

## Effect of yoga on mental health of high school students.

Mr. Ashish Doot<sup>1</sup> & Dr. Shikha Sharma<sup>2</sup>

1. Student M.Sc. Clinical Psychology
2. Associate Professor Geetanjali Medical college and Hospital

*Received: 16.06.2023 Revised: 15.07.2023*

### Abstract

**Aims:** To investigate the Effect of yoga on the mental health of high school students.

**Methods:** This study was an experimental study with pre-posttest. To collect data, the questionnaire Pediatric Symptom Checklist -Youth Version (PSC-YR) was used. A sample of 150 students were randomly assigned to two equal group of yoga training and control group. For experimental group, yoga sessions were held for 12 weeks (3 time/weeks; 40-45 min each) by a yoga teacher.

**Results:** The results showed that the students in the yoga group experienced a significant reduction in Attention Problems ( $t=3.0742$ ,  $p=0.0025$ ), and Internalizing problems ( $t=3.4721$ ,  $p=0.0007$ ) but there was no significant change in externalizing problem ( $t=0.0839$ ,  $p=0.9333$ ) Comparing the mean differences in pre- and posttest scores between yoga and control groups, we found the yoga group significantly decreased attention problems and internalizing problems. Participants in the control group revealed no significant changes.

**Conclusions:** High school students experienced a reduction in attentional problems and internalizing problems in the yoga classes for 12 weeks, clinicians, administrators, and educators should offer yoga classes as a strategy to help students enhance their psychosocial functioning.

### Introduction

Yoga, a term from Sanskrit that means "union of mind and body," has been practiced for 5000 years in Eastern communities and has lately gained popularity in Western nations.<sup>6</sup> Yoga has recently been the subject of several medical and scientific research that have shown it to be quite effective in the treatment of various disorders.<sup>4</sup> The term "complementary medicine" describes a group of therapies and procedures that are not part of the mainstream of contemporary medicine.<sup>43</sup>

Multiple sclerosis, asthma, irritable bowel syndrome, cancer, hypertension, drug addiction, osteoarthritis, and mental health concerns are just a few of the ailments for which yoga has been shown in studies to have positive effects.

**The ultimate objective of Yoga** is a state of prolonged pure consciousness known as Moksha or Samadhi. Yoga is the practice of transcending the mind in order to know one's "true self" or "highest self." This pure consciousness experience is our genuine

essence. All mental and philosophical structures dissolve in this sense of release. To summaries, yogic philosophy is a crucial way of deepening one's yoga practice and achieving enlightenment.

Yoga's core principle is straightforward: mind, body, and spirit are all intertwined and cannot be easily separated. Nonetheless, there are a plethora of philosophical theories that might be useful in exploring the deeper qualities of the body, mind, and spirit. Learning and comprehending these concepts is critical to shifting our perspective of ourselves as distinct entities and recognizing the unitive condition.

Yoga philosophy, like Buddhism, maintains that spiritual ignorance causes pain and keeps us trapped in the circle of samsara (cycle of rebirth). With yoga, we may remove our ignorance through a variety of ways and paths. Yet, the core philosophical precepts of yoga Centre on the practice of mental discernment, detachment, spiritual understanding, and self-awareness.

Yoga's proposed mechanism of action is that asana increases flexibility by gently stretching the muscles. Savasana and other calming asanas aid in both physical and mental relaxation. The practice of pranayama aids with breathing regulation. According to yoga, one may regulate their thoughts by managing their prana.<sup>50</sup>

Yoga is a strategy to calm the mind or the restraint of the alteration of the mind-stuff, according to Hindu philosophy (Patanjali, 1978/1999). Yoga has several advantages. They are divided into three categories: bodily benefits, mental benefits, and spiritual benefits. Yoga's physical benefits include developing a toned, flexible, and

strong body, improving posture, increasing energy, aiding in the maintenance of a balanced metabolism, improving the functioning of the respiratory, digestive, endocrine, reproductive, and elimination systems, lowering blood pressure, improving lung efficiency, improving sleep, promoting cardiovascular and circulatory health, relieving pain, improving athletic performance, and improving balance.

Children of high school students may overcome challenges and succeed in their own lives with the correct help and tools. Children and young people throughout the world are exposed to a variety of new norms and possibilities because of globalization. Children nowadays are expected to do well in addition to having access to new resources. Families, schools, and the media, among other organizations, continuously offer excitement and expectations to children and adolescents. Young people's life might become stressful because of being exposed to new demands and expectations, particularly when it comes to how their performances are judged.

Children's exposure to media and time spent using it are both blatant signs of the next generation's shift in priorities and way of life. In 2013, it was frighteningly common for kids to use media devices for more than seven and a half hours every day.<sup>38</sup> Children all over the world are consuming media at an increasing rate and making it a significant part of their life by spending more time in front of televisions, computers, and mobile devices. A new social networking picture is presented by communications and education to make media accessible to youngsters.

Yoga practice among kids has been shown to improve focus, reduce stress, increase self-awareness, consciousness, self-regulation, behavioural and emotional maturity, and boost self-confidence in daily activities.

The major psychological benefits of Yoga are to calm the mind, attune people to their surroundings, improve concentration and mental clarity, reduce stress and anxiety, encourage positive thoughts and self-acceptance, and promote flexibility, followed by the spiritual benefits of awakening the spirit, building healthy spiritual awareness, promoting interdependence between mind, body, and spirit, and enhancing the concept of oneness of all things.

High school students' mental health is an important topic that has received more attention in recent years. Adolescence is a time of substantial physical, emotional, and social changes, and many teens have mental health issues.

### **How does the yoga work?**

Yoga allegedly has beneficial effects on the neurological system, cardiovascular system, and gene expression, according to many researchers. The vagal nerve is stimulated, which increases GABA (a neurotransmitter) action in the brain as well as the parasympathetic activity of the autonomic nervous system.<sup>49</sup> Movement and breathing have a favourable effect on cardiovascular health, much like other types of physical activity. Research showing long-term yoga practitioners' gene expression compared to

controls show that yoga has a favourable effect on immune cells' gene expression patterns.<sup>39</sup>

Slowing and deepening the breath is the secret to clearing the mind. Yoga is particularly beneficial for regaining mental stability, relaxation, and tranquillity since it uses this type of breathing. In this silence and calm, practitioners may connect internally.

Yoga also urges its practitioners to have an open heart. Many yoga thinkers believe that the goal of the entire practice is to connect to our hearts on a symbolic level. The heart is one of the seven chakras that make up the chakra system. Backbends, pigeon poses, and camel poses, among others, enhance the expansion of the centre of the chest, which is where the anahata chakra, or yogic heart centre, is located.

The amygdala is one of the primary areas where changes in the regulation of the serotonin transporter (5-HTT) can affect stress response. A positron emission tomography scan revealed significantly decreased amygdala 5-HT binding in PTSD, which was linked to greater levels of anxiety and despair in posttraumatic individuals, particularly those with diagnosed PTSD. As a result, aberrant 5-HT signalling within brain networks may be at the root of danger detection and fear learning.

While increases in serotonin and dopamine levels following meditation may explain at least some of the pleasant mood and reduction in stress, the reason for the anxiety-lowering impact of yoga practices may be tied to another neurotransmitter, specifically, GABA (GABA). After the yoga session, the GABA levels in the yoga

practitioners increased by 27%, whereas the comparison group exhibited no change. The impact magnitude was not assessed in this study. The second research by the same authors investigated whether increases in GABA levels are unique to yoga or are connected to physical exercise.<sup>10</sup>

### **Methodology**

The study was carried out in Alok School. The study was carried out in the department of Oncology with experimental pre-and post-research design including purposive random sampling method after permission was granted by the ethical committee of Geetanjali Medical college and hospital, Udaipur, Rajasthan and the Alok Senior Secondary School, Udaipur, Rajasthan. The study included 150 patients out of which 75 were given part of Control group who were not given the therapeutic intervention of Yoga. An Experienced yoga teacher evaluated all the students closely. The study lasted for six weeks.

There were no dangers associated with participating in the six-week intervention or with collecting dependent variable data. During the presentation to the participants in front of school authorities, this was communicated verbally to both the control and intervention groups. It was also noted again on permission forms.

After taking written permission from the principal of respective private school, consent from participants will be taken. A completely randomized group design of two groups of equal numbers will be adopted for this study. Making the use of table random numbers all the 150 subjects will be divided randomly into two groups which are.

Group–A (Practicing Yoga) and Group–B (Control) with equal in numbers. The blueprint of subjects' distribution has been presented in Table below.

### **OBSERVATION & RESULTS**

In the pretest and post-test phase (4 months), Yoga exercises were effective in reducing mental health issues ( $p < 0.001$ ), but there was a significant difference between the two experimental groups' pre and post-test for Pediatric Symptom Checklist - Youth Report (Y-PSC) ( $p > 0.05$ ). The findings additionally demonstrated that the Yoga significantly reduced subjects' attention problems and internalizing problems ( $p < 0.001$ ), but there was discernible difference between the two experimental groups and the control group in post-test and follow-up (4-month) scores ( $p > 0.05$ ). There was no significant difference found between the externalizing problems of experimental group and the control group for externalizing problems.

**RESULT TABLES:**

**TABLE NO.1: Pre & Posttest Comparison of Attention Problems in Control Group**

	N=75		Z – SCORE	P-VALUE
	MEAN	STANDARD DEVIATION		
<b>PRE</b>	4.19	1.67	0.0949	= 0.9245*
<b>POST</b>	4.21	1.77		

**TABLE NO.2: Pre & Posttest Comparison of Attention Problems in Experimental group**

	N=75		Z – SCORE	P-VALUE
	MEAN	STANDARD DEVIATION		
<b>PRE</b>	4.19	1.67	3.074	= 0.002*
<b>POST</b>	3.35	1.68		

**TABLE NO.3 Pre & Posttest Comparison of Internalizing Problems in Control Group**

	N=75		Z – SCORE	P-VALUE
	MEAN	STANDARD DEVIATION		
<b>PRE</b>	4.47	2.18	0.0756	= 0.9399*
<b>POST</b>	4.49	2.15		

**TABLE NO.4 Pre & Posttest Comparison of Internalizing Problems in Experimental group**

	N=75		Z – SCORE	P-VALUE
	MEAN	STANDARD DEVIATION		
<b>PRE</b>	4.25	1.95	3.4721	= 0.0007*
<b>POST</b>	3.25	1.56		

**TABLE NO.5 Pre & Posttest Comparison of Externalizing Problem in Control Group**

	N=75		Z – SCORE	P-VALUE
	MEAN	STANDARD DEVIATION		
<b>PRE</b>	4.47	2.18	0.5893	0.5566*
<b>POST</b>	4.27	1.98		

**TABLE NO.6 Pre & Posttest Comparison of Externalizing Problem in Experimental group**

	N=75		Z – SCORE	P-VALUE
	MEAN	STANDARD DEVIATION		
<b>PRE</b>	4.25	1.95	0.0839	= 0.9333*
<b>POST</b>	4.23	1.95		

**DISCUSSION**

Yoga has been proven to improve the quality of life in healthy and unwell

persons. According to review research, yoga is as effective as or more effective than exercise in improving a few mental and

physical health parameters such as stress, quality of life, emotional states, heart rate variability, pulmonary function, and so on. Because weight gain and toxicity are side effects of numerous pharmacotherapies, a meta-analysis indicated that yoga might be an effective and less toxic auxiliary treatment for serious mental illness. Yoga enhanced subjective well-being, mental health, and executive performance.

Yoga training programme was designed based on the following principles:

Yoga is an ancient science that is useful not only for disease cure but also for making and keeping already fit and healthy individuals more fit and healthy. Furthermore, breathing exercises (pranayama) and meditation have been shown to boost focus and performance.

Thirty minutes of yoga training enhances fitness and skill execution.

The training increases the endorphin level in the brain, which is essential for neurological activities, resulting in an increase in endurance and overall vigor of an individual, resulting in improved skill execution. Asana practice promotes physical and motor fitness. Asanas entail exercising various muscle groups at various joints and countless combinations, as well as providing massage to critical organs of the body,

which improves their functioning. Slow stretching and holding procedures in yogic postures promote flexibility, which is crucial for maintaining performance and avoiding injuries.

Yoga gurus firmly adhered to the principles of yoga as given in the Patanjali yoga sutra (Karambelkar, 1989). As a result, the patient completed the yoga exercises steadily and comfortably.

Because there is no indication in either the Patanjali Yoga Sutra or the Hath Yoga to repeat the asana numerous times, yoga exercises were performed with only one repetition. To emphasize mastery of the practice of yoga exercises, the participants were advised to hold them for short periods of time with stability and comfort.

Yoga gurus firmly adhered to the principles of yoga as given in the Patanjali yoga sutra (Karambelkar, 1989).

Because there is no indication in either the Patanjali Yoga Sutra or the Hath Yoga to repeat the asana numerous times, yoga exercises were performed with only one repetition. To emphasize mastery of the practice of yoga exercises, the participants were advised to hold them for short periods of time with stability and comfort.

For knowledge to be placed into short-term memory, one must retain attention via

practice. Encoding, retrieval, and memory are all tightly tied to attention and listening. Attention or focus and memory are two mental functions that are inextricably linked. In truth, many memory concerns have little to do with genuine memory skills. They result from an inability to focus on the work at hand.

Attention is a multidimensional neurological process that allows the central nervous system to interpret information from the external or internal environment in numerous ways. Attention is necessary for the brain to employ its limited resources for higher order processing of only salient stimuli and not irrelevant stimuli or information.

Most youngsters begin with feelings of anxiety, uneasiness, or concern before and during tests. This causes anxiety and tension. If not addressed, these emotions might lead to despair or dejection, especially in children in upper grades. When things get out of control, some youngsters consider suicide. Most youngsters are not taught how to deal with worry and tension, which may be accomplished easily with easy yoga methods.

Daily yoga practice facilitates learning by increasing efficiency and sharpening

memory. Yoga has long been shown to help both children and adults relax their minds and bodies. Children perform best when they are calm and comfortable, according to research. We can not only save youngsters from being depressed, but we can also enhance their confidence and capacity to perform. All of this may be accomplished simply by teaching them some simple but effective yoga and breathing practices.

Yoga practices begin by working with the body structurally, assisting in vertebral alignment, developing flexibility, and strengthening muscles and tendons. Internal organs are toned and regenerated at the same time, the epidermal, digestive, and cardiovascular systems are cleansed of toxins and waste matter, the neurological and endocrine systems are balanced and toned, and brain cells are fed. As a result, you'll have more mental clarity, emotional stability, and a stronger sense of self.<sup>30</sup>

Practices begin by working with the body structurally, assisting in vertebral alignment, developing flexibility, and strengthening muscles and tendons. Internal organs are toned and regenerated at the same time, the epidermal, digestive, and cardiovascular systems are cleansed of toxins and waste matter, the neurological and endocrine



systems are balanced and toned, and brain cells are fed. As a result, you'll have more mental clarity, emotional stability, and a stronger sense of self. Competence and empowerment.

The purpose of this study was to look at the effects of a 12-week yoga intervention on internalizing, externalizing, and attention issues in children utilizing the Pediatric Symptom Checklist-Youth Report (PSC-Y) as a measure. The results revealed that the experimental group had much less internalizing and attention issues than the control group, but there was no significant difference in externalizing problems between the two groups.

The findings imply that yoga practice may be an effective remedy for youngsters with internalizing and attention issues. This is consistent with earlier studies demonstrating that yoga can increase emotional regulation and attentional control, perhaps assisting youngsters in better managing internalizing and attentional issues. Yoga practice may help youngsters develop more awareness and control over their thoughts, emotions, and attentional concentration through physical postures, breathing methods, and meditation.

Given past studies demonstrating that yoga can be useful in reducing externalizing difficulties, the absence of substantial benefits on externalizing problems in the current study is rather surprising. It is probable that the current study's very small sample size hampered its ability to find substantial effects on externalizing difficulties. Furthermore, the intervention may not have been especially designed to address externalizing difficulties, and future research may benefit from using specialized approaches to treat these behaviors.

Overall, the current study demonstrates the potential of yoga as a supplemental solution for children who have internalizing and attention issues. Yoga may be an effective solution for youngsters who struggle with emotional regulation and attentional control, according to the research. It is crucial to stress that the current study has certain limitations, and that more research with bigger samples and longer intervention durations is required to validate and expand the current findings.

Internalizing variables include emotional symptoms such as worry, despair, and withdrawal that are directed inside and often go unnoticed by others, according to the PSC Youth Report. These symptoms may

include feelings of sadness or depression, excessive concern, or physical symptoms such as headaches or stomach problems.

In the PSC Youth Report, externalizing factors include behavioral symptoms such as aggressiveness, hyperactivity, and rule-breaking behaviour that are directed outward and often more obvious to others. Symptoms may include getting into arguments, disagreeing with people, or having difficulty sitting still.<sup>30</sup>

Of the screening of 150 children in screening sample, all 75 received a positive score on the PSC scale which is the experimental group, and all were secondary school students.

The Result Table 1 (p – score: = 0.9245; t – score: 0.0949) of the study represents the control

group and result table 2 (p – score: = 0.0025; t – score: 3.0742) accounts to experimental

group of the domain *Attention problem* which shows the values of mean, standard

deviation, t – score and p – score. In the result tables, it is observed that experimental group.

shows significant difference around attention problems which exhibits that.

individual has enhanced focus and attention such as difficulties with concentration and hyperactivity, self-confidence, self-acceptance, self-identity, feeling of worthiness and realization of potentialities.

Study of Result Table 3 (p – score: =0.9399; t – score: 0.0756) shows the control group and

result table 4 (p – score: =0.0007; t – score: 3.4721) accounts to experimental group of the

domain *internalizing problem subscales* which show the values of mean, standard deviation, t – score and p – score. In the

result tables, it is observed that experimental group shows significant difference in internalizing problem which exhibits that

individual has the ability to assess uneasiness, fear and concern among the students with lack of interest or pleasure and feeling of worthlessness and some questions about bodily symptoms such as headache.

The interpretation of result table 5 (p – score: =0.5566; t – score: 0.5893) of the study

exhibits the control group and result table 6 (p – score: =0.9333; t – score: 0.0839) accounts

to experimental group of the domain *Integration of Personality* which shows the values of

mean, standard deviation, t – score and p – score. In the result tables, it is observed that. experimental group shows not so significant difference in *externalizing problem subscales* which exhibits that individual has the Aggression, hyperactivity, and oppositional behaviour are examples of outwardly oriented behaviors that frequently interrupt social relationships. These are associated to emotional anguish.

Yoga practices have been found to be beneficial in resolving attention and internalizing difficulties, but have a weaker influence on externalizing problems, as stated above and noticed in the result tables of both the experimental and control groups. This implies that yoga may help create a positive attitude, as seen by optimism for the future and the capacity to see the good in everything, making people feel less stressed and more energized.

## **CONCLUSION**

This study looked explored how yoga affected high school students' mental health. The study's findings offer persuasive proof that high school students' mental health may be considerably enhanced by practicing yoga. The study found that a well-planned intervention led to improvements in several

mental health factors, including decreased stress levels, better emotional control, higher self-awareness, and improved overall psychological well-being.

The findings added to the expanding body of research outlining yoga's potential advantages as a comprehensive strategy for fostering mental wellness among high school students. Students can develop helpful abilities and coping strategies to deal with the obstacles they encounter during adolescence by including yoga in everyday life. Yoga is an excellent kind of exercise, but it also has several psychological and emotional health advantages.

The study also emphasizes how crucial it is to incorporate yoga programmes within the educational system, especially in high schools. Access to yoga courses can act as a useful preventative intervention and supplement established mental health support services, given the high frequency of mental health concerns among teenagers. Yoga in the classroom can contribute to the development of a caring and encouraging atmosphere that supports kids' resilience, general academic achievement, and well-being.

## **Conflict of interest**

There is no conflict of interests.

## Acknowledgement

### No financial support and sponsorship

The authors would like to thank you everybody who has participated in the study.

## References

1. Alexander G, Rollins K, Walker D, Wong L, Pennings J. Yoga for Self-Care and Burnout Prevention Among Nurses. *Workplace Health & Safety*. 2015;63(10):462-470.
2. Azami M, Shohani M, Badfar G, Nasirkandy M, Kaikhavani S, Rahmati S et al. The effect of yoga on stress, anxiety, and depression in women. *International Journal of Preventive Medicine*. 2018;9(1):21
3. Barnes PM, Powell-Griner E, McFann K, Nahin RL. Complementary and alternative medicine use among adults: United States, 2002. *Adv Data*. 2004:1–19.
4. Borji M, Otaghi M, Salimi E, Sanei P. Investigating the effect of performing the quiet time protocol on the sleep quality of cardiac patients. *Biomedical Research*. 2017;28:7076–80
5. C. C. Streeter, H. W. Theodore, L. Owen et al., “Effects of yoga versus walking on mood, anxiety, and brain GABA levels: a randomized controlled MRS study,” *Journal of Alternative and Complementary Medicine*, vol. 16, no. 11, pp. 1145–1152, 2010.
6. de Manincor M, Bensoussan A, Smith C, Barr K, Schweickle M, Donoghoe L 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.
7. Elstad T, Ulleberg P, Klonteig S, Hisdal J, Dyrdal G, Bjorndal A. The effects of yoga on student mental health: a randomised controlled trial. *Health Psychology and Behavioral Medicine*. 2020;8(1):573-586.
8. Gururaja D, Harano K, Toyotake I, Kobayashi H. Effect of yoga on mental health: Comparative study between young and senior subjects in Japan. *International Journal of Yoga*. 2011;4(1):7.
9. Khalsa SB, Butzer B. Yoga in school settings: a research review. *Annals of the New York Academy of Sciences*. 2016 Jun;1373(1):45-55.)
10. Lin S, Huang C, Shiu S, Yeh S. Effects of Yoga on Stress, Stress Adaption, and Heart Rate Variability Among Mental Health Professionals—A Randomized Controlled Trial. *Worldviews on Evidence-Based Nursing*. 2015;12(4):236-245.
11. Saatcioglu F (2013) Regulation of gene expression by yoga, meditation and related practices: A review of recent studies. *Asian J Psychiatr* 6: 74-77.)
12. Sethi JK, Nagendra HR, Ganpat TS. Yoga improves attention and self-esteem in underprivileged girl student. *Journal of education and health promotion*. 2013;2.
13. Streeter CC, Gerbarg PL, Saper RB, Ciraulo DA, Brown RP (2012) Effects of yoga on the autonomic nervous system, gamma-aminobutyric-acid, and allostasis in epilepsy, depression, and post-traumatic stress disorder. *Med Hypotheses* 78: 571-579.
14. *Swatmarama. commentary by Swami Muktibodhananda*. 3 rd ed. Hatha Yoga Pradipika, Munger, India: Yoga Publications Trust; 1998. p. 150.