Role of various lifestyle and behavioral strategies in positive mental health across a preventive to therapeutic continuum

ABSTRACT

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There is growing interest in lifestyle and behavioral strategies not only in prevention but also in the management of psychiatric morbidity. Available literature in this direction was accessed, and the role of various lifestyle and behavioral factors was explored. There is strong evidence of the role of good sleep, nutritious diet, exercise, social connectedness, enhanced self-esteem, sense of purpose in life, resilience, mindfulness, and environmental mastery in the promotion of mental well-being and prevention and management of psychiatric disorders. There is a significant scope of lifestyle and behavioral intervention in ensuring positive mental health spanning from preventive to therapeutic dimension.

Keywords: Diet, exercise, mental health, mindfulness, resilience, sleep, social connectedness

Growing body of research suggests that there are various lifestyle and behavioral strategies, which not only improve mental well-being but also reduce the probability of mental illness or distress thereof. These revelations may bring out a paradigm shift in the practice of psychiatry where preventive practices may be equally effective in therapeutic paradigm too. A reorientation of focus from an illness-oriented intervention to wellness-oriented intervention in psychiatry may not only change our approach toward evaluation and management of mental morbidity but also lead to significant reduction of stigma toward mental health, greater emphasis on positive lifestyle strategies, reduced requirement of medication, decreased mental morbidity, and a holistic approach toward management.[1]

As per the WHO, a positive mental health implies an individual having a good realization of his/her abilities, coping up well with stressors of life, being productive, and contributing adequately to the community, whereas the management of mental illness primarily hinges on the remediation of disability, impairment, and the handicap.[2]
The latter approach addresses mental illness more than wellness. In this article, we would go through various such lifestyle and behavioral strategies, for which the available literature shows fair evidence of preventive, promotive, protective, and curative effects on mental health and its morbidity. All relevant literature published in this direction in the last one decade were reviewed on a web-based platform, and evidences relevant to the theme is as deliberated upon in the succeeding paragraphs.

**SLEEP**

While sleep may be considered a reversible state of unresponsive, where it shuts oneself from the external world, a lot is going around internally in the body which has a restorative and long-lasting impact. A good night sleep improves learning and memory, inadvertently approving the metaphor “sleep on it.” Scholars and artists have found sleep to be improving their creativity and innovativeness. Available evidence suggest sleep to be a good regulator of mood, appetite, and weight control. The relation of sleep with mental health has been found to be of bidirectional nature, where sleep disturbance affected mental health adversely and mental illness impaired sleep functions. Becker et al. found insomnia during adolescence to be a significant predictor of adulthood depression. Sleep deprivation and restriction impairs one's ability to regulate negative emotions and also reduces positive emotions. Poor sleep has been found to be related to completed or attempted suicide. Impairment of sleep predicts the development of generalized anxiety disorders in future and also predisposes to posttraumatic stress disorder (PTSD) in individuals exposed to trauma.

There is evidence to support that improvement of sleep has positive impact on treatment outcome, independent of benefits incurred with standard treatment of a psychiatric disorder. Treating insomnia along with antidepressant therapy has been found to not only improve sleep but also accelerate improvement in depression. Addition of an hypnotic agent has shown better remission of depression in depressed patients, compared to therapy with antidepressants alone. Improving sleep pattern in patients with PTSDs has been found to reduce daytime PTSD symptoms.

**DIET**

Evidence suggests that dietary pattern of an individual, type of food, and nutrients taken influence the onset, severity, and duration of psychiatric illness. Western dietary pattern has been found to be associated with depression and anxiety, whereas the Mediterranean diet has been found to be protective for mental health. Increased intake of vegetables, fruits, chicken products, fish, processed meat, milk products, and whole grain has proven to reduce the risk of depression. Nutrients, minerals (calcium, magnesium, zinc, folic acid, etc.), vitamins (D, B12, etc.), and polyunsaturated fatty acids have been found to exert a therapeutic effect on depression.

It has been found that diets of many psychiatric patients lack in many nutrients, and supplementations of these nutrients with food lead to symptomatic improvement in these patients. Emerging evidence favors the role of nutrition therapy in preventing and controlling depression, bipolar affective disorder, schizophrenia, anxiety disorders, eating disorders, hyperkinetic disorder, autism spectrum disorder, and substance use disorder. A comprehensive understanding of diet and judicious use of the same may improve well-being, prevent illness, and reduce the medication need and associated side effects and nonadherence.

**CAFFEINE USE**

Commonly used as coffee and energy drinks, caffeine is widely prevalent among adolescents and young adults. It is taken to increase sociability, confidence, and performance and to tackle academic stress. While short-term use of caffeine is associated with better mood, alertness, and performance, the harm far outweighs the benefits. High intake of caffeine has been found to be associated with anxiety, elation, panic, irritability, restlessless, psychomotor agitation, dysphoria, mixed mood state, etc., An increased prevalence of major depressive disorders has been found in high caffeine users, and there are case reports of mania as well. Caffeine has also been found to impede recovery in patients of bipolar affective disorder and mania.

**EXERCISE**

Exercise has been found to be associated with reduction of all-cause mortality risk including mental health. People who exercise have fewer days of mental ill health. Although all kinds of exercise were found to lower mental health burden, greater association has been observed with team sports, followed by cycling, aerobics, and gym exercises. Evidence suggests an exercise duration of 45 min 3–5 days a week to be optimal for good mental health. Iglesias Gallego et al. in their study found that a good physical activity index was related to better state of mental health and people who performed physical activity had higher prosocial behavior. Studies have found sports and exercise to have antidepressant function,
that is, reducing the severity of depression as well as preventing its occurrence. The exercise displayed an inverted “U” relation with mental illness, where excess of exercise was associated with exercise addiction and mental health problems.[28] Evidence suggests physical activity to be a healthy tool for the prevention and treatment of depression and anxiety disorder. Both aerobic and anaerobic exercises (body building and flexibility training) have been shown to reduce depressive and anxiety symptoms. Overtraining syndrome and excessive exercise, however, were associated with mental health impairment.[29] A recent meta-analysis studied the efficacy of exercise in depression independently and as an adjunct with antidepressant medication. The results revealed that physical exercise by itself exerted moderate-to-large effect size in comparison to the control. Exercise compared to no intervention yielded a large and significant effect size and had moderate and significant effect compared to usual care. The effects of exercise when compared to psychological treatments or antidepressant medication were small and not significant. Exercise as an adjunct to antidepressant medication yielded a moderate effect that trended toward significance. Physical exercise was thus concluded to be an effective intervention for depression and could also be a viable adjunct treatment in combination with antidepressants.[30]

SOCIAL CONNECTEDNESS AND SUPPORT

Social connectedness may be defined as a subjective psychological bond an individual feels in relation to individuals or a group of individuals. The connectedness dimension spans across identity and common bond, closeness, involvement, cared for/accepted, and valued relationship.[31] Studies have found social connectedness to provide psychological resources for social cure of mental ill health. It protects and promotes mental health causally. Saeri et al. found a significant bidirectional relationship between social connectedness and mental health. In their study, it was found that connectedness helped provide social ties, discouraged maladaptive coping, encouraged positive coping, reduced stigma, and helped intervene early by better access to formal help.[32] Social support has been found to protect mental health directly by the benefits of healthy social milieu and indirectly by being a buffer against stressful situations.[33] The effect pervades prior to, at the outset of illness, and during the subsequent course of mental illness, thus reducing the risk of onset as well as that of relapse.[34] Perceived good social support has been found to have a positive role in the outcomes of schizophrenia, bipolar affective disorder, and anxiety disorder, whereas loneliness has been found to be associated with poor outcome in those.[35] Decreased social support has been found to both antecedent or consequent to illness, in schizophrenia.[36]

SELF-ESTEEM

Self-esteem stands for how much value a person places on him/herself. It favors a positive attitude about oneself and gives ability to hold such belief in challenging situations including those while under evaluation by others. High self-esteem has been related with greater well-being, positive social relation, and better job satisfaction. A prospective study showed that high self-esteem at baseline predicted lesser symptoms of anxiety, depression, or attention deficit later. This protective role was thought to be mediated through increased self-efficacy and healthy coping. Self-esteem has been found to correlate negatively with anxiety, depression, and inattention in clinical samples. On the other hand, low self-esteem has been found associated with emotional disturbances, addiction, eating disorder, anxiety, and depression.[36,37] Some studies have suggested that low self-esteem prospectively predicted depression while controlling for previous levels of depression, both short or long term and across the gender.[38]

PURPOSE IN LIFE

Purpose in life stands for meaning and direction in life. It predicts both health and longevities. It finds challenging situations to be less threatening and helps reframe stressful situations to handle those effectively. Greater purpose in life offers protection from negative events in life. It has been found that people reporting greater purpose in life displayed better cognition and had reduced risk of cognitive derangement and slower cognitive decline rate. Studies show that people with high purpose in life have 2.4 times lesser likelihood of Alzheimer’s disease. Purpose in life has also been found protective against depression and anxiety, which have been opined to be mediated through buffering of negative events, positive reappraisal of situation, motivated coping, and reduced ruminative pattern of thinking style.[39]

RESILIENCE

Resilience stems from the Latin word Resilire (to leap back). Resilience is an ability to withstand stressors in life healthily and to positively adapt in the wake of adversity. Resilience has been viewed both as a personality trait (trait resilience) and as a dynamic process. [40] Trait resilience protects people from negative aspects of adverse or traumatic events, while dynamic process takes into consideration how people adapt actively and recover rapidly from stressful events. Researchers have found “personal competence”
and “acceptance of self and life” to be the underlying attributing factors. “Personal competence” would include self-reliance, independence, mastery, resourcefulness, and perseverance, whereas “acceptance of self and life” takes adaptability, balance, flexibility, and balanced perspective of life into account. A meta-analysis of studies on resilience have found a significant positive association between resilience and mental health; conversely, reduced resilience suggested vulnerability to mental health impairment during adverse situations. Ying et al. in their studies on earthquake victims found resilience to have a protective effect on PTSD and depressive symptoms and buffered the effect of subjective distress. Another study found life satisfaction to be positively associated with resilience, whereas high anxiety was accompanied by reduced resilience and self-esteem in the patients.

MINDFULNESS

Mindfulness refers to purposely focusing one’s attention to the present moment and accepting it without any judgment. Mindfulness meditation is a practice of cultivating mindfulness. Awareness, nonjudgmental acceptance, and moment-to-moment experience that defines mindfulness, have been considered a potent antidote against rumination, anger, fear, anxiety, etc., Mindfulness-based stress reduction and psychotherapies have established their efficacy in the management and prevention of psychiatric disorders. Researchers have found a positive association of mindfulness with increased level of life satisfaction, agreeableness, conscientiousness, vitality, high self-esteem, empathy, optimism, competence, sense of autonomy, and pleasant affect. Mindfulness has also been found to increase task performance and persistence. Negative correlation, however, has been associated with depression, rumination, dissociation, absentmindedness, social anxiety, difficulty in emotional regulation, intensity of delusion, and psychological symptoms in general.

ENVIRONMENTAL MASTERY

Environmental mastery is defined as the ability of an individual to choose and create an environment that meets his/her specific needs and favor his/her positive growth, emotionally as well as cognitively. The definition utilizes eudemonic perspective, that is, living in the environment, in a way, that enhances the expression of one’s full potential/nature. Environmental mastery has been identified as important for self-efficacy, sense of control, achievement, optimism, motivation, personal adjustment, and better mental health. It has been found to be protective in depression and other mental illnesses.

DISCUSSION

The literature review brings out a significant number of lifestyle and behavioral strategies which have considerable impact on positive mental health ranging anywhere from fostering positive health to reducing the incidence of mental illness to reducing distress/morbidity during the illness. Sleep has a bi-directional relation with mental health and a good sleep by itself has therapeutic effect on mental illness. The role of good sleep hygiene thus cannot be ignored. Research evidence suggests an significant role of diet in mental health. A balanced and Mediterranean diet appears to have a psycho-protective effect. Growing evidence of altered gut microbiota and gut neural axis cautions about many undiscovered aspects of dietary pattern in the causation of mental illness. Avoidance of caffeine, a psychostimulant, responsible for many psychiatric symptoms including sleep disturbance, is likely to improve the recovery of affective disorders. Good physical activity and optimal level of exercise lead to better mental health and augment the effect of antidepressants in therapy. Social connectedness emphasizes the role of psychosocial milieu in mental well-being, thus reinforcing the biopsychosocial construct of mental illness and its cure. Better number and quality of social ties has been found to reduce poor coping behaviors while enhancing positive coping such as professional help-seeking. It has been found that connectedness to community facilitates healthy help seeking and timely intervention. High self-esteem places a person up in the hierarchy of Maslow’s need, characterized by prestige and feeling of accomplishment. It suggests the completion of deficiency needs and paves the way for internal growth needs. High self-esteem helps us identify and challenge negative beliefs, identify positive things about oneself, and build positive relationships while avoiding negative ones and in being assertive. While purpose in life makes the challenges less threatening, resilience gives one the ability to tackle the adversities healthily. Purpose in life gives meaning to one’s existence and helps connect purposefully with the rest of the world. Resilience helps us undertake novel and mildly challenging tasks and set achievable goals, while being determined, yet flexible. Both purpose in life and resilience reduce the impact of stress or perception thereof on mental health. Mindfulness, conscious nonjudgmental awareness of self, improves task performance and positive emotional regulation. It is effective in reducing stress, thus preventing/reducing its adverse effect on mental health. Environmental mastery gives an individual the ability to choose or modify his/her environment, affecting his/her mental well-being favorably. These factors have shown established efficacy and promising role in mental health. Inclusion of these strategies in our nonpharmacological therapies may have far-reaching positive impact. Furthermore, dieticians,
exercise trainers, and mindfulness trainers may be included in the multidimensional intervention team for holistic approach.

CONCLUSION

Available evidence suggests that good sleep, nutritious diet, exercise, social connectedness, enhanced self-esteem, sense of purpose in life, resilience, mindfulness, and environmental mastery have significant psycho-protective function. They not only ensure positive mental health but also reduce the probability of future occurrence of psychiatric disorders and reduce subjective experience of mental illness and may have therapeutic effect independently or as an adjunct. Incorporation of these lifestyle and behavioral practices in our interventional strategies is likely to have far-reaching implications on the incidence, course, and outcome of psychiatric illness. Mental health specialists may consider these strategies as part of their interventions to reduce the pharmacological burden and have better acceptability and lesser stigma.

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REFERENCES

1. Slade M. Mental illness and well-being: The central importance of positive psychology and recovery approaches. BMC Health Serv Res 2010;10:26.
2. World Health Organization: Promoting Mental Health. Concepts, Emerging Evidence, Practice. Geneva: World Health Organization; 2004.
3. Your Guide to Healthy Sleep. US Department of Health and Human Services. National Institutes of Health. NIH Publication no 11-5271; 2011
4. Bartel K, Richardson C, Gradisar M. Sleep and Mental Wellbeing: Exploring the Links. Melbourne: Victorian Health Promotion Foundation; 2018
5. Shochat T, Cohen-Zion M, Tzischinsky O. Functional consequences of inadequate sleep in adolescents: a systematic review. Sleep Med Rev 2014;18:75-87.
6. Becker SP, Langberg JM, Byars KC. Advancing a biopsychosocial and contextual model of sleep in adolescence: A review and introduction to the special issue. J Youth Adolesc 2015;44:239-70.
7. Pigeon WR, Pinquart M, Conner K. Meta-analysis of sleep disturbance and suicidal thoughts and behaviors. J Clin Psychiatry 2012;73:e1160-7.
8. Krystal AD. Psychiatric disorders and sleep. Neurol Clin 2012;30:1389-413.
9. Germain A, Richardson R, Moul DE, Mammen O, Haas G, Forman SD, et al. Placebo-controlled comparison of prazosin and cognitive-behavioral treatments for sleep disturbances in US Military Veterans. J Psychosom Res 2012;72:89-96.
10. Pollack MH, Hoge EA, Worthington JJ, Moshier SJ, Wechsler RS, Brandes M, et al. Eszopiclone for the treatment of posttraumatic stress disorder and associated insomnia: A randomized, double-blind, placebo-controlled trial. J Clin Psychiatry 2011;72:892-7.
11. Raskind MA, Peskind ER, Kanter ED, Petrie EC, Radant A, Thompson CE, et al. Reduction of nightmares and other PTSD symptoms in combat veterans by prazosin: A placebo-controlled study. Am J Psychiatry 2003;160:371-3.
12. Taylor FB, Martin P, Thompson C, Williams J, Mellman TA, Gross C, et al. Prazosin effects on objective sleep measures and clinical symptoms in civilian trauma posttraumatic stress disorder: A placebo-controlled study. Biol Psychiatry 2008;63:629-32.
13. Raskind MA, Peskind ER, Hoff DJ, Hart KL, Holmes HA, Warren D, et al. A parallel group placebo controlled study of prazosin for trauma nightmares and sleep disturbance in combat veterans with post-traumatic stress disorder. Biol Psychiatry 2007;61:928-34.
14. Owen L, Corfe B. The role of diet and nutrition on mental health and well-being. Proc Nutr Soc 2017;76:425-6.
15. Lang UE, Beglinger C, Schweinfurth N, Walter M, Borgwardt S. Nutritional aspects of depression. Cell Physiol Biochem 2016;37:1029-43.
16. Molendijk M, Molero P, Ortuño Sánchez-Pedreño F, Van der Does W, Angel Martínez-González M. Diet quality and depression risk: A systematic review and dose-response meta-analysis of prospective studies. J Affect Disord 2018;226:346-54.
17. Rahe C, Unrath M, Berger K. Dietary patterns and the risk of depression in adults: A systematic review of observational studies. Eur J Nutr 2014;53:997-1013.
18. Martínez-González MA, Sánchez-Villegas A. Food patterns and the prevention of depression. Proc Nutr Soc 2016;75:139-46.
19. Lai JS, Hiles S, Bisquera A, Hure AJ, McEvoy M, Attia J. A systematic review and meta-analysis of diet patterns and depression in community dwelling adults. Am J Clin Nutr 2014;99:181-97.
20. Scheff C, Kilarski LL, Bschor T, Köhler S. Efficacy of adding nutritional supplements in unipolar depression: A systematic review and meta-analysis. Eur Neuropsychopharmacol 2017;27:1090-109.
21. Lakhan SE, Vieira KA. Nutritional therapies for mental disorders. Nutr J 2008;7:2.
22. Rao TS, Asha MR, Ramesh BN, Rao KS. Understanding nutrition, depression and mental illnesses. Indian J Psychiatry 2008;50:77-82.
23. Ferré S. An update on the mechanisms of the psychostimulant effects of caffeine. J Neurochem 2008;105:1067-79.
24. Doherty M, Smith PM. Effects of caffeine ingestion on exercise testing: A meta-analysis. Int J Sport Nutr Exerc Metab 2004;14:626-46.
25. Richard G, Smith A. Caffeine consumption and self-assessed stress, anxiety, and depression in secondary school children. J Psychopharmacol 2015;29:1236-47.
26. Chekroud SR, Guerguieva R, Zheutlin AB, Paulus M, Krumholz HM, Krystal JH, et al. Association between physical exercise and mental health in 1.2 million individuals in the USA between 2011 and 2015: A cross-sectional study. Lancet Psychiatry 2018;5:739-46.
27. Iglesias Gallego D, León-del-Barco B, Mendo-Lázaro S, Leyton-Román M, González-Bernal JJ. Modeling physical activity, mental health, and prosocial behavior in school-aged children: A gender perspective. Sustainability 2020;12:4646.
28. Elbe AM, Lyhne SN, Madsen EE, Krstrup P. Is regular physical activity a key to mental health? Commentary on “Association between physical exercise and mental health in 1.2 million individuals in the USA between 2011 and 2015: A cross-sectional study”, by Chekroud et al., published in Lancet Psychiatry. J Sport Health Sci 2019;8:6-7.
29. Peluso MA, Guerra de Andrade LH. Physical activity and
mental health: The association between exercise and mood. Clinics 2005;60:61-70.
30. Kvaam S, Kleppe CL, Nordhus IH, Hovland A. Exercise as a treatment for depression: A meta-analysis. J Affect Disord 2016;202:67-86.
31. Haslam C, Cruwys T, Haslam SA, Jetten J. Social Connectedness and Health. In: Pachana N, editors. Encyclopedia of Geropsychology. Singapore: Springer; 2015. p. 1-10.
32. Saeri AK, Cruwys T, Barlow FK, Stronge S, Sibley CG. Social connectedness improves public mental health: Investigating bidirectional relationships in the New Zealand attitudes and values survey. Aust N Z J Psychiatry 2018;52:365-74.
33. Gariépy G, Honkanieri H, Quesnel-Vallée A. Social support and protection from depression: Systematic review of current findings in Western countries. Br J Psychiatry 2016;209:284-93.
34. Gayer-Anderson C, Morgan C. Social networks, support and early psychosis: A systematic review. Epidemiol Psychiatr Sci 2013;22:131-46.
35. Wang J, Mann F, Lloyd-Evans B, Ma R, Johnson S. Associations between loneliness and perceived social support and outcomes of mental health problems: A systematic review. BMC Psychiatry 2018;18:156.
36. Baumeister RF, Campbell JD, Krueger JI, Vohs KD. Does high self-esteem cause better performance, interpersonal success, happiness, or healthier lifestyles? Psychol Sci Public Interest 2003;4:1-44.
37. Henriksen IO, Ranøyen I, Indredavik MS, Stenseng F. The role of self-esteem in the development of psychiatric problems: A three-year prospective study in a clinical sample of adolescents. Child Adolesc Psychiatry Ment Health 2017;11:68.
38. Orth U, Robins RW, Widaman KF. Life-span development of self-esteem and its effects on important life outcomes. J Pers Soc Psychol 2012;102:1271-88.
39. Schaefer SM, Morozink Boylan J, van Reekum CM, Lapate RC, Norris CJ, Ryff CD, et al. Purpose in life predicts better emotional recovery from negative stimuli. PLoS One 2013;8:e80329.
40. Färbër F, Rosendahl J. The association between resilience and mental health in the somatically ill-a systematic review and meta-analysis. Dtsch Arztebl Int 2018;115:621-7.
41. Ong AD, Bergeman CS, Bisconti TL, Wallace KA. Psychological resilience, positive emotions, and successful adaptation to stress in later life. J Pers Soc Psychol 2006;91:730-49.
42. Ying L, Wu X, Lin C, Jiang L. Traumatic severity and trait resilience as predictors of posttraumatic stress disorder and depressive symptoms among adolescent survivors of the Wenchuan earthquake. PLoS One 2014;9:e89401.
43. Beutel ME, GlAESmer H, Wtitink J, Marian H, Brähler E. Life satisfaction, anxiety, depression and resilience across the life span of men. Aging Male 2010;13:32-9.
44. Keng SL, Smoski MJ, Robins CJ. Effects of mindfulness on psychological health: A review of empirical studies. Clin Psychol Rev 2011;31:1041-56.
45. Hayes AM, Feldman G. Clarifying the construct of mindfulness in the context of emotion regulation and the process of change in therapy. Clin Psychol 2004;11:255-62.
46. Strausser DR, Lustig DC, Ciftçi A. Psychological well-being: Its relation to work personality, vocational identity, and career thoughts. J Psychol 2008;142:21-35.
47. Jang Y, Kim G, Chiriboga DA. Health perception and depressive symptoms among older Korean Americans. J Cross Cult Gerontol 2006;21:91-102.
48. Knight T, Davison TE, McCabe MP, Mellor DJ. Environmental mastery and depression in older adults in residential care. Ageing Soc 2011;31:870-84.
49. Clapp M, Aurora N, Herrera L, Bhattia M, Wilen E, Wakefield S. Gut microbiota’s effect on mental health: The gut-brain axis. Clin Pract 2017;7:987.
50. Taormina RJ, Gao JH. Maslow and the motivation hierarchy: Measuring satisfaction of the needs. Am J Psychol 2013;126:155-77.