

Review Article

Mind-Body Synergy: Yoga's Role in the Treatment and Prevention of Eating Disorders

Vadde Venkata Karthik¹, Shivaprasad Shetty², Prashanth Shetty³

From, ¹MD (Clinical Yoga) scholar, Department of Yoga Therapeutics, SDM College of Naturopathy and Yogic Sciences, Ujire, Karnataka, India ²Dean & Professor, Department of Yoga Therapeutics, SDM College of Naturopathy and Yogic Sciences, Ujire, Karnataka, India. ³Principal, SDM College of Naturopathy and Yogic Sciences, Ujire, Karnataka, India

ABSTRACT

Background: One of the most prevalent psychological and psychosomatic disorders that negatively impacts mental and physical health as well as quality of life, is eating disorder. A severe chaotic eating pattern, such as that of anorexia nervosa or bulimia nervosa, is indicative of an eating disorder. Clinical scientists have long been interested in alternative medicine, and using practices like yoga to treat eating disorders has been suggested as a novel therapy strategy. In essence, yoga is about being connected and ongoing. Yoga can help individuals having trouble eating and feeding themselves reach their therapeutic goals by using mind- and body-based strategies. **Methods:** The data for the present review study were collected through a search of electronic resources and databases and a manual search of library resources. Relevant articles and studies were searched online on Pub Med, Google Scholar, and Science Direct using keywords such as 'yoga', 'feeding and eating disorder', 'pranayama', 'relaxation', and 'meditation'. This study will address the potential role of yoga in treating and preventing eating disorders. **Results:** The findings demonstrated that emotional problems, stress, and other essentially subjective elements are the root causes of eating disorders. Yoga helps many people find harmony and relaxation in their bodies, souls, and minds. This method makes fighting eating problems more feasible. **Conclusion:** Yoga boosts one's self-esteem and good body and attractiveness perception. Yoga treats people as a whole and offers a variety of ongoing, basic approaches for human health, development, preparedness, and balance. As a result, it is useful in treating eating disorders and poor nutrition.

Key words: Eating disorder, Yoga, Meditation, Pranayama, Nutrition disorder

The spectrum of mental health conditions known as eating disorders is characterized by a persistent disruption in eating behaviour and a decline in both physical and mental health. An individual's relationship with food, eating, and their body—how they experience it, perceive it, judge, or appreciate it, and relate to it—becomes pathologically complicated and dysfunctional in eating disorders such as anorexia nervosa (AN), bulimia nervosa (BN), and binge eating disorders (BED) [1]. Their symptoms include dysregulation of the self, which shows up as abnormal eating [2]; interoceptive deficits (i.e., impaired ability to sense and interpret physiological processes [3,4] neglect of the body [5–7] and other characteristics that make them challenging to treat, as well as emotional dysregulation (depression, trouble controlling emotions [8,9]. The present article reviewed the definition, classification, epidemiology, and pathophysiology of different types of eating disorders and then defined yoga and yoga therapy and addressed their relationship and interactions with eating disorders [1–3].

METHODS

The data for the present review study was collected through a search of electronic resources PubMed, Google Scholar and Science Direct using the keywords 'yoga', 'feeding and eating disorder', 'pranayama', 'relaxation' and 'meditation', which were used to search for the sources. This study will address the potential role of yoga in treating and preventing eating disorders.

RESULTS

Types of eating disorders

The DSM-V categorizes eating disorders into four main groups. The first category deals with feeding and eating disorders in infancy or early childhood, including conditions like Pica, Rumination Disorder, and Feeding Disorder of Infancy or Early Childhood. Anorexia Nervosa constitutes the second category, characterized by low body weight, fear of weight gain, and distorted body image. Bulimia Nervosa, involving binge eating followed by compensatory behaviours,

Access this article online

Received – 26th February 2025
Initial Review – 27th February 2025
Accepted – 25th March 2025

Quick response code

Correspondence to: Dr. Vadde Venkata Karthik, Department of Yoga Therapeutics, SDM College of Naturopathy and Yogic Sciences, Ujire, Karnataka, India.

Email: vaddevenkatarthik@gmail.com

falls into the third category. Lastly, Binge Eating Disorder, marked by recurring episodes of binge eating without compensatory behaviours, makes up the fourth category. These classifications are crucial for diagnosing and treating eating disorders in the field of psychology [1].

Anorexia Nervosa involves self-starvation and a relentless pursuit of low weight, often driven by distorted body image and fear of obesity [1]. It's not solely about loss of appetite but encompasses psychological factors leading to restrictive eating habits [11]. Bulimia nervosa involves recurring binge eating followed by behaviours like vomiting, fasting, or intense exercise to avoid weight gain. Despite having a more realistic body image than those with anorexia, individuals with bulimia still fear gaining weight. [12]. Binge Eating Disorder (BED) is characterised by recurrent episodes of consuming large quantities of food without compensatory behaviours, resulting in significant distress [13]. It differs from bulimia nervosa in the absence of purging behaviours and from anorexia nervosa in the lack of significant weight loss. Feeding and Eating Disorders of Infancy or Early Childhood include Pica, Rumination Disorder, and Feeding Disorder of Infancy or Early Childhood, which involve abnormal eating behaviours in young children [14].

Pathophysiology of Eating disorders

Eating disorders, including anorexia nervosa (AN), bulimia nervosa (BN), and binge-eating disorder (BED), are complex conditions arising from genetic, biological, psychological, and environmental factors. Genetics play a significant role in eating disorders, with a hereditary risk factor of 50% to 80% [1]. Biological factors, such as neurotransmitter imbalances and brain development during adolescence, also contribute [3]. Psychological conflicts over self-control and environmental influences, such as abuse and societal pressures, further contribute to the development of eating disorders [1, 3].

Conventional treatments such as psychotherapy, pharmacotherapy, and nutritional rehabilitation remain the foundation of management [15]. However, despite their effectiveness, these treatments have limitations, often failing to address the emotional distress and mind-body disconnection experienced by individuals with eating disorders. Integrating yoga as a complementary therapy can help bridge these gaps by enhancing self-awareness, emotional regulation, and overall well-being [16].

Yoga and Eating Disorders

The integration of mind-body practices, like yoga, into ED prevention and treatment approaches, has been shown to increase positive embodiment by giving at-risk individuals the chance to experience, connect with, and value their bodies [5, 7, 16–20]. As an integrated mind-body practice, yoga generally consists of asana (yoga postures and sequences), breathing exercises, mindfulness, relaxation, and meditation

[2, 6, 7, 21, 22]. As per Cook-Cottone & and Douglass [7, 23] yoga is hypothesized to facilitate positive embodiment by encouraging good physical experiences. The fundamentals of yoga promise a major increase in physical and mental well-being, psychological relaxation, and balance and harmony of the human psyche's pillars [24]. Yoga's relaxation techniques help people with psychiatric issues feel less anxious and depressed [25].

Yoga sessions improve the alignment and convergence of the idealised self-image and the perceived self [26]. A typical yoga session may include intentional practices where participants are encouraged to integrate breath and movement, bring awareness to the body as it moves, and enter and exit yoga postures at depths, intensities, and eases that are determined by proprioception (i.e., attention to body signals communicating the inner and outer experience of the body as it moves in space) and awareness (i.e., interoceptive, physiological, kinesthetic) [2, 6, 7, 21]. Yoga can develop abilities of interoception and mindfulness; in this way, it may cultivate a person's capacity to turn within and listen to the body and attend to it as it is in the moment without trying to modify or control it [27, 28]. Positive embodiment practices in yoga include self-determination and personal agency, recognising the usefulness of the body, being receptive to it, and inhabiting the body as a subjective location [7].

According to Martin et al 2013 [29], practising yoga can lead to positive embodiment through a pathway that includes embodied experiences including joyful absorption, self-compassion, mindfulness, and less state objectification and body surveillance throughout the class. Yoga-based approaches to prevention may help reduce ED symptoms (overall ED psychopathology, bingeing, and bulimic symptoms) and risk factors (e.g., body dissatisfaction, body surveillance, and self-objectification), as well as enhance protective constructs like body awareness, emotion regulation, mindful eating, and mindful self-care [23]. This is according to a recent review of 43 studies and a meta-analysis of 11 trials, 754 participants) of yoga prevention and intervention studies. The review also described the risks associated with doing yoga in environments that uphold restrictive eating habits, encourage thinness ideals, are not inclusive of all body types, use mirrors, and employ yoga cueing protocols that prioritize fitness and thinness over mindfulness-based cues [2].

Cook-Cottone C [23] conducted a thorough analysis of mind-body interventions that are universally applicable for non-acute food and body image challenges. The results regarding food intake and eating disorders indicated that, for clinically ill patients and those at risk of eating disorders, the body awareness provided by various forms of exercise, including yoga, can be even more beneficial than changing the amount of food intake and food regimen in the general population. This is in line with the assessment of the role of

body awareness and mindfulness in exercise and eating behaviours [30]. In addition to these findings, a study looking into the relationship between mindful eating, anxiety, BED, and other negative outcomes revealed that those who are less aware of their eating habits tend to be more anxious, obese, and have less control over their eating habits. These factors can also be used as indicators of eating disorders [31].

A study found that women who regularly practice yoga tend to have better bodies, are more content with their bodies, and use healthier weight control techniques. On the other hand, obese women who only occasionally practice yoga tend to use unhealthy weight control methods such as smoking and drinking alcohol [32]. The beneficial effects of yoga were verified by a comprehensive review study on the effectiveness of yoga activities on eating disorders, and although these effects were modest, yoga did not appear to be harmful to individuals with eating disorders [26]. Another study on BED and yoga demonstrated that weekly yoga exercises at home are particularly useful in the treatment of BED. Other reviews also have demonstrated that yoga has positive impacts on cognitive and emotional processes [33].

Yogic Understanding of Eating Disorders

According to the yogic understanding of eating disorders, there is *Dwesha* towards the self, *Abhinivesha* (fear) about becoming fat, *Raga* towards their body shape and *avidya* that all the negative emotions that person was experiencing could be coped with by restrictive eating, purging and body checking [34]. Yoga facilitates better relationships with oneself in both success and failure, as well as improved self-awareness and self-compassion. By learning what the body needs, yoga improves interoceptive awareness, which helps the person to feel and understand processes more accurately. This is mostly due to the activation of the insula, a region of the brain [22].

DISCUSSION

The Yamas and Niyamas of Ashtanga yoga can be exquisitely applied to the treatment, recovery and healing process for individuals with eating disorders. The Yamas, which include *Ahimsa* (non-violence), *Satya* (truthfulness), *Asteya* (non-stealing), *Brahmacharya* (non-excess), and *Aparigraha* (non-attachment), serve as foundational principles for a yogic lifestyle [34]. *Ahimsa*, the first Yama, emphasizes non-violence, extending compassion to oneself during recovery from an eating disorder. *Satya*, the second Yama, promotes truthfulness and moving away from distorted thoughts that fuel disordered behaviour. *Asteya*, the third Yama, encourages non-stealing and reliance on internal resources rather than external factors for control or numbness. *Brahmacharya*, the fourth Yama, involves practising non-excess, addressing imbalances in behaviours related to eating disorders and promoting awareness of what is enough during recovery. *Aparigraha*, the fifth Yama, focuses on non-hoarding or non-

attachment, urging individuals to let go of the identity associated with the eating disorder and embrace positive transformation.

The Niyamas, including *Saucha* (purity), *Santosha* (contentment), *Tapas* (discipline), *Svadyaya* (self-study), and *Isvarapranidhana* (surrender), guide individuals in their spiritual journey and recovery [34]. *Saucha* emphasizes inner and outer cleanliness, aligning with self-care and maintaining healthy boundaries in relationships. *Santosha* encourages contentment, urging individuals in recovery to be present and accept their realities without relying on symptoms. *Tapas*, with its dual meanings of discipline and the burning desire for self-improvement, promotes self-discipline in resisting disordered behaviours and taps into transformative energy during the healing process. *Svadyaya*, the practice of self-study, involves continuous self-inquiry and learning about oneself without the influence of the eating disorder. *Isvarapranidhana*, the final Niyama, calls for surrender to a higher power and celebration of the divine [34].

In recovery, it symbolizes letting go of the power of the eating disorder, trusting the healing process, and gaining gratitude for one's renewed life. Both the Yamas and Niyamas, as well as the recovery process, emphasize awareness, growth, and decisions aligned with one's true essence. They provide a framework for living a fulfilling life and directing one's path toward wholeness. Yoga emphasizes a balanced lifestyle through key components. '*Achar*' promotes regular exercise like yoga, enhancing cardiorespiratory health. '*Vichar*' stresses cultivating positive thoughts and ethical behaviour. '*Ahar*' underscores a nourishing diet, while '*Vihar*' advocates proper relaxation and group activities for mental and physical well-being [35].

The parasympathetic nervous system (e.g., improving heart rate variability and vascular tone through greater baroreceptor sensitivity), the reduction of stress and its downstream vascular and endocrine effects (mediated by the hypothalamic-pituitary axis; e.g., lower cortisol and reduced renin activity), and changes in neurotransmitters (e.g., increasing serotonin and decreasing dopamine) affecting mood and self-efficacy are some of the recent evidence suggesting that yoga linked to vascular and mental health benefits [36–41].

CONCLUSION

In recent years, eating disorders have received a lot of attention and there has been a lot of interest in complementary medicine in conjunction with other practices like yoga and meditation, particularly mindful eating, which have been shown to have positive effects on eating disorders and their comorbidities, such as anxiety and depression, by acting concurrently on the body and mind and fostering feelings of self-worth and body positivity. But more research may be needed to fully understand the impact of yoga on the factors

that influence the development, persistence, and management of these diseases.

REFERENCE

- Guha M. Diagnostic and statistical manual of mental disorders: DSM-5. Reference Reviews. 2014; 28(3):36-7.
- Borden A, Cook-Cottone C. Yoga and eating disorder prevention and treatment: A comprehensive review and meta-analysis. *Yoga for Positive Embodiment in Eating Disorder Prevention and Treatment*. 2022; 97-134.
- Polivy J, Herman CP. Causes of eating disorders. *Annual review of psychology*. 2002; 53(1):187-213.
- Pollatos O, Kurz AL, Albrecht J, *et al.* Reduced perception of bodily signals in anorexia nervosa. *Eating behaviors*. 2008; 9(4):381-8.
- Cook-Cottone CP, Guyker WM. The development and validation of the Mindful Self-Care Scale (MSCS): An assessment of practices that support positive embodiment. *Mindfulness*. 2018; 9:161-75.
- Cook-Cottone C. Embodied self-regulation and mindful self-care in the prevention of eating disorders. *The last word on eating disorders prevention* 2018; 98-105.
- Rance NM, Moller NP, Douglas BA. Eating disorder counsellors with eating disorder histories: A story of being "normal". *Eating disorders*. 2010; 18(5):377-92.
- D O'Brien P, Hinder LM, Callaghan BC, *et al.* Neurological consequences of obesity. *The Lancet Neurology*. 2017; 16(6):465-77.
- Prefit AB, Candea DM, Szentagotai-Tátar A. Emotion regulation across eating pathology: A meta-analysis. *Appetite*. 2019; 143.
- Halgin PR, Whitbourne SK. *Abnormal Psychology: clinical perspectives on psychological disorders* (4th). McGraw-Hill College. Kazdin, AE (1978). *Behavior Therapy: Evolution and Expansion*. *The Counseling Psychologist*. 2003; 7(3):34-7.
- Bulik CM, Coleman JR, Hardaway JA, *et al.* Genetics and neurobiology of eating disorders. *Nature Neuroscience*. 2022; 25(5):543-54.
- Fischer S, Wonderlich J, Becker KD. Impulsivity, stress reactivity, and eating disorders. *Neurobiology of Abnormal Emotion and Motivated Behaviors: Integrating Animal and Human Research*. 2018; 42-58.
- Dalle Grave R. Eating disorders: progress and challenges. *European Journal of Internal Medicine*. 2011; 22(2):153-60.
- Vahia VN. Diagnostic and statistical manual of mental disorders 5: A quick glance. *Indian journal of psychiatry*. 2013; 55(3):220-3.
- Halmi KA. The multimodal treatment of eating disorders. *World Psychiatry*. 2005; 4(2):69.
- Janjhua Y, Chaudhary R, Sharma N, *et al.* A study on effect of yoga on emotional regulation, self-esteem, and feelings of adolescents. *Journal of family medicine and primary care*. 2020; 9(7):3381-6.
- Allen KL, Byrne SM, Crosby RD, *et al.* Testing for interactive and non-linear effects of risk factors for binge eating and purging eating disorders. *Behaviour Research and Therapy*. 2016; 87:40-7.
- Cramer H, Lauche R, Anheyser D, *et al.* Yoga for anxiety: A systematic review and meta-analysis of randomized controlled trials. *Depression and anxiety*. 2018; 35(9):830-43.
- Halliwell E, Dawson K, Burkey S. A randomized experimental evaluation of a yoga-based body image intervention. *Body Image*. 2019; 28:119-27.
- Kramer R, Cuccolo K. Yoga practice in a college sample: Associated changes in eating disorder, body image, and related factors over time. *Eating disorders*. 2020; 28(4):494-512.
- Levine MP. Prevention of eating disorders: 2020 in review. *Eating disorders*. 2021; 29(2):134-50.
- Anderson S, Sovik R. *Yoga: Mastering the basics*. Himalayan Institute Press; 2000.
- Estey EE, Roff C, Kozlowski MB, *et al.* Efficacy of Eat Breathe Thrive: A randomized controlled trial of a yoga-based program. *Body Image*. 2022; 42:427-39.
- Perey I, Cook-Cottone C. Eating disorders, embodiment, and yoga: A conceptual overview. *Yoga for Positive Embodiment in Eating Disorder Prevention and Treatment*. 2022; 9-23.
- Sarraf N. The effects of aerobic and Yoga training modes on physical self-description components of female university students. *Journal of Fundamentals of Mental Health*. 2008 Sep 22; 10(39):221-30.
- Jorm AF, Morgan AJ, Hetrick SE. Relaxation for depression. *Cochrane Database of Systematic Reviews*. 2008(4).
- Jahanbin E. Yoga Therapy and Eating Disorders. *Caspian Journal of Health Research*. 2019; 4(1):21-7.
- Katterman SN, Kleinman BM, Hood MM, *et al.* Mindfulness meditation as an intervention for binge eating, emotional eating, and weight loss: a systematic review. *Eating behaviors*. 2014; 15(2):197-204.
- Khoury B, Knäuper B, Pagnini F, *et al.* Embodied mindfulness. *Mindfulness*. 2017; 8:1160-71.
- Cox AE, Tylka TL. A conceptual model describing mechanisms for how yoga practice may support positive embodiment. In *Yoga for positive embodiment in eating disorder prevention and treatment* 2022; 70-93.
- Martin R, Prichard I, Hutchinson AD, *et al.* The role of body awareness and mindfulness in the relationship between exercise and eating behavior. *Journal of Sport and Exercise Psychology*. 2013; 35(6):655-60.
- Pintado-Cucarella S, Rodríguez-Salgado P. Mindful eating and its relationship with body mass index, binge eating, anxiety and negative affect. *Journal of Behavior, Health & Social Issues*. 2016; 8(2):19-24.
- Lauche R, Sibbritt D, Ostermann T, *et al.* Associations between yoga/meditation use, body satisfaction, and weight management methods: Results of a national cross-sectional survey of 8009 Australian women. *Nutrition*. 2017; 34:58-64.
- McIver S, O'Halloran P, McGartland M. Yoga as a treatment for binge eating disorder: a preliminary study. *Complementary therapies in medicine*. 2009; 17(4):196-202.
- Iyengar BK. *Light on the yoga sutras of Patanjali*. Aquarian/Thorsons; 1993.
- Bhavanani AB. Role of yoga in prevention and management of lifestyle disorders. *Yoga Mimamsa*. 2017; 49(2):42-7.
- Ross A, Thomas S. The health benefits of yoga and exercise: a review of comparison studies. *The journal of alternative and complementary medicine*. 2010; 16(1):3-12.
- Christa E, Srivastava P, Chandran DS, *et al.* Effect of yoga-based cardiac rehabilitation on heart rate variability: randomized controlled trial in Patients post-MI. *International Journal of Yoga Therapy*. 2019; 29(1):43-50.

39. Zou L, Sasaki JE, Wei GX, *et al.* Effects of mind–body exercises (Tai Chi/Yoga) on heart rate variability parameters and perceived stress: A systematic review with meta-analysis of randomized controlled trials. *Journal of clinical medicine*. 2018; 7(11):404.
40. Hendriks T, De Jong J, Cramer H. The effects of yoga on positive mental health among healthy adults: a systematic review and meta-analysis. *The Journal of Alternative and Complementary Medicine*. 2017; 23(7):505-17.
41. Domingues RB. Modern postural yoga as a mental health promoting tool: A systematic review. *Complementary therapies*

in clinical practice. 2018; 31:248-55.

How to cite this article: Karthik VV, Shetty S, Shetty P. Mind-Body Synergy: Yoga's Role in the Treatment and Prevention of Eating Disorders. *Indian J Integr Med*. 2025; Online First.

Funding: None;

Conflicts of Interest: None Stated