational and predictable response to real or potential danger. However, if the symptoms of anxiety are continued, illogical, erratic and/or severe and occur in the absence of stressful events or intervene with everyday events, then these are called anxiety disorders [1].

Depression is a common disorder; characterized by misery, loss of interest of desire, low self-esteem, uneasy sleep, poor appetite, feelings of tiredness and reduced concentration [2].

Presently, antidepressants are widely recognized as the favored choice to treat depression in the first instance [3], specifically selective serotonin re-uptake inhibitors are now among the most broadly prescribed [4]. A study shows that use of antidepressants had more than doubled in the last twenty years in England and other Western countries, with proof of long-term inclinations of increasing prescriptions since the mid-1970s [5,6].

The enhancing complexity of daily life in modern culture usually causes unexpected degree of anxiety and depression. Ailments affecting mood have been linked with chronic pain among patients in developing as well as developed countries [7-11]. Anxiety and depression are common psychiatric disorders, having occurrence up to 15-25% of adult population [12]. World Health Organization predicts that by the year 2020, depression will be the second prominent reason behind premature death or disability [13]. Presently, numerous therapies are used for the treatment of anxiety. Benzodiazepines have been utilized as the drugs of choice for severe anxiety and are now mostly used in the treatment of acute and chronic anxiety disorders as well as effectively in depression. However 12–15% depressive patients did not show response at all, along with their possible side effects [14]. Hence limited efficacy of present drugs raises the need for different, better-tolerated and more useful treatments.

In recent years use of dietary supplements to treat mild to moderate anxiety disorders have raised and reports have shown that negative emotional experiences are related with increase in food consumption and increase in unhealthy contents of food [15,16].

Studies have demonstrated the contribution of serotonin, melatonin and tryptophan in depression [17]. The rich sources of serotonin include tomato, banana, pineapple, plum and kiwi, while for melatonin fenugreek seeds, white and black mustard and wolfberry seeds [18-20].

Citrus fragrances are famous for their mood enhancing properties, volatile oils segregated from grapefruit *(C. Paradisi)*, lemon *(C. lemon)*, bergamot *(C. bergamia)*, lime *(C. aurantifolia)*, mandarin *(C. nobilis)* and orange *(C. aurantium)* are often used for treating anxiety [21,22]. Studies have been conducted to reveal the anti-anxiety, anti-depressant and memory boosting effects of *Citrus paradisi*, *Citrus limon* and *Punica granatum* in animals. The results showed significant decline in anxiety and depressive state of rats and significant increase in short and long term memory in mice [2,23,24]. However further studies should be conducted in this regard to identify the extent of these effects in humans.

Nutrients like zinc, folic acid, magnesium, vitamin C and vitamin B_{12} have been found to improve the symptoms of depression [25-28]. These nutrients in part have been found to improve mood by their role in the synthesis of neurotransmitters and can be attained from asparagus, beets, peas, beans, dried, soybeans, lentils, cabbage, spinach, broccoli, pumpkin seeds, almonds, barley and mushrooms [29].

Kava is a crop of Western Pacific and has anxiolytic properties. It can relax muscles, enhance mood, relieve pain and produce calming effects. Nowadays, it is often used to cure seizures and psychotic illnesses [30,31]. Kava has been found to be very useful in treating anxiety disorder, since in many double blind, placebo controlled studies kava has been found to be more effective than placebo in reducing anxiety and its impact was equivalent to standard anxiolytic drugs [30].

A review of 14 different studies revealed that people with depression have low levels of omega-3 fatty acids EPA and DHA. In this meta-analysis, investigators revealed that the blood levels of omega-3 fatty acids EPA (eicosapentaenoic acid) and DHA (docosahexaenoic acid) and total omega-3 fatty acids were expressively lower in people with depressive symptoms when compared to people without depression. At present, there isn't sufficient proof to establish that omega-3 have

***Corresponding author:** Department of Pharmacology, Faculty of Pharmacy & Pharmaceutical Sciences, University of Karachi, Karachi-75270, Pakistan, Tel: 9243173-2206; E-mail: rkhan1959@gmail.com

Received December 06, 2015; **Accepted** February 05, 2016; **Published** February 08, 2016

Citation: Khan S, Khan RA (2016) Healthy Diet a Tool to Reduce Anxiety and Depression. J Depress Anxiety 5: 220. doi:10.4200/2167-1044.1000220

an antidepressant effect. The researches regarding this are under development. However, it does show a relationship between low levels of omega-3 and low mood [31]. A more recent study confirms the beneficial effect of omega-3 fatty acids on depressive symptoms in rats [32]. The 1 gram of fish oil per day showed a significantly better outcome than the control group on all scales in depression [33].

Honey is known to be widely used for its therapeutic effects. It contains about 200 elements including fructose, glucose, amino acids, vitamins, minerals and enzymes [34]. Honey had demonstrated significant ability to reduce anxiety and strengthen motor activity in rats [26]. This might be due to presence of important flavonoid chrysin in honey [35,36], while chrysin has also been reported to improve cognitive deficits and brain damage induced by chronic cerebral hypo perfusion in rats [37].

There are several studies which reveal the impact of increased water intake on mood and physical sensations [38]. Another study shows that people not being depressed consumed the highest volume of plain water than other groups [39].

There are some foods that must be avoided in order to maintain mental health and stability, a recent study shows that intake of fairy cakes, doughnuts, hamburgers, hotdogs and pizza are linked to depression. The results disclose that consumers of fast food, compared to those who eat little or none are 51% more likely to develop depression [40].

Result of other studies shows that consumption of chocolate was linked with depression. The results indicated that eating fruit led to lower anxiety, depression, and emotional discomfort as compared to consumption of chocolate/crisps [41-43]. Another study found that chips, biscuits and chocolates results in higher stress and greater cognitive failures [38].

Discussion

It may have sounded 'mood uplifting' to know that anti-depressants need not be used and yet depression can be rooted out. Having found out a person is suffering from symptoms of depression; the general reaction is to jump to pills to 'feel happy and normal' again. The drug abuse can be fatal. Lack of knowledge can lead to other complications. The side effect may leave a person needing more medicines and the never ending cycle begins.

Learning to know when antidepressants are needed and when they are not can make a huge impact on an individual's life. Often times, ignorance and exploitation of ignorance at the hands of knowledgeable can cause a lot of damage. The matter shouldn't be taken lightly. Access to drugs ought not to be easy. Mild and moderate depression can be treated through nutritional means. Although there are several studies which reveals that various dietary elements reduces anxiety and depression but the major limitation of these studies is the lack of human evidence since most of these studies have been carried out on rats and mice. Hence there is an immense need to confirm these results in humans which can be achieved by self-motivation and strict diet plan.

In conclusion it may be said that eating right foods and avoiding over-eating of wrong ones is the key to a healthy mental and physical life.

References

1. American Psychiatric Association (2000) Diagnostic and Statistical Manual for Mental Disorders (DSM-IV-TR) Text Revision (4thedn) American Psychiatric Publishing, Arlington, VA.
2. Mallick N, Khan RA (2015) Behavioral effects of citrus paradisi in rats. Metab Brain Dis.
3. Moncrieff J, Kirsch I (2005) Efficacy of antidepressants in adults. BMJ 331: 155-157.
4. Murphy GM Jr, Kremer C, Rodrigues HE, Schatzberg AF (2003) Pharmacogenetics of antidepressant medication intolerance. Am J Psychiatry 160: 1830-1835.
5. Gunnell D, Ashby D (2004) Antidepressants and suicide: what is the balance of benefit and harm. BMJ 329: 34-38.
6. Moore M, Yuen HM, Dunn N, Mullee MA, Maskell J, et al. (2009) Explaining the rise in antidepressant prescribing: A descriptive study using the general practice research database. British Medical Journal 339: b3999.
7. Gureje O, Von Korff M, Simon GE, Gater R (1998) Persistent pain and well-being: a World Health Organization Study in Primary Care. JAMA 280: 147-151.
8. Evans DL, Charney DS, Lewis L, Golden RN, Gorman JM, et al. (2005) Mood disorders in the medically ill: Scientific review and recommendations. Biol Psychiatry 58: 175-189.
9. Gupta V, Bansal P, Kumar P, Kaur G (2010a) Pharmacopoeial standards and pharmacognostical studies of leaves of citrus paradisi Var. Foster. Res J Pharamacog Phytochem 2: 140-143.
10. Gupta V, Bansal P, Kumar P, Shri R (2010b) Anxiolytic and antidepressant activities of different extracts from citrus paradise Var. Duncan Asian. J Pharm Clin Res 3: 98-100.
11. Gupta V, Bansal P, Niazi J, Kaur G (2010c) Antianxiety activity of citrus paradisi Var. Starr by extracts. Int J Pharm Tech Res 2: 1655-1657.
12. Foyet HS, Tsala DE, Bouba AA, Hritcu L (2012) Anxiolytic and Antidepressant-Like Effects of the Aqueous Extract of Alafia multiflora Stem Barks in Rodents. Adv Pharmacol Sci 2012: 912041.
13. World Health Organization (2013) Mental Health action plan 2-13-2020: ISBN 978 92 4 150602 1: 1-45.
14. Stahl SM (2008) Stahl's Essential Psychopharmacology (3rdedn): Neuroscientific Basis and Practical Applications, Cambridge University Press, Cambridge, UK.
15. Grunberg NE, Straub RO (1992) The role of gender and taste class in the effects of stress on eating. Health Psychol 11: 97-100.
16. Greeno CG, Wing RR (1994) Stress-induced eating. Psychol Bull 115: 444-464.
17. Baldwin D, Rudge S (1995) The role of serotonin in depression and anxiety. Int Clin Psychopharmacol 9 Suppl 4: 41-45.
18. Feldman JM, Lee EM (1985) Serotonin content of foods: effect on urinary excretion of 5-hydroxyindoleacetic acid. Am J Clin Nutr 42: 639-643.
19. Manchester LC, Tan DX, Reiter RJ, Park W, Monis K, et al. (2000) High levels of melatonin in the seeds of edible plants: possible function in germ tissue protection. Life Sci 67: 3023-3029.
20. Ly D, Kang K, Choi JY, Ishihara A, Back K, et al. (2008) HPLC analysis of serotonin, tryptamine, tyramine, and the hydroxycinnamic acid amides of serotonin and tyramine in food vegetables. J Med Food 11: 385-389.
21. Komiya M, Takeuchi T, Harada E (2006) Lemon oil vapor causes an anti-stress effect via modulating the 5-HT and DA activities in mice. Behav Brain Res 172: 240-249.
22. Palazzolo E, Laudicina VA, Germana MA (2013) Current and potential use of citrus essential oils. Curr Org Chem17: 3042-3049.
23. Riaz A, Khan RA, Algahtani HA (2014) Memory boosting effect of Citrus limon, Pomegranate and their combinations. Pak J Pharm Sci 27: 1837-1840.
24. Khan RA, Riaz A (2015) Behavioral effects of Citrus limon in rats. Metab Brain Dis 30: 589-596.
25. Coppen A, Bolander-Gouaille C (2005) Treatment of depression: time to consider folic acid and vitamin B12. J Psychopharmacol 19: 59-65.
26. Amr M, El-Mogy A, Shams T, Vieira K, Lakhan SE (2013) Efficacy of vitamin C as an adjunct to fluoxetine therapy in pediatric major depressive disorder: a randomized, double-blind, placebo-controlled pilot study. Nutr J 12: 31.
27. Swardfager W, Herrmann N, McIntyre RS, Mazereeuw G, Goldberger K, et al. (2013) Potential roles of zinc in the pathophysiology and treatment of major depressive disorder. Neurosci Biobehav Rev 37: 911-929.

28. Yary T, Aazami S, Soleimannejad K (2013) Dietary intake of magnesium may modulate depression. Biol Trace Elem Res 151: 324-329.

29. Rechenberg K, Humphries D (2013) Nutritional interventions in depression and perinatal depression. Yale J Biol Med 86: 127-137.

30. Fugh-Berman A, Cott JM (1999) Dietary supplements and natural products as psychotherapeutic agents. Psychosom Med 61: 712-728.

31. Ernst E (2002) The risk-benefit profile of commonly used herbal therapies: Ginkgo, St. John's Wort, Ginseng, Echinacea, Saw Palmetto, and Kava. Ann Intern Med 136: 42-53.

32. Lin PY, Huang SY, Su KP (2010) A meta-analytic review of polyunsaturated fatty acid compositions in patients with depression. Biol Psychiatry 68: 140-147.

33. de Mello AH, Gassenferth A, Schraiber Rde B, Souza Lda R, Florentino D, et al. (2014) Effects of omega-3 on behavioral and biochemical parameters in rats submitted to chronic mild stress. Metab Brain Dis 29: 691-699.

34. American Medical Association Archives of General Psychiatry (2002) Fish oil. 59: 913-919.

35. White JW (1979) Composition of honey, A Comprehensive Survey. London: Heinemann 157-192.

36. Oyekunle OA, Ogundeji TA, Okojie AK (2011) Behavioral Modifications Related to Consumption of a Soft Adaptogen, Bee Honey, by Rats. Neurophysiology 43: 38-41.

37. Wolfman C, Viola H, Paladini A, Dajas F, Medina JH (1994) Possible anxiolytic effects of chrysin, a central benzodiazepine receptor ligand isolated from Passiflora coerulea. Pharmacology Biochemistry and Behavior 47: 1-4.

38. He XL, Wang YH, Bi MG, Du GH (2012) Chrysin improves cognitive deficits and brain damage induced by chronic cerebral hypoperfusion in rats. Eur J Pharmacol 680: 41-48.

39. Smith A, Rogers R (2014) Positive effects of healthy snack (fruit) versus unhealthy snack (chocolate/crisps) on subjective reports of mental and physical health: A preliminary intervention study, Frontiers in nutrition.

40. Tsindos PS, Itsiopoulos C, Kouris-Blazos A (2015) Investigation into water consumption and its influence on depression, memory problems and constipation in older persons. J Aging Res Clin Practice 4: 137-143.

41. Sánchez-Villegas A, Toledo E, de Irala J, Ruiz-Canela M, Pla-Vidal J, et al. (2011) Fast-food and commercial baked goods consumption and the risk of depression. Public Health Nutrition 15: 424.

42. Macht M, Mueller J (2007) Immediate effects of chocolate on experimentally induced mood states. Appetite 49: 667-674.

43. Parker G, Parker I, Brotchie H (2006) Mood state effects of chocolate. J Affect Disord 92: 149-159.

Citation: Khan S, Khan RA (2016) Healthy Diet a Tool to Reduce Anxiety and Depression. J Depress Anxiety 5: 220. doi:10.4200/2167-1044.1000220