

## Yoga in Psychiatry: An Examination of Concept, Efficacy, and Safety

### WHAT DO PSYCHIATRISTS MEAN WHEN THEY TALK ABOUT YOGA?

Yoga is an ancient Indian practice with a particular worldview and psychology. Because of its indigenous and ancient character, yoga has perennially evoked interest in the minds of intellectual Indian researchers and physicians. Over the last century, it has captured the interest of the Western world and has garnered millions of followers across all nations. Since June 2015, the world community has even started celebrating the International Yoga Day. In the backdrop, with such an interest, we will discuss the available research and its implications for the practice of psychiatry in the 21<sup>st</sup> century.

When health-care professionals talk about yoga, they usually discuss either its usefulness as a lifestyle intervention or as a potential treatment for physical and psychological problems. The health-care community, particularly mental health community, is currently interested in the physical exercises (Hatha Yoga or *Pranayama*) and few ill-defined meditative practices (such as *Dhyana* in Mantra Yoga). Hence, the focus is less on the mystical-spiritual aspects of yoga and more on the measurable/interventional and physical-psychological aspects (this specific narrower aspect will be called as “Yoga therapy” in this article to differentiate it from the broader wholesome term – which is merely called - yoga). Recent research in psychiatry has been in search of the empirical evidence for the usefulness of yoga therapy as complimentary or solitary therapeutic agent in psychiatric treatment.

### A BRIEF CONCEPTUAL HISTORY OF YOGA

The practice of yoga might have been present long before it was systematized by Patañjali in his book,

Yoga Sutras, which have aphorisms on yoga. Whatever evidence is available suggests that he lived around 100 BC. His yogic system borrows many ideas and concepts from Kapila’s Sāṃkhya School of Philosophy.<sup>[1]</sup>

Yoga is a Sanskrit word for union. Patañjali practically defines yoga as the final annihilation (*Nirodha*) of all the mental states (*Cittavṛtti*) through progressive stages to attain a steadied mind with particular types of graduated mental states.<sup>[2]</sup> The ultimate goal as described by Patañjali is the attainment of a particular spiritual mind state which is variably called *Moksha* and *Satcitānanda* (which can be translated as salvation or union with ultimate reality).

Over centuries, many systems of yoga have been developed. The prominent ones which now exist are Hatha yoga, Mantra or Japa yoga, Surat-Shabd yoga (also known as *Nam Bhakti*), Kundalini yoga, Tantra yoga (popularized by Bhagawan Rajneesh/Osho), etc., Out of these, Hatha yoga is the most popular kind in our day which has its emphasis on physical exercises or asanas, while Kundalini yoga with its *Pranayama* and Mantra yoga with its *Dhyana* are also well practiced and popular. The particular practices such as asanas, *Dhyana* and *Pranayama* of these three prominent schools have claimed specific physical and psychological health benefits.<sup>[3]</sup>

### REVIEW OF LITERATURE

There is a lot of research literature on yoga as a therapy for physical and psychological problems. We will discuss few relevant individual studies and reviews on yoga therapy in psychiatric disorders.

#### Anxiety and depression

There are many studies<sup>[4-6]</sup> showing improvement in anxiety and depressive symptoms (level 3 evidence<sup>[7]</sup>)

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**How to cite this article:** Reddy MS, Vijay SM. Yoga in psychiatry: An examination of concept, efficacy, and safety. Indian J Psychol Med 2016;38:275-8.

Access this article online	
Website: www.ijpm.info	Quick Response Code 
DOI: 10.4103/0253-7176.185948	

which is attributable to yoga therapy, this was similar to improvement due to physical exercise. Most studies might have been done on people with mild-to-moderate anxiety or depression. Very few studies done on melancholic depression have found inferiority to electroconvulsive therapy, but not to drug treatment.<sup>[8]</sup> Hence, yoga therapy may be used as an add-on treatment in this population.

### **Eating disorders**

Available studies<sup>[9,10]</sup> suggest that yoga therapy is useful in anorexia nervosa, bulimia nervosa, and binge eating disorder.

### **Schizophrenia**

Although many studies<sup>[11,12]</sup> reported a reduction in “psychiatric symptoms” in schizophrenia with yoga therapy as an add-on which was also true of Tai Chi and progressive muscle relaxation, they have not defined these symptoms specifically. There is limited evidence for effectiveness in anxiety and stress-related symptoms in schizophrenia. Few reviews suggest moderate or no evidence for effects on social function and positive and negative psychotic symptoms.<sup>[13]</sup> A Cochrane review<sup>[14]</sup> describes the available evidence on yoga therapy as an add-on treatment in schizophrenia as limited and weak.

### **Obsessive–compulsive disorder and attention deficit-hyperactivity disorder**

The studies on yoga therapy for obsessive–compulsive disorder (OCD) are methodologically weak and they report a tentative support for mindfulness meditation, electro-acupuncture, and Kundalini yoga.<sup>[15]</sup> However, Kundalini yoga when compared to relaxation was not found to be effective in OCD.<sup>[16]</sup> In attention deficit-hyperactivity disorder, available studies and a Cochrane review<sup>[17]</sup> did not find any differences between yoga therapy and standard treatment on the rating scales.

### **Sleep disorders**

Yoga therapy has a moderate effect in sleep improvement in elderly.<sup>[18]</sup> While yoga therapy was recommended in restless leg syndrome, reviews have not found good quality evidence to support such “pseudo-professional recommendation.”<sup>[19]</sup>

### **Parkinson’s disease and other neuropsychiatric conditions**

Yoga therapy along with general exercise, robotic-assisted training, Tai Chi, Qi Gong and dance therapy, neurofeedback-based techniques, etc., have shown a significant effect on the quality of life, depression level, and balance in patients with Parkinson’s disease.<sup>[20]</sup>

### **Research on the mechanism of action**

Proposals have been made with regard to the mechanism of action of yoga therapy. Action on sympathetic nervous system and hypothalamo-pituitary-adrenal axis with measurable reduction in cortisol levels<sup>[21]</sup> is the most common view in people with depression and anxiety while others have posited increase in brain-derived neurotrophic factor.<sup>[22]</sup> In people with schizophrenia, an increase in oxytocin levels was observed postyoga therapy, and thereby the related vagal nerve stimulation is postulated as a mechanism.<sup>[23]</sup> In a study with seven healthy elderly people, neuroimaging studies suggested an increase in the hippocampal gray matter volume after yoga therapy.<sup>[24]</sup> These studies are preliminary, based on small sample sizes, from single research center and thereby need replication.

### **Limitations in the studies**

The quality of the evidence in most of the research on yoga therapy is compromised due to the high attrition rates, small sample sizes, and short duration of follow-up in many studies.<sup>[5,9,14-16,25]</sup> Absence of information regarding randomization, adverse effects, and details of yoga therapy module also damages quality.<sup>[16,25]</sup> Some studies were also prone to selection bias.<sup>[9]</sup> Generalization of findings and systematic review process was affected by varying therapy modules, study populations, outcome variables, and the varying quality of studies.<sup>[18,26]</sup> For better evidence, many reviews suggest robust designs, larger samples, and randomized controlled trials. However, the research scene is changing with attempts to construct well-researched therapy modules for depression<sup>[27]</sup> and for the elderly population.<sup>[3]</sup>

### **ARE THERE ANY ADVERSE EFFECTS DUE TO YOGA? YES!**

The knowledge of adverse effects due to any therapy helps us to modify the intervention and to some extent predicts the patient compliance and the overall treatment course. Many studies on yoga therapy do not report on adverse effects. Adverse effects due to yoga are popularly known, but only few are published. Compressive myelopathy in a report was attributed to a yogic pose called *Sirsasana* (headstand).<sup>[28]</sup> Popular books and websites by prominent yoga practitioners and gurus<sup>[29-31]</sup> warn against probable disturbances associated with Kundalini awakening including depressive and anxiety symptoms, physical pain, suicidal tendencies, burning sensation, and possible psychotic breakdown. Dr. Bonnie Greenwell,<sup>[32]</sup> yoga practitioner and clinical psychologist, warns that emotional upheavals with Kundalini yoga can resemble psychotic breakdowns, wherein the person might feel unattached to reality and

agitated. These adverse effects should be scientifically studied and characterized for assessing the safety and tolerability of yoga therapy.

## QUESTIONS TO BE ADDRESSED IN THE FUTURE RESEARCH OF YOGA

Yoga therapy though showing tremendous potential for its utility in psychiatry should be rigorously evaluated to produce generalizable, level-I empirical evidence. We place the following research questions before the scientific community for future study and discussion.

- How is the effect and neurobiology of Hatha yoga exercises different from that of any other physical exercise or progressive muscle relaxation?
- Can (or should) we differentiate between the beneficial effects of various Eastern spiritual practices (which have been together called meditative movement interventions) such as yoga, Qi Gong, Tai Chi, mindfulness, or Zen meditation?
- For what specific psychiatric conditions, is the component of meditation or *Dhyana* in the yoga therapy more useful than physical exercise-based Hatha yoga?
- What are the various possible adverse effects due to yoga therapy? And what are the specific adverse effects due to the distinct components of yoga therapy such as asanas, loosening exercises, purificatory practices, breathing exercises, meditative practices, etc.?
- In a subgroup analysis of a systematic review and meta-analysis on yoga for prenatal depression, integrated yoga (which along with physical exercises including meditation and *Pranayama*) showed a significant reduction in the level of depression whereas physical exercise-based yoga did not.<sup>[33]</sup> This poses a different and interesting question. Is there a differential efficacy among the various types of yoga therapy, for example, Hatha yoga, Mantra yoga, Surat-Shabd yoga, Kundalini yoga, Tantra yoga?
- How to conceptualize the new interfaces between yoga, philosophy, and religion, which may emerge through the future research on meditative component of yoga? What scientific and philosophical tools do we have to use to understand these problematic interdisciplinary borderlands? No denial of the existence of these borderlands will work, as Patañjali himself defines yoga as primarily a teleological pursuit toward final annihilation or *Nirodha* of all mental states.
- How to come to terms with the controversial Tantra yoga? Scientific and ethical study of tantric practices and their effects or adverse effects in people with psychiatric illnesses has to be carried out.

## CONCLUSION

Yoga therapy might have a therapeutic potential which can be tapped for the people with psychiatric illness. Although its lifestyle benefits and usefulness as an add-on therapy in mild depression and anxiety are apparent, good quality evidence is required in psychiatric illnesses to come to any conclusion. The encouraging neurobiological research on the mechanisms of action is ongoing which might give more insights about this therapy. Cultural and academic psychiatrists have to probe further into the various research questions raised and focus more on the study of adverse effects due to this intervention.

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