

The Benefits of Yoga for Mental Health

1 Evidence – a summary

Yoga is a form of exercise that includes strengthening and stretching the body combined with breathing techniques, meditation, relaxation and perhaps chanting. There are many types of yoga that vary enormously in the intensity of the physical work-out available, some sufficiently challenging to achieve aerobic levels of exercise, others very gentle, including seated yoga for people with physical limitations. Published research studies into the benefits of yoga are specific to the types of yoga investigated, so the question “Is yoga effective in promoting mental health?” needs qualifying to incorporate more questions: What type of yoga? Practised how often and over what period of time? For what types of people? What sort of benefits are looked for? e.g. physical wellbeing, stress reduction, deep relaxation. Overall the mental benefits of practising yoga are similar to those found with meditation (greater awareness and mental focus, stress reduction, positive affect) and may also reflect the stress reducing effects of low-intensity physical exercise.

The benefits of yoga cannot be attributed solely to its exercise value:

“Physical exercises and the physical components of yoga practices have several similarities, but also important differences. Evidence suggests that yoga interventions appear to be equal and/or superior to exercise in most outcome measures. Emphasis on breath regulation, mindfulness during practice, and importance given to maintenance of postures are some of the elements which differentiate yoga practices from physical exercises.” Govinderaj et al (2016): Yoga and physical exercise - a review and comparison. *International Review of Psychiatry*, 28(3):242-53.

In a comparative study, the benefits of yoga on mood and anxiety outweighed those from walking, and were shown to be associated with an increase in brain GABA levels (depression and anxiety both being associated with depleted GABA levels). Streeter et al. (2010): Effects of yoga versus walking on mood, anxiety, and brain GABA levels: a randomized controlled MRS study. *Journal of Alternative and Complementary Medicine*, 16(11): 1145-1152. [MRS is magnetic resonance spectroscopy.]

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3111147/>

A summary of the benefits that yoga can offer is available at <https://www.psychologytoday.com/gb/blog/get-hardy/201305/take-stand-yoga-today>

2 Overview

Attempts to make definitive statements about the benefits of yoga in specific mental health conditions by means of systematic reviews are hampered by the scarcity and low quality (e.g. small numbers of participants, short term outcomes) of randomised controlled trials (RCT), as indicated in several reviews.

A summarizing review found 16 studies out of a pool of 124 that “met rigorous criteria for the final review. Grade B evidence supporting a potential acute benefit for yoga exists in depression (four RCTs), as an adjunct to pharmacotherapy in schizophrenia (three RCTs), in children with ADHD (two RCTs), and Grade C evidence in sleep complaints (three RCTs). RCTs in cognitive disorders and eating disorders yielded conflicting results. No studies looked at primary prevention, relapse prevention, or comparative effectiveness versus pharmacotherapy.” Balasubramaniam et al (2012): Yoga on Our Minds: A Systematic Review of Yoga for Neuropsychiatric Disorders. *Frontiers in Psychiatry*, 3: 117.

Whilst more studies have since been carried out, pooled results remain equivocal. Yoga as an adjunct to treatment is considered as most promising in depression and PTSD, with the caveat that “The value of integrating yoga into a treatment plan for patients with psychiatric disorders needs to be evaluated on an individual basis.” Meister & Becker (2018): Yoga for mental disorders. *Der Nervenarzt*, 89(9):994-998.

Other issues include the training and experience of yoga teachers and the frequency of home practice.

3 Yoga and Anxiety

Despite the popularity of yoga for relieving stress and anxiety in the general population, a 2016 review found few studies of yoga for clinical anxiety disorders. The available evidence was described as “promising” and “encouraging”. Uebelacker & Broughton (2016) Yoga for Depression and Anxiety: A Review of Published Research and Implications for Healthcare Providers. *Rhode Island Medical Journal*, 99(3), 20-22.

<http://www.rimed.org/rimedicaljournal/2016/03/2016-03-20-intmed-uebelacker.pdf>

An earlier review found several studies that all had positive results: “the eight studies reviewed here report positive findings for the use of yoga in OCD [obsessive-compulsive disorder], examination anxiety, snake phobia, anxiety neurosis and psychoneurosis, although the latter two diagnostic terms are no longer used. There were, however, many methodological inadequacies, and only the OCD study could be described as being methodologically rigorous.” Kiecolt-Glaser et al (2005) Yoga for anxiety: a systematic review of the research evidence. *British Journal of Sports Medicine*, 39(12): 884–891.

www.ncbi.nlm.nih.gov/pmc/articles/PMC1725091/pdf/v039p00884.pdf

The OCD study cited compared kundalini yoga with a combination of relaxation and mindfulness meditation, finding the former effective and the latter ineffective, but the two groups were very small with only 7 patients in each group completing 3 months of therapy. Shannahoff-Khalsa et al. (1999) Randomized controlled trial of yogic meditation techniques for patients with obsessive-compulsive disorder. *CNS Spectrum*, 4: 34–47.

A recent summarising review concluded that “yoga might be an effective and safe intervention for individuals with elevated levels of anxiety. There was inconclusive evidence for effects of yoga in [clinical] anxiety disorders.” Cramer et al (2018) Yoga for anxiety: A systematic review and meta-analysis of randomized controlled trials. *Depression and Anxiety*, 35(9): 830-843.

One type of yoga that has shown particular promise is Sudarshan Kriya Yoga (SKY), a breathing-based practice. In a study with a 6 month follow up period: “all the analyses have shown that SKY therapy significantly reduces the scores of anxiety and depression.” It should be noted that this study used an intensive protocol including daily practice. Doria et al (2015) Anti-anxiety efficacy of Sudarshan Kriya Yoga in general anxiety disorder: A multicomponent, yoga based, breath intervention program for patients suffering from generalized anxiety disorder with or without comorbidities. *Journal of Affective Disorders*, 184: 310-317. Another study of SKY by the same group in Italy found “Intensive breathing training using SKY approach improves anxiety and/or depressive disorders as well as cardiac autonomic control and cardiorespiratory coupling. These findings suggest that the SKY training may be a useful non-pharmacological intervention to improve symptoms and reduce cardiovascular risk in patients with anxiety/depression disorders.” Toschi-Dias et al: Sudarshan Kriya Yoga improves cardiac autonomic control in patients with anxiety-depression disorders. *Journal of Affective Disorders*, 214:74-80.

By contrast, a systematic review of hatha yoga in clinical anxiety found “there is not enough solid evidence for hatha yoga to be considered an effective treatment for mood and anxiety disorders. Therefore, no recommendations for clinical practice can be made.” Vollbehr et al (2018) Hatha yoga for acute, chronic and/or treatment-resistant mood and anxiety disorders: A systematic review and meta-analysis. *PLoS One*, 13(10): e0204925.

Further information about SKY is available at

https://www.researchgate.net/publication/235730217_Sudarshan_kriya_yoga_Breathing_for_health

4 Yoga and depression

Evidence supports the value of yoga in unipolar depression (Ueblacker & Broughton, as above 2016). A meta-analysis of 12 randomized controlled trials (RCTs) of yoga for clinical depression found yoga was significantly better than usual care, aerobic exercise or relaxation exercises in reducing depressive symptoms. Going further: “Despite methodological drawbacks of the included studies, yoga could be considered an ancillary treatment option for patients with depressive disorders and individuals with elevated levels of depression.” Cramer et al (2013): Yoga for depression: a systematic review and meta-analysis. *Depression and Anxiety*, 30:1068–1083. The same author subsequently backtracked to a more equivocal position, finding “some evidence for positive effects beyond placebo and comparable effects compared to evidence-based interventions. However, methodological problems and the unclear risk-benefit ratio preclude definitive recommendations for or against yoga as an adjunct treatment for major depressive disorder.” Cramer et al (2017): A systematic review of yoga for major depressive disorder. *Journal of Affective Disorders*, 213:70-77. Another review concluded “that there is potential benefit for yoga in young to midlife adults with depressive disorders or elevated depressive symptoms.” This review is useful in its coverage of other conditions as well. Duan-Porter et al (2016): Evidence Map of Yoga for Depression, Anxiety, and Posttraumatic Stress Disorder. *Journal of Physical Activity and Health*, 13(3): 281–288.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5459483/>

5 Yoga and Bipolar disorder

A review found no RCTs studying yoga in people with bipolar disorder. Ueblacker & Broughton (2016) Yoga for Depression and Anxiety: A Review of Published Research and Implications for Healthcare Providers. *Rhode Island Medical Journal*, 99(3), 20-22. An internet survey of bipolar patients who practised yoga reported predominantly positive and some negative effects: “When asked what impact yoga had on their life, participants responded most commonly with positive emotional effects, particularly reduced anxiety, positive cognitive effects (e.g., acceptance, focus, or “a break from my thoughts”), or positive physical effects (e.g., weight loss, increased energy). Some respondents considered yoga to be significantly life changing. The most common negative effect of yoga was physical injury or pain. Five [out of 70] respondents gave examples of specific instances or a yoga practice that they believed increased agitation or manic symptoms; five respondents gave examples of times that yoga increased depression or lethargy.” Uebelacker et al (2014) Self-reported benefits and risks of yoga in individuals with bipolar disorder. *Journal of Psychiatric Practice*. 20(5):345-352. <https://wolterskluwer.com/company/newsroom/news/health/2014/09/yoga-may-help-people-with-bipolar-disorder-reports-journal-of-psychiatric-practice.html>

6 Yoga and Schizophrenia

The Cochrane Database of Systematic Reviews lists four reviews investigating the value of yoga for people with schizophrenia. In a review of yoga versus standard care, the authors found some evidence that yoga practice led to improvements in mental state, social functioning and quality of life, but decided that the evidence is weak and should be interpreted with caution: “There is currently insufficient evidence to determine whether yoga is beneficial or not for people with schizophrenia.” Broderick et al (2015): Yoga versus standard care for schizophrenia. *Cochrane Database Systematic Review*, issue 10. CD010554.

The other three newer Cochrane reviews state similarly that research into yoga for people suffering with schizophrenia is in its infancy and that the available evidence is weak and insufficient to recommend including yoga in a package of care. Reading the actual studies gives a brighter perspective, for example: “Adults with schizophrenia being treated in a state psychiatric facility who participated in an 8-week therapeutic yoga program showed significant improvements in psychopathology and quality of life compared with controls. The findings of this study need to be confirmed in larger, more sufficiently powered studies with active control groups.” Visceglia & Lewis (2011): Yoga therapy as an adjunctive treatment for schizophrenia: a randomized, controlled pilot study. *Journal of Alternative and Complementary Medicine*, 17(7): 601-607. For those interested in this topic, a systematic review published in 2013 investigated a small number of RCTs involving only short-term outcomes, and offers a detailed analysis. Cramer et al (2013) Yoga for schizophrenia: a systematic review and meta-analysis. *BMC Psychiatry*, 13:32.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3608162/>

7 Yoga and Posttraumatic Stress Disorder (PTSD)

A systematic review of yoga for PTSD found only 7 RCTs delivering a sum total of low grade evidence. The authors concluded that “Only a weak recommendation for yoga as an adjunctive intervention for PTSD can be made. More high quality research is needed to confirm or disconfirm these findings.” Cramer et al (2018): Yoga for posttraumatic stress disorder – a systematic review and meta-analysis. *BMC Psychiatry*, 18: 72.

An earlier review of mind-body approaches found that although yoga had “moderate quality evidence from mostly small- to moderate-sized randomized controlled trials” it was an “insufficient level of evidence to support its efficacy.” Metcalf et al (2016): Efficacy of Fifteen Emerging Interventions for the Treatment of Posttraumatic Stress Disorder: A Systematic Review. *Journal of Trauma & Stress*. 29(1): 88-92.

Another review, of meditation and yoga, found both approaches to be beneficial, with small to moderate effect sizes comparable to those for medication, which is a second line treatment for PTSD. The authors noted that the results were similar to those found with the use of mindfulness meditation in depression. They commented that therapies not focusing on trauma may be more acceptable to some patients than first line cognitive-behavioural approaches. Gallegos et al (2017): Meditation and yoga for posttraumatic stress disorder: A meta-analytic review of randomized controlled trials. *Clinical Psychology Review*, 58: 115-124. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5939561/>

A study of American military veterans suffering with PTSD after the Afghanistan and Iraq wars investigated the potential of Sudarshan Kriya yoga. “Participants reported re-experiencing traumatic memories while in a breathing-induced, relaxed, physiological state. After the intervention, they reported that these traumatic memories no longer impacted them as strongly.” Seppala et al (2014): Breathing-based meditation decreases posttraumatic stress disorder symptoms in U.S. military veterans: a randomized controlled longitudinal study. *Journal of Trauma and Stress*. 27(4): 397–405. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4195227/>

A recent meta review of 13 earlier literature reviews examined trauma-related anxiety and depression as well as PTSD. It showed “that the evidence regarding yoga as an intervention for the effects of trauma as well as the mental health symptoms and illnesses often associated with trauma is encouraging but preliminary. Overall, the body of research is lacking in rigor as well as specificity regarding trauma. ...Nonetheless, the results yielded findings concerning how clinicians and service providers can use yoga in their own practices, which is an important step for building an evidence base in this area.” Macy et al (2018) Yoga for Trauma and Related Mental Health Problems: A Meta-Review With Clinical and Service Recommendations. *Trauma Violence & Abuse*, 19(1): 35-57.

8 Yoga and Eating Disorders

A paper on the subject of yoga and eating disorders addresses the question: “what can the practice of yoga offer the field of eating disorders in terms of prevention and treatment? Regarding prevention, preliminary research suggests that yoga may be effective in decreasing risk factors, and increasing protective factors, for eating disorders. Yoga was also found to be helpful in a small number of treatment studies. However, findings are not consistent across studies, which are limited in number, and due to the preliminary nature of this body of research, most studies have weaknesses in their designs (e.g. observational design, no control groups, or small sample sizes).”

Neumark-Sztainer (2014) Yoga and eating disorders: is there a place for yoga in the prevention and treatment of eating disorders and disordered eating behaviours? *Advances in Eating Disorders*, 2(2): 136–145.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4047628/>

9 Yoga and Attention Deficit Hyperactivity Disorder (ADHD)

Only 4 controlled studies investigating the effects of yoga practice on the symptoms of ADHD have been found, all of children. In a Taiwanese study, comparing yoga with no intervention, the authors found that the yoga group improved significantly, and concluded that yoga can increase sustained attention, interference control and attention shifting among children diagnosed with ADHD.

Chou & Huang (2017): Effects of an 8 week yoga program on sustained attention and discrimination function in children with attention deficit hyperactivity disorder. *PeerJ*, 5, e2883.

Another study reported on yoga for preschool children in California, aged 3-5. The authors concluded that “yoga was associated with modest improvements on an objective measure of attention and selective improvements on parent ratings. Yoga may be a promising treatment for ADHD symptoms in preschoolers.” Cohen et al (2018) The Effects of Yoga on Attention, Impulsivity and Hyperactivity in Pre-school Age Children with ADHD Symptoms. *Journal of Developmental and Behavioral Pediatrics*, 39(3): 200–209.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5871620/>

10 Suggested reading:

Yoga for Mental Health eds. Heather Mason and Kelly Birch. Handspring Publishing, Edinburgh 2018.