

## Review Analysis on Yoga as an Intervention on Students Stress and Anxiety Levels in School Settings

Raja Santosh Kumar Mohapatra<sup>1</sup> & Dr. Vijendra Prakash Kapruwan<sup>2</sup>

1. Research Scholar, Dept. of yogic Science, Shri Kushal Das University, Hanumangarh (Rajasthan)
2. 2Assistant Professor, Dept. of yogic Science, Shri Kushal Das University, Hanumangarh (Rajasthan)

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### Abstract

Anxiety and stress are becoming more common among youngsters as a result of the obligations placed on them at school and the need to be accepted by their peers. Students in preschool all the way through high school and even into their adult years might be impacted by this. According to the findings of the survey, anxiety and stress are the primary factors contributing to students' struggles with their mental health. Over the course of the last ten years, anxiety and stress have come to be experienced by a growing number of young people in India. According to estimates derived from a national survey conducted prior to the pandemic, among children aged 3–17 years old, 7.1% were currently dealing with anxiety issues, 7.4% were currently dealing with behavioral/conduct problems, and 3.2% were currently dealing with stress, with the prevalence of each disorder increasing with increasing age. The lifetime prevalence of mental disorders in adolescents is high, with approximately one in every four or five young people in the meeting the criteria for a mental disorder with the potential for severe impairment throughout life. In other words, the lifetime prevalence of mental disorders in adolescents is high. This might involve a person's low academic achievement, their absence from school, and several other unfavourable health effects throughout the course of their lives. These numbers, which are from before the COVID-19 epidemic, reflect a significant rise in comparison to previous years of the same kind, and they illustrate the underlying serious gap in addressing issues among youngsters. The practice of yoga is one of a kind since it brings together a person's thoughts and their body at the same time. To put it another way, those who practice yoga are making a conscious effort to direct their attention on the movements they are producing rather than the day-to-day stresses of life. Students have the chance to acquire skills such as mindfulness, resilience, and anger management via the practice of yoga, which is a physical and mental discipline. Multiple studies have shown that Yoga as an Intervention is effective in helping student learn to deal with stress, and anxiety all at once. However, analysis included a number of drawbacks, such as encompassing a diverse range of participants' ages, failing to differentiate across various treatment settings, and including several treatments that may not accurately represent Yoga as an Intervention principles. The present study's goal is to assess the impact of well-defined Yoga as an Intervention in educational settings with 12-18-year-olds, and to provide suggestions for further research.

**Keyword:** Students, yoga, anxiety, Stress

## Introduction

Yoga is a discipline that originated in India that aims to unite the practitioner's mind and body. Anyone of any age may practise yoga, and it is known to invigorate participants.[1,2] It is also a low-cost and non-invasive therapy method, in addition to being an enjoyable hobby. Scientific proof on the advantages of yoga for both healthy individuals and sick individuals is accumulating on a daily basis; as a result, this practise, which originated in eastern culture, is increasingly chosen by people in the western world.[3-8] Yoga has developed from eastern culture (Kelley & Kelley, 2020; Worby, 2014). One national survey that was carried out in the United States in 2017 found that one person out of every seven practises yoga, that the number of people who practise yoga is growing at a rate that is consistent with each passing year, and that the type of yoga that is practised the most frequently is Hatha yoga (NCCIH, 2022). Hatha yoga is the foundation for other types of yoga and aims to bring harmony to a person's life on all levels, including the physical, the mental, and the spiritual. When practising Hatha yoga on a consistent basis, the asanas have a powerful impact on and stimulate all of the body's systems. Hatha yoga helps to quiet and focus the mind via meditation, which in turn makes it possible to cultivate an inner comprehension, awareness, and acceptance of oneself (Govindaraj et al., 2016). The goal of yoga practitioners who engage in breathing exercises is to gain control of their breath, which is regarded as the source of life force in yoga. As a result of these qualities, yoga is useful in a variety of contexts, ranging from the treatment of stress to improvements in quality of life (Seki Oz, 2021).

Khan and colleagues (2018) carried out a study to investigate the impact that yoga has on anxious feelings. The participants in this research ranged in age from 18 to 55 years old, and all of them suffered from anxiety. The level of anxiety was determined with the use of the Hamilton anxiety scale. These cases were then randomised to be assigned to one of two groups: the study group or the control group. The research group performed a predetermined series of yoga exercises. Both of the groups were monitored, and the outcomes were compared, with yoga's independent variables serving as the independent variable and anxiety serving as the dependent variable. Chi-square and an independent t test were utilised in order to analyse the data. Following participation in the yoga programme, it was discovered that levels of anxiety had dramatically dropped ( $P=0.042S$ ). Therefore, one may draw the conclusion that yoga can lower levels of perceived stress and promote well-being to an even greater extent; therefore, it is recommended to practise yoga on a regular basis.

Dadashali and Rahmati investigated the effects of Sahaja-Yoga mindfulness exercises on the reduction of stress, anxiety, and depression in women who suffered from stress, anxiety, and depressive disorders. Their study was published in 2016, and it was focused on women who suffered from stress, anxiety, and depressive disorders. The design for the research included a preliminary test. The post-test was conducted without using a control group as a baseline. The statistical population for this study comprised seven hundred different women who visited the ShahidShirin health centre in Tehran. They participated in twelve

sessions each lasting two hours, and the training lasted for a total of three months. The depression, anxiety, and stress scale (DASS) was utilised in all three phases of data collection: the pre-test, the post-test, and the 3-month follow-up. The findings suggested that there was a significant difference between the pre-test and the post-test in terms of the decrease in levels of stress, anxiety, and sadness ( $p$  less than 0.01). After a follow-up period of three months, the same findings were achieved ( $p$  0.01). It would appear that the Sahaja Yoga mindfulness exercise programme, when used as a supplemental intervention in conjunction with other conventional treatments, may be beneficial when it comes to the therapy of emotional difficulties experienced by individuals, particularly women.

### **STRESS**

Feelings about the uncontrollability and unpredictability of one's life, the frequency with which one must deal with annoying hassles, the amount of change that is occurring in one's life, and the confidence in one's ability to deal with problems or difficulties are all factors that contribute to perceived stress.[9] The way a person reacts to stress is dependent on how they perceive the situation they are in, namely whether they view it as a challenge or a threat. In contrast, threatening stimuli or distress can result in negative outcomes such as anxiety, depression, social dysfunction, or even suicidal intention.[10-13] Challenging stimuli, on the other hand, can lead to good outcomes such as motivation and enhanced task performance. Not only does it have an effect on our ideas and feelings, but also on the way we model our behaviours. Overstressing oneself, on the other hand, not only leads to issues and pain but also

has the potential to have significant repercussions on individuals.[14-16] To be more specific, students experience stress as they transition into the wholly foreign environment of professional education. We are aware that stress may be a factor in the development of psychological illnesses, particularly when it is brought on by circumstances that are unpredictable and cannot be controlled. This "appears to be inherent in the transition from high school to college," according to Lisa Smith, director of the Center for Anxiety and Related Disorders at Boston University (BU). In accordance with the findings of a study that was carried out by the National Institute of Mental Health and Neuroscience (NIMHANS), 36% of teachers in Bangalore have symptoms of mental disorders. Around the world, one pupil out of ten is very distressed. According to the findings of an ILO research, [17-21] stress is responsible for more than fifty percent of all missed workdays in the world. There were a variety of findings from different studies that revealed that the degree of perceived stress varied based on the courses that the students are taking, and there are also variances that are connected to gender. It was shown that female students experience higher levels of stress and more health problems than male students.[22]

### **ANXIETY**

Anxiety is a common mental health condition that is characterised by feelings of worry, dread, or fear that are strong enough to get in the way of a person's ability to carry out their regular activities. Anxiety may be brought on by a variety of factors, some of the most common of which being phobias, panic attacks, and traumatic experiences. There are a few various ways that one might feel

anxious.[24-28] It is frequently accompanied by symptoms such as muscle tension, restlessness, weariness, and difficulty focusing one's attention. The most prevalent kind of mental illness seen in students attending colleges and universities is anxiety disorder.[29] Universities and colleges have also experienced a rise in the number of students seeking assistance for anxiety disorders, according to a study conducted by the Anxiety Disorder Association of America (ADAA). When a student is having panic attacks, can't sleep or calm themselves down, continually worries or obsesses over what's coming, or is suffering from other physical symptoms consistent with concern [30-35], we witness normal anxiety develop into distress in that student. Students who suffer from social anxiety frequently turn to substances or excessive drinking as a means of self-medication. Other warning signs include prolonged feelings of loss or despair, extreme anxiety or panic, social isolation or withdrawal from routine daily activities, thoughts of self-harm or suicide, giving away assets, changes in personal hygiene, and excessive use of alcohol or other substances.

### **Objective of the study**

1. To understand the philosophy of yoga and the advantages of practising it, it is helpful to first go through some of the more recent studies that have been conducted on the effects of yoga.
2. To investigate alternative or primary treatments for stress, anxiety, as well as the efficacy of mind-body practises and their consequences for those who are afflicted with these conditions in the modern society.

### **Research methodology**

Only findings from studies that were published between 2015 and 2021 were evaluated for this study, as the purpose of this review is to investigate the influence that yoga particularly has on stress, anxiety, and stress, anxiety in our modern culture. A combination of databases including PubMed, MEDLINE and PsychInfo were utilised to find these papers with the use of keywords and phrases such as “intervention of yoga,” “anxiety,” and “stress.” The search was limited in such a way that it would only include studies that were conducted with adults as participants, irrespective of gender or religious affiliation, and this was done to ensure that it would contain relevant information. Those that had been conducted with students in the age range of 12 to 18 years old were completely dismissed as invalid. This debate does not take into account studies that included people who were suffering from various diseases and/or mental health concerns, such as psychosis and obsessive-compulsive disorder, as well as health-related elements of physical fitness. Studies that involved persons who were suffering from various illnesses and/or mental health concerns were also excluded from our analysis. Studies that included pregnant and post-partum participants were also omitted because it is not unusual for this category of participants to experience stress and anxiety during that period of time. Studies that included participants who were not pregnant or who had recently given birth were also omitted. Studies that included participants who were not pregnant or who had recently given birth were also omitted. Only studies that incorporated traditional yoga into their intervention were considered for inclusion

in this review. As a result, the argument is supported by data from nine other research that were carried out between the years 2015 and 2021.

**Table 1 provides a summary of the studies that were selected as well as the interventions that were used.**

Authors	Description of Intervention	Findings
Bluth et al. [3]	Alternative high school for students who are at danger of dropping out. Learning how to breathe properly (L2B) 11 sessions; 20 minutes each; once each week (Instructor: Bluth) Control that is active; Class only for those who misuse substances CAMM, SCS-SF, SOC, STAI, SMFQ, and PSS are all self-reporting instruments.	YG saw a significant increase in her confidence as one of the many advantages of practising yoga; Developed new abilities that may be applied in everyday life to assist in the management of stress and stress;
De Manincor et al. [13]	RCT; CG: TAU – yoga was offered after the waiting period. YG: A 6-week yoga programme that included 30 minutes of vini yoga practise (asanas, pranayama, relaxation, mindfulness, and meditation) for 4.8 days each week.	A statistically significant improvement in patients' levels of sadness and anxiety, with YG demonstrating a more marked improvement than CG.
Doria et al. [16]	Pre-test and post-test; Group 1: medicine in addition to SKY and weekly self-help group; Group 2: SKY and weekly self-help group, but not medication 6 months in advance of the research Intervention: 10 sessions of two hours of SKY therapy over the course of two weeks, followed by weekly SKY therapy over the next six months (asanas, pranayama, chanting, prathyahara, dharana)	A decrease in the levels of anxiety and despair experienced by both groups There was no discernible difference in performance between the two groups.
Falsafi [18]	RCT stands for "randomised controlled trial," which stands for "controlled repeated measurements." YG: Hatha yoga for eight weeks; one session of seventy-five minutes every week; daily home practise for twenty minutes. CG: the lack of yoga practise MIG: mindfulness practise	Compared to CG, YG and MIG exhibited substantial reductions in sadness, stress, and anxiety. On the other hand, CG showed no significant improvement. There was no difference between YG and MIG, however MIG showed large increases in self-compassion ratings.
Falsafi and Leopard [17]	In a quasi-experimental design, which involves repeated measurements with the same group; Intervention: eight weeks of 90 minutes of	Significant improvement (p<0.05) in patients' reports of depressed symptoms.

	yoga each week (asanas, pranayama and mindfulness practice)	
Prathikanti et al. [37]	RCT, which stands for "randomised controlled trial;" YG: A yoga programme consisting of asana, pranayama, dharana, and prathyahara that lasts for eight weeks; each session lasts for ninety minutes; there are two sessions every week; TAU is utilised. CG: A workshop on the history of yoga that lasts for two hours each week for a total of eight weeks. There will be no medicine for either group. When compared to CG, YG demonstrated a statistically significant reduction in depressive symptoms (p = 0.034).	YG has a greater chance of entering remission. YG made a request for more sessions to be held each week and also asked for permission to attend a class on the history of yoga.
Shohani et al. [43]	Hatha yoga was practised for 60–70 minutes, three times per week, for a total of four weeks in this quasi-experimental study.	A statistically significant drop (p<0.001) in the levels of despair, tension, and anxiety among the YG.
Simon et al. [44]	RCT, which stands for "three-arm controlled single blind," YG: A 12 week programme (asana, pranayama, dharana, prathyahara, dhyana) 120 min each session CBT: a programme for treating GAD based on evidence CG: counselling for stress education	Both YG and CBT were effective in treating GAD; nonetheless, CBT is still considered the therapy of choice.
Uebelacker et al. [49]	RCT is an abbreviation that stands for "randomised controlled trial;" YG refers to a yoga programme that lasts for 10 weeks and consists of asana, pranayama, dharana, dhyana, and prathyahara. Each session lasts for 80 minutes and occurs once or twice a week. TAU. CG: A workshop on leading a healthy lifestyle lasting for ten weeks, with each session lasting sixty minutes and occurring either once or twice per week; TAU.	There was no significant difference between YG and CG; On the other hand, as compared to CG, YG had reduced levels of depressive symptoms, improved social and role functioning, and more favourable appraisals of their overall health.

All of the studies used quite different approaches to their design, ranging from pre-test and post-test designs to quasi-experimental and randomised controlled trials (RCTs). One of the randomised controlled trials (RCTs) was a stratified-randomised controlled with repeated measurements study

[36]. All of these investigations utilised rather modest sample sizes, with the lowest number of participants being 18 [37] and the highest number reaching 226 [38]. Although this evaluation is not restricted to only qualitative or quantitative research, the instruments that were utilised in each study had pretty substantial points of divergence from one another. In each of these research, yoga was utilised in a variety of different ways as a therapeutic intervention. Studies that utilised transcendental meditation, mindfulness meditation, or any other kind of meditation, as well as pranayama as stand-alone practises, are not included in this debate since those studies do not meet the inclusion criteria.

Only studies that incorporated elements of classical Hatha yoga, especially asana, pranayama, prathyahara, dharana, and dhyana, were considered for inclusion; however, the length of each class and the number of times it was practised varied greatly. One research had participants do Kundalini yoga; however, because it also covered all of the features of traditional hatha yoga, its findings were considered for inclusion in this review [38]. It is noteworthy to note that chanting was used as part of the intervention in another study [39], and this makes for an intriguing takeaway.

## Results

Positive results were seen in the majority of the studies examined (2015–2021), if not all of them; yoga has been shown to be useful in reducing the symptoms of a variety of mental health issues whether used in conjunction with or without of medication [36–44]. An summary of the study's intervention and findings may be found in Table 1. There are signs that practising yoga encourages changes in the neural pathways of the human brain, which has positive impacts on the functioning of the brain, despite the fact that the research durations for each and every one of the studies studied in this chapter ranged from four weeks to six months. Yoga practitioners exhibit less activity in the dorsolateral prefrontal cortex than controls, according to the data [45]. If one does yoga regularly, it would seem that the

alpha, beta, and theta brainwaves are engaged. These brainwaves have also been linked to benefits in mood and anxiety levels in addition to memory.

## Discussion

Each of the books examined for this chapter contained the four primary pillars of Patanjali's yoga, asanas, pranayama, prathyahara, dharana, and dhyana. Because they both entail a code of ethics that operate on both an intrapersonal (yama) and an interpersonal (niyama) level, yama and niyama, the first two limbs of yoga, are therapeutic in nature [46]. Yama includes asteya, which means "non-lying," brahmacharya, which means "non-excessiveness," ahimsa, which means "non-violence," satya, which means "non-stealing," and aparigraha (non-greediness). Examples of niyama attributes include saucha, which means "cleanliness," santosha, which means "contentment," tapas, which means "sacrifice," swadyaya, which means "self-study," and Ishvarapranidana (surrendering to the higher power). Although the yamas and niyamas were not included in any of these research' interventions, it is thought that these two limbs may have been casually included into the yoga sessions [47]. This is an important thing to remember because, even though none of these studies mentioned including the yamas and niyamas as part of the intervention, it is believed that it is standard practise to, for example, put ahimsa into practise with students in a timely manner specifically during the asana session. While intentionally pushing oneself to reach a challenging or dynamic pose is useful, it is not advantageous to utilise excessive force or behave recklessly in order to accomplish the pose. It should not be surprising that applying too much pressure to certain joints in the body might and may cause unexpected injury to the practitioner for the same reasons that apply to other forms of physical exercise. More significantly, whether in the full position or a reduced form, students are continually urged to bring their focus to the great delight and pleasurable emotions they are currently experiencing. This is true regardless

of whether they are holding the posture or not. Students are instructed to perform this whether they are in the full position or a reduced version of it. Santosha, one of the niyamas, is attained when a person intentionally decides to experience happy despite their current situation. Consequently, during a yoga session that takes place at the institution where courses are offered, the other yamas and niyamas are presented and discussed in this manner.

The details of the yamas and niyamas may have been accidentally overlooked by the instructors who were entrusted with leading the yoga sessions in the research trials that were examined in this chapter, which is probably why they were not highlighted in the papers that were published about them. Implicit factors are just as significant as explicit ones when it comes to making informed judgements, just like they are in any research. If the specifics of the yoga intervention for each trial had been disclosed, it would have been beneficial for the participant as well as the researcher and reader, especially if they were interested in learning more about the philosophical foundations of the yogic practise [47].

It is interesting that all of the studies that were examined showed favourable benefits in lowering the scores in stress, anxiety, and stress despite the small sample size, variability in the sample population, different duration of the intervention, and wide range of yoga teaching techniques. This is something that has to be thought about.

In one trial, medication was administered to both the yoga group (YG) and the control group (CG) during the intervention. The yoga group (YG) reported comfort in the practise as well as a substantial reduction in ruminations; individuals utilised yoga as a coping mechanism for negative thoughts and other stress-related symptoms in everyday life [40]. This may be attributable to the impact of yoga nidra (guided meditation), one of the elements of the yoga practise, which may have enhanced the participants' capacity for behaviour self-regulation. In retrospect, the

participants in this research acknowledged that practising yoga frequently had improved their self-esteem and that the exercise had grown to become an internal motivator that compelled them to return for more.

The same results were reached by another study that used sudharshankriya yoga (SKY) [39]. It is highly likely that SKY may be effective not only as a stand-alone therapy but also as an adjunct therapy for patients who are already receiving medical treatment because there was hardly any difference in the scores between the two groups (one group completed SKY while receiving pharmacotherapy, and the other completed SKY without pharmacotherapy). This study was particularly notable since chanting was incorporated into the yoga practise. It would imply that chanting has a healing effect on the mental and spiritual bodies in addition to the physical and emotional bodies. It provides something to focus on for the mind that is wandering. The chanting phase of this study was quite brief, but previous studies have demonstrated that chanting can cause deactivation in the amygdala, parahippocampal, and hippocampal brain regions [46]. The chanting element of this experiment was just briefly present. Chanting activates the auricular branches of the vagal nerves, which cause vibrations to occur at the cellular level. The body may experience this impact all throughout. These vibrations cause neuro-linguistic effects, which in turn lead to a state of serenity in the body and mind. Stress-prone people commonly suffer mental agitation, which is characterised by a disorganised mind that is swamped with countless irrelevant ideas. It is believed that the mantra's sounds have the power to muffle any negative thoughts that may be present in the brain. It is not feasible for the mind to make room for positive thoughts until these harmful ideas are banished.

Similar results were found in an eight-week yoga intervention experiment conducted in the United States on 18 people with anxiety, which showed a significant decrease in

depressive symptoms ( $p < 0.05$ ) [37]. However, despite the fact that the mindfulness practise group had significantly higher self-compassion scores, yoga and mindfulness practises were both found to be equally effective in reducing stress, anxiety, and stress in a randomised controlled trial with college students in the United States [36]. There was an intervention in the experiment as well, lasting a total of 8 weeks.

In a study conducted in Australia on a subsyndromal population, both the yoga group (YG) and the control group (CG) discovered that a six-week yoga intervention was effective in reducing the amount of depressive and anxious symptoms they experienced [41]. Rumination and psychological stress were reduced, and resilience was also increased. These changes improved mental health. It is important to highlight that the findings of this study showed that those who practised yoga had reduced their medication dose and the frequency of their out-of-control counselling visits. Although the reasons behind these behaviours are unknown and need additional investigation, the yoga intervention mode appeared to be helpful in managing the issue that these people were dealing with. Pharmacological treatments for stress and anxiety sometimes cause a delay of about four weeks before imposing significant mood advantages above placebo. Up to twelve weeks may pass before a medication's full antidepressant effect manifests. Time must thus unquestionably be considered while designing a yoga intervention. However, a half-hour of yoga practise five times a week should be sufficient for anybody and everyone, according to the results of this Australian study.

In a randomised controlled experiment conducted in San Francisco with a depressive and reclusive population, yoga was found to have comparable positive benefits [42]. Contrary to previous research, participants in the yoga group in this study not only asked for more yoga sessions, but also enquired about the availability of theoretical lessons on the

history of yoga, which were only provided for the control group. It would suggest that the study's participants were interested in both practising yoga for their own physical and mental well-being and learning about the physiological theories that underlie this age-old practise. This study found that certain asanas, including dhanurasana (bow pose), ardhakatchakrasana (half waist wheel pose), ardhachakrasana (half wheel pose), Bhujangasana (cobra pose), setubandhasana (bridge pose), sarvangasana (shoulder stand), and matsyasana (fish pose), were helpful in helping the study participants to better manage their anxiety. It's interesting to note that the bulk of these asanas put a strong emphasis on expanding the chest and heart area. These asanas seem to have helped with the control of depressive symptoms including grief, rage, and frustration. This is due to the fact that extending the chest and rib cage is a necessary step in order to properly oxygenate the lungs.

An intervention of yoga as a stand-alone therapy resulted in a reduction in anxiety, stress, and stress levels ( $p = 0.001$ ) in the participants who underwent 12 sessions of yoga over the course of a four-week period in an Iranian study that included 52 women with some type of mental health disorders but who were not receiving pharmacotherapy [43]. Women who were not getting medication took part in the trial.

In spite of the fact that there was indications that young adults had better social functioning and less indicators of stress, one research [44] was unable to detect a statistically significant distinction between the young adults' group and the control group. These perhaps beneficial effects may have been a byproduct of the yogic regimen's relaxation-related yoga practises. The relaxation techniques used in yoga are widely known for their capacity to reduce sympathetic activity and bring the autonomic nervous system's responses back into balance.

Finally, participants were assigned at random to receive either cognitive behavioural therapy (CBT) or kundalini yoga (KY) for a duration



of 12 weeks, while the control group (CG) was instructed to complete stress education in a recent clinical trial with three arms controlled by a single blind investigator. It was shown that the symptoms of generalised anxiety disorder significantly decreased in both the KY group and the CBT group. The researchers came to the conclusion that cognitive behavioural therapy (CBT) should remain the main treatment choice for anxiety disorders since the research also indicated that CBT appears to be more beneficial than yoga [38].

But in the vast majority of the studies examined for this chapter, if not all of them, they were constrained in some way. For instance, women made up the majority of participants in two of the studies (40, 43). Despite the fact that women are more likely than men to suffer stress [49], the sample sizes for women in these studies were not well balanced. Additionally, the bulk of the research's sample populations were not properly representative, and the findings were inconsistent. Since several studies lacked controls, it was challenging to tell whether the outcomes were the consequence of yoga's intervention or another factor. This made it challenging to establish whether yoga contributed to the results or whether another factor was at play. The bulk of the studies that were assessed here were challenged for a variety of reasons, despite the fact that RCTs are widely acknowledged as the gold standard of intervention research. Either inappropriate randomization was used, inconsistent teaching techniques were used, or the various yoga schools' variations in postures, breathing techniques, and meditation practises were too great.

Despite the limitations, it would appear that those who have benefitted from these yoga sessions may now have access to a new tool that might help them manage their tension, anxiety, and stress. Given that no adverse effects were discovered in any of the studies, it would seem that practising yoga is a risk-free practise.

## **Conclusion**

The fundamental limbs of Patanjali yoga, which are known as asanas, pranayama, prathyahara, and dharana and dhyana, were included into each and every one of the studies that were analysed for this chapter. The majority of studies, if not all of them, demonstrated substantial positive outcomes in lowering the scores of anxiety, and stress. Some of the limitations include heterogeneity in the sample population, insignificant sample size, varied durations of intervention, and different styles of yoga that were taught. Previous research has shown that the practise of asana, pranayama, dharana, and dhyana has the ability to still not only the mind, but also the body, which in turn lowers anxiety levels. These effects were seen in the studies that were reviewed in this paper.

Having stated that, an additional aspect to investigate is the amount of time (length) necessary for participants to learn the yoga asanas and the breathing methods, in particular for those whose flexibility is compromised. This is an important consideration. It is also crucial to consider how long it takes for the psychophysiological elements that are responsible for the unique mood advantages of yoga to mature and begin to exhibit a measurable impact on the participant. While other aspects of a yoga practise, such as the length of a yoga session and the frequency and length of time spent on each pose during a yoga practise, should be researched further, the choice of asanas practised during a yoga intervention should not be overlooked.

Students are encouraged to practise yoga on a daily basis for at least half an hour at the Yoga Academy. This is the case regardless of the students' mental or physical health issues. This is important not only to ensure that there is sufficient time to practise the majority, if not all of the limbs, but also to maintain a healthy mind and body and keep diseases at bay; this step is essential because studies have indicated that many people suffer from some form of anxiety and/or mood disorder at some point in their lives.

### **Some recommendations for practising at home**

The following are some straightforward yoga postures (asanas) and breathing exercises that can be performed anywhere from twice to three times each day. It is recommended that no food be consumed before to any practise. A suggestion would be to practise in the morning before dawn, in the evening before sunset, or in the early hours of the morning before going to bed. If food was ingested, wait at least two hours before engaging in physical activity again. It is essential to emphasise that none of these techniques may in any way take the place of taking prescription medicine. They are essentially complimentary activities that may be practised towards greater mental and physical health, as well as techniques that can be utilised to handle an unexpected assault of stress, anxiety, and/or a melancholy mood.

### **Poses for practicing yoga**

The Swaying Palm Tree Pose: Stand with your legs two feet apart from one another. The hands are brought into an inhaling position, rising vertically upward. During the exhale phase, the right side of the body is extended outward. This posture is maintained for two to three seconds. When we take a breath in, our torsos move toward the middle of our bodies. The torso is then extended laterally to the left as the exhale phase of the exercise begins. This movement to the right and left is considered to be one set. One can do as much as five sets of this asana, but it all depends on how much they are able to do.

To achieve the double angle stance, stand with your legs two to three feet apart and interlace your fingers behind your back. In this beginning position, take a slow and deep breath in through your nose. Exhale and then stretch the torso forward as much as you can. Bring the torso into a horizontal posture if the body is able to accommodate a longer stretch, and at the same time, gradually pull the hands away from the body. Holding this position for around five seconds while maintaining regular breathing is the first step in bringing the torso up to a vertical position. It is possible to

perform this stretch three times, gradually increasing the amount of time spent "holding" the position from five seconds to ten seconds between the second and third time around.

Standing with your legs hip-width apart is the starting position for the half-wheel posture. Position the palms of your hands behind your waist, with all of your fingers pointing down. This is the point from which we will begin. When you inhale, bend your torso rearward from the lumbar area as far as you can. After then, let out an exhalation and keep up your regular breathing as you hold this position for ten seconds. Take a deep breath in, then slowly return your torso to its starting position. This position can be performed anywhere from three to five times, depending on the individual's capabilities.

### **Methods of Inhalation and Exhalation**

Breathing in deeply while moving your hands: Stretch your hands out in front of you so that they are parallel to the ground while you are seated comfortably (either on the ground or on a chair). Both sets of palms are in close proximity to one another. This is the point from which we will begin. Immediately after taking a breath in, draw the palms of your hands away from each other and gently extend them all the way to your back. Hold for 2s. During the exhale phase, bring the palms of the hands together until they are in the beginning position. This is one set, and you may complete as many as ten sets in a calm and steady way while paying attention to your breath.

Sit in a comfortable posture and practise breathing through your alternate nostrils (on the floor or on the chair). When sitting on the floor in a cross-legged position, one might prop themselves up against the wall for support. Maintain constant contact between the tips of the index finger and the thumb during the whole practise by resting the palm of the left hand on the knee of the left leg with the palm facing upward. There is no tension put on the remaining three fingers as they are spread out. Put your right thumb over your right nose to block it. The index and middle

fingers can be folded in into the palm of the hand for convenience, but the ring and little fingers are allowed to remain in their natural position. This is the point from which we will begin. Take a few deep breaths in through your left nostril. After that, bring the ring and index fingers together and shut the left nostril. After then, take your right thumb off your right index finger and exhale entirely through your right nostril. Following that, breathe in through your right nostril. At the completion of the inhale, press the thumb against the right nostril to seal it, and then open the left nostril to begin the exhalation. This full cycle constitutes one round of breathing via the alternate nostril. One session of practise may consist of as many as ten rounds, but the practitioner must keep in mind that their inhaling and exhalation must not only be calm and steady, but also silent and under control.

The buzzing of the bee's breath: Take a seat in an upright yet relaxed position (on the floor or on the chair). The palms' back sides are resting on the knees, with the right hand palm resting on the right knee and the left hand palm resting on the left knee. This is the point from which we will begin. Take a deep breath in through both of your nostrils. Permit the cessation of the breath to happen naturally. The next step is to slowly let out your breath while making a buzzing sound like a bee. This concludes the first round. One session of practise can consist of as many as ten rounds, and one can gradually increase the total number of repetitions. Relaxation of the body and mind may be attained via the practise of each of these postures and breathing methods. One can practise each of the postures and

breathing methods described in this article during a single session; alternatively, one can practise only a handful of them.

#### **Limitations and future directions**

Due to the numerous shortcomings that were present in this research, the data that have been presented should be regarded with extreme caution. To begin, the levels of heterogeneity were significant; as a result, any inferences that may be drawn from this research should be regarded with caution. Second, the number of observations that were included in the subgroup analysis was relatively low, which meant that it was impossible to compare the results for stress, and anxiety based on the different control conditions. As a result, further studies with a greater number of observations are required. Third, because the sample of adolescents came from educational settings, it is possible that their levels of stress and anxiety were lower than those found in clinical samples. However, the effect of yoga in educational settings specifically for those who did meet criteria for stress and anxiety was not investigated in this study. It is necessary to do further research on the effects of practising yoga in school settings with teenagers who do satisfy the criteria for stress and anxiety. Fourth, the majority of the included studies only looked at pre- and post-data; as a result, the effect of the yoga does not take into account any follow-up data. The long-term consequences of practising yoga for teenagers in school settings should be the primary focus of future study, along with the particular impacts of the many types of yoga, when they are practised, and for how long

#### **Reference:**

1. Ajaya S. *Healing the Whole Person: Applications of Yoga Psychotherapy*. Pennsylvania: Himalayan Institute Press; 2008. p. 3.
2. Alter JS. *Yoga in Modern India: The Body between Science and Philosophy*. Princeton: Princeton University Press; 2004. p. 73.
3. Bluth, K., Campo, R.A., Pruteanu-Malinici, S., Reams, A., Mullarkey, M., & Broderick, P.C. (2016). A school-based mindfulness pilot study for ethnically diverse at-risk adolescents. *Mindfulness*, 7, 90–104.

4. Bridges L, Sharma M. The efficacy of yoga as a form of treatment for depression. *Journal of Evidence-Based Complementary & Alternative Medicine*. 2017;22(4):1017-1028. DOI: 10.1177/2156587217715927.
5. Brisbon NM, Lowery GA. Mindfulness and levels of stress: A comparison of beginner and advanced hatha yoga practitioners. *Journal of Religion and Health*. 2011;50(4):931-941. DOI: 10.1007/s10943-009-9305-3
6. Brooks SK, Webster RK, Smith LE, Woodland L, Wessely S, Greenberg N, et al. The psychological impact of quarantine and how to reduce it: Rapid review of the evidence. *Lancet*. 2020;395(10227):912-920. DOI: 10.1016/S0140-6736(20)30460-8
7. Brown RP, Gerbarg PL. SudarshanKriya yogic breathing in the treatment of stress, anxiety, and depression: Part I—Neurophysiologic model. *Journal of Alternative and Complementary Medicine*. 2005;11(1):189-201. DOI: 10.1089/acm.2005.11.189
8. Butterfield N, Schultz T, Rasmussen P, Proeve M. Yoga and mindfulness for anxiety and depression and the role of mental health professionals: A literature review. *The Journal of Mental Health Training, Education and Practice*. 2017;12(1):44-54. DOI: 10.1108/JMHTEP-01-2016-0002
9. Collins C. Yoga: Intuition, preventive medicine, and treatment. *Journal of Obstetric, Gynecologic, and Neonatal Nursing*. 1998;27(5):563-568. DOI: 10.1111/j.1552-6909.1998.tb02623.x
10. Conboy LA, Wilson A, Braun T. Moving beyond health to flourishing: The effects of yoga teacher training. *Scientific World Journal*. 2010;10:788-795. DOI: 10.1100/tsw.2010.87
11. Cramer H, Lauche R, Langhorst J, Dobos G. Yoga for depression: A systematic review and meta-analysis. *Depression and Anxiety*. 2013;30(11): 1068-1083. DOI: 10.1002/da.22166
12. Cuijpers P, Smit F, Bohlmeijer E, Hollon SD, Andersson G. Efficacy of cognitive-behavioural therapy and other psychological treatments for adult depression: Meta-analytic study of publication bias. *The British Journal of Psychiatry*. 2010;196(3):173-178. DOI: 10.1192/bjp.bp.109.066001
13. deManincor M, Bensoussan A, Smith C, Fahey P, Bouchier S. Establishing key components of yoga interventions for reducing depression and anxiety, and improving well-being: A Delphi method study. *BMC Complementary and Alternative Medicine*. 2015;15(1):1-10. DOI: 10.1186/s12906-015-0614-7.
14. de Manincor M, Bensoussan A, Smith CA, Barr K, Schweickle M, Donoghoe LL, et al. Individualized yoga for reducing depression and anxiety, and improving well-being: A randomized controlled trial. *Depression and Anxiety*. 2016;33(9):816-828. DOI: 10.1002/da.22502
15. Desai R, Tailor A, Bhatt T. Effects of yoga on brain waves and structural activation: A review. *Complementary Therapies in Clinical Practice*. 2015;21(2):112-118. DOI: 10.1016/j.ctcp.2015.02.002
16. Doria S, de Vuono A, Sanlorenzo R, Irtelli F, Mencacci C. Anti-anxiety efficacy of sudarshankriya 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*. 2015;184:310-317. DOI: 10.1016/j.jad.2015.06.011
17. Falsafi N, Leopard L. Pilot study: Use of mindfulness, self-compassion, and yoga practices with low-income and/or uninsured patients with depression and/or anxiety. *Journal of Holistic Nursing*. 2015;33(4):289-297. DOI: 10.1177/0898010115569351
18. Falsafi N. A randomized controlled trial of mindfulness versus yoga: Effects on depression and/or anxiety in college students. *Journal of the American Psychiatric Nurses Association*. 2016;22(6):483-497. DOI: 10.1177/1078390316663307

19. Garber J, Weersing VR. Comorbidity of anxiety and depression in youth: Implications for treatment and prevention. *Journal of Clinical Psychology*. 2010;17(4):293-306. DOI: 10.1111/j.1468-2850.2010.01221.x
20. Gautam S, Jain A, Gautam M, Vahia VN, Grover S. Clinical practice guidelines for the management of depression. *Indian Journal of Psychiatry*. 2017;59(1):S34-S50. DOI: 10.4103/0019-5545.196973
21. Govindaraj, R., Karmani, S., Varambally, S., &Gangadhar, B. N. (2016). Yoga and physical exercise - a review and comparison. *International Review of Psychiatry (Abingdon, England)*, 28(3), 242–253. <https://doi.org/10.3109/09540261.2016.1160878>.
22. Kalyani BG, Venkatasubramanian G, Arasappa R, Rao NP, Kalmady SV, Behere RV, et al. Neurohemodynamic correlates of ‘OM’ chanting: A pilot functional magnetic resonance imaging study. *International Journal of Yoga*. 2011;4(1):3-6. DOI: 10.4103/0973-6131.78171
23. Kelley, G. A., & Kelley, K. S. (2020). Yoga, health-related quality of life and mental well-being: a reanalysis of a meta-analysis using the quality effects model. *The Journals of Gerontology. Series A, Biological Sciences and Medical Sciences*, 75(9), 1732–1736. <https://doi.org/10.1093/gerona/glz284>.
24. Kendall PC, Safford S, Flannery-Schroeder E, Webb A. Child anxiety treatment: Outcomes in adolescence and impact on substance use and depression at 7.4-year follow-up. *Journal of Consulting and Clinical Psychology*. 2004;72(2):276-287. DOI: 10.1037/0022-006X.72.2.276
25. Kessler RC, Berglund P, Demler O, Jin R, Koretz D, Merikangas KR, et al. National comorbidity survey replication. The epidemiology of major depressive disorder: Results from the national comorbidity survey replication (NCS-R). *Journal of the American Medical Association*. 2003;289(23): 3095-3105. DOI: 10.1001/jama.289. 23.3095.
26. Kessler RC, Soukup J, Davis RB, Foster DF, Wilkey SA, Van Rompay MI, et al. The use of complementary and alternative therapies to treat anxiety and depression in the United States. *The American Journal of Psychiatry*. 2001;158(2):289-294. DOI: 10.1176/appi. ajp.158.2.289.
27. Manassis K, Mendlowitz SL, Scapillato D, Avery D, Fiksenbaum L, Freire M, et al. Group and individual cognitive-behavioral therapy for childhood anxiety disorders: A randomized trial. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2002;41(12): 1423-1430. DOI: 10.1097/00004583-200212000-00013.
28. Mohan AG, Mohan I. *Yoga Therapy: A Guide to the Therapeutic Use of Yoga and Ayurveda for Health and Fitness*. Boston: Shambhala Publications Inc; 2004. pp. 15-30.
29. Mrs. FarhaKhan , Dr. Jaishree Jain , Dr. Rashmi Gupta, Dr. Kusum Gaur (2018). Effect of Yoga on Anxiety: An Interventional study. *International Multispecialty Journal of Health (IMJH)*, Vol-4, Issue-2, pp 36-40.
30. Muktibodhananda S. *Hatha Yoga Pradipika*. 3rd ed. Munger: Yoga Publications Trust; 1998. p. 4.
31. Nanthakumar C. The benefits of yoga in children. *Journal of Integrative Medicine*. 2018;16(1):14-19. DOI: 10.1016/j.joim.2017.12.008
32. NCCIH. (2022, August 01) How popular is yoga in the United States? Yoga: what you need to know. National Center for Complementary and Integrative Health (NCCIH). Yoga: What You Need To Know | NCCIH (nih.gov)
33. Neria Y, Sullivan GM. Understanding the mental health effects of indirect exposure to mass trauma through the media. *Journal of the American Medical Association*. 2011;306(12):1374-1375. DOI: 10.1001/jama.2011.1358
34. Nichols N. How Does Yoga Work? [Internet]. 2021. Available from: [medicalnewstoday.com/articles/286745](https://medicalnewstoday.com/articles/286745) [Accessed: July 20, 2021]

35. Nyer M, O'Hair CM, Hopkins LB, Roberg R, Norton R, Streeter C. Yoga as a treatment for depression: Applications for mental health practitioners. *Psychiatric Annals*. 2019;49(1):11-15. DOI: 10.3928/00485713-20181203-01
36. Polsgrove MJ, Eggleston BM, Lockyer RJ. Impact of 10-weeks of yoga practice on flexibility and balance of college athletes. *International Journal of Yoga*. 2016;9(1):27-34. DOI: 10.4103/0973-6131.171710.
37. Prathikanti S, Rivera R, Cochran A, Tungol JG, Fayazmanesh N, Weinmann E. Treating depression with yoga: A prospective, randomized, controlled pilot trial. *PLoS One*. 2017;12(3):e0173869. DOI: 10.1371/journal.pone.0173869
38. Rubin GJ, Wessely S. The psychological effects of quarantining a city. *BMJ*. 2020;368:m313. DOI: 10.1136/bmj.m313
39. Salari N, Khazaie H, Hosseinian-Far A, Khaledi-Paveh B, Kazeminia M, Mohammadi M, et al. The prevalence of stress, anxiety and depression within front-line healthcare workers caring for COVID-19 patients: A systematic review and meta-regression. *Human Resources for Health*. 2020;18(100):1-14. DOI: 10.1186/s12960-020-00544-1
40. Salmon P, Lush E, Jablonski M, Sephton SE. Yoga and mindfulness: Clinical aspects of an ancient mind/ body practice. *Cognitive and Behavioral Practice*. 2009;16(1):59-72. DOI: 10.1016/j.cbpra.2008.07.002
41. Seki Öz, H., &Çiriş, V. (2022). The effect of hatha yoga on stress, life satisfaction and quality of life in nursing students. *Humanistic Atif Cite Perspective*, 4 (3), 606-622. <https://doi.org/10.47793/hp.1158945>.
42. Sengupta P. Health impacts of yoga and pranayama: A state-of-the-art review. *International Journal of Preventive Medicine*. 2012;3(7):444-458
43. Shohani M, Badfar G, Nasirkandy MP, Kaikhavani S, Rahmati S, Modmeli Y, et al. The effect of yoga on stress, anxiety, and depression in women. *International Journal of Preventive Medicine*. 2018;9(1):21-23. DOI: 10.4103/ijpvm. IJPVM\_242\_16
44. Simon NM, Hofmann SG, Rosenfield D, Hoepfner SS, Hoge EA, Bui E, et al. Efficacy of yoga vs cognitive behavioral therapy vs stress education for the treatment of generalized anxiety disorder: A randomized clinical trial. *JAMA Psychiatry*. 2021;78(1):13-20. DOI: 10.1001/jamapsychiatry.2020. 2496.
45. SomayehDadashali, Gholam Reza Sarami, ParvinKadivar (2016). [The Effectiveness of Sahaja Yoga Training on the Attention, Hyperactivity, Parental Stress, Academic Self-efficacy and Academic Achievements in Student with ADHD](#), [Journal of Exceptional Children, Volume:16 Issue: 1, 2016, P 77](#).
46. Stiles M. *Structural Yoga Therapy: Adapting to the Individual*. San Francisco: Red Wheel/Weiser; 2013. pp. 17-20
47. Telles S, Singh N, Gupta RKB, A. A selective review of dharana and dhyana in healthy participants. *Journal of Ayurveda and Integrative Medicine*. 2016;7(4):255-260. DOI: 10.1016/j.jaim.2016.09.004.
48. Tiller JWG. Depression and anxiety. *The Medical Journal of Australia*. 2013;199(6):S28-S31. DOI: 10.5694/ mja12.10628
49. Uebelacker LA, Tremont G, Gillette LT, Epstein-Lubow G, Strong DR, Abrantes AM, et al. Adjunctive yoga v. health education for persistent major depression: A randomized controlled trial. *Psychological Medicine*. 2017;47(12): 2130-2142. DOI: 10.1017/S0033291 717000575
50. Uher R, Mors O, Rietschel M, Rajewska-Rager A, Petrovic A, Zobel A, et al. Early and delayed onset of response to antidepressants in individual trajectories of change during treatment of major depression: A secondary analysis of data from the genome-based therapeutic drugs for

- depression (GENDEP) study. *The Journal of Clinical Psychiatry*. 2011;72(11):1478-1484. DOI: 10.4088/JCP.10m06419
51. Wang Y, Xu B, Zhao G, Cao R, He X, Fu S. Is quarantine related to immediate negative psychological consequences during the 2009 H1N1 epidemic? *General Hospital Psychiatry*. 2011;33(1):75-77. DOI: 10.1016/j.genhosppsy.2010.11.001
  52. Williams KA, Petronis J, Smith D, Goodrich D, Wu J, Ravi N, et al. Effect of Iyengar yoga therapy for chronic low back pain. *Pain*. 2005;115(1-2):107-117. DOI: 10.1016/j.pain.2005.02.016
  53. Woodyard C. Exploring the therapeutic effects of yoga and its ability to increase quality of life. *International Journal of Yoga*. 2011;4(2):49-54. DOI: 10.4103/0973-6131.85485
  54. World Health Organisation. Depression [Internet]. 2020. Available from: <https://www.who.int/news-room/fact-sheets/detail/depression> [Accessed: June 10, 2021]
  55. World Health Organisation. Suicide [Internet]. 2021. Available from: <https://www.who.int/news-room/fact-sheets/detail/suicide> [Accessed: June 20, 2021]