

**EFFECTS OF YOGA AND SPORTS BASED VACATION
PROGRAM ON MENTAL HEALTH IN SCHOOL
CHILDREN - A COMPARATIVE STUDY**

A Dissertation submitted by

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Under the Guidance of

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Towards the partial fulfillment of

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[MSc in Yoga]

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TO

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CERTIFICATE

This is to certify that Sumithra Radhakrishnan submitting this literature review on “Depression, Anxiety and Stress”, and Experimental Research on **“Effects of Yoga and Sports based vacation program on Mental Health in School Children - a Comparative Study”** in partial fulfillment of the requirement for the Master of Science (Yoga) registered in Swami Vivekananda Yoga AnusandhanaSamsthana (S-Vyasa University) Bengaluru and this is a record of the work carried out by her in this institution.

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DECLARATION

I, hereby declare that this study was conducted by me at Swami Vivekananda Yoga AnusandhanaSamsthana (S-VYASA), Bengaluru, under the guidance of Dr. Kashinath G Metri, assistant professor, S-VYASA University Bengaluru.

I also declare that the subject matter of my dissertation entitled **“Effects of Yoga and Sports based vacation program on Mental Health in School Children - a Comparative Study”** has not previously formed the basis of the award of any degree, diploma, associate-ship, fellowship or similar titles.

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STANDARD INTERNATIONAL TRANSLITERATION CODEUSED TO
TRANSLITERATE SANĀKRIT WORDS

a	=	अ	ī a	=	ई	pa	=	प
ā	=	आ	ca	=	च	pha	=	फ
i	=	इ	cha	=	छ	ba	=	ब
é	=	ई	ja	=	ज	bha	=	भ
u	=	उ	jha	=	झ	ma	=	म
ü	=	ऊ	ī	=	ऀ	ya	=	य
ā	=	ऀ	ā	=	ऀ	ra	=	र
è	=	ऀ	ḍha	=	ḍ	la	=	ल
e	=	ए	òa	=	ड	va	=	व
ai	=	ऐ	òha	=	ढ	ṣa	=	श
o	=	ओ	ēa	=	ण	ñā	=	ष
au	=	औ	ta	=	त	sa	=	स
à	=	अ	tha	=	थ	ha	=	ह
ù	=	अः	da	=	द	kñā	=	क्ष
ka	=	क	dha	=	ध	tr	=	त्र
kha	=	ख	na	=	न	jī a	=	ज्ञ
ga	=	ग	gha	=	घ			

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CHAPTER 1: INTRODUCTION

1. Introduction:

1.1. What is Mental Health:

According to the World Health Organization (WHO), mental health is “a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community”.¹

The WHO further states that the well-being of an individual is encompassed in the realization of their abilities, coping with normal stresses of life, productive work and contribution to their community.²

According to the U.S. surgeon general (1999), mental health is the successful performance of mental function, resulting in productive activities, fulfilling relationships with other people, and providing the ability to adapt to change and cope with adversity. The term *mental illness* refers collectively to all diagnosable mental disorders—health conditions characterized by alterations in thinking, mood, or behavior associated with distress or impaired functioning.³

A person struggling with their mental health may experience this because of stress, loneliness, depression, anxiety, relationship problems, death of a loved one, suicidal thoughts, grief, addiction, ADHD, various mood disorders, or other mental illnesses of varying degrees, as well as learning disabilities.⁴ ⁵Therapists, psychiatrists, psychologists, social workers, nurse practitioners or physicians can help manage mental illness with treatments such as therapy, counseling, or medication.

1.2. Significance of Mental Health:

Mental illnesses are more common than cancer, diabetes, or heart disease. A study by the Government of India (2015) shows that 20% of Indian population (i.e., 26 crores) suffers from a mental disorder. Just four years back, the WHO report (2011) showed 15% of Indian population with mental disorders.⁶ Evidence from the World Health Organization suggests that nearly half of the world's population are affected by mental illness with an impact on their self-esteem, relationships and ability to function in everyday life.⁷ An individual's emotional health can also impact physical health and poor mental health can lead to problems such as substance abuse. Maintaining good mental health is crucial to living a long and healthy life. Good mental health can enhance one's life, while poor mental health can prevent someone from living an enriching life. According to Richards, Campania, & Muse-Burke, "There is growing evidence that is showing emotional abilities are associated with prosocial behaviors such as stress management and physical health." Their research also concluded that people who lack emotional expression are inclined to anti-social behaviors (e.g., drug and alcohol abuse, physical fights, vandalism, which are a direct reflection of their mental health and suppress emotions.⁸

1.3. Children and Mental Well-being:

Mental health and stability is a very important factor in a person's everyday life. Social skills, behavioral skills, and someone's way of thinking are just some of the things that the human brain develops at an early age. Learning how to interact with others and how to focus on certain subjects are essential lessons to learn from the time we can talk all the way to when we are so old that we can barely walk. However, there are some people out there who have difficulty with these kind of skills and behaving like an average person. This is a most likely the cause of having a mental illness. A mental illness is a wide range of conditions that affect a person's mood, thinking, and behavior. About 20% of people in the India, ages 18 and older, have been diagnosed with some kind of mental disorder. However, not much is said about children with mental illnesses even though there are many that will develop one, even as early as age three. The most common mental illnesses in children include, but are not limited to, ADHD, autism and anxiety disorder, as well as depression in older children and teens. Having a mental illness at a younger age is much different from having one in your thirties. Children's brains are still developing and will continue to develop until around the age of twenty-five.⁹

When a mental illness is thrown into the mix, it becomes significantly harder for a child to acquire the necessary skills and habits that people use throughout the day. For example, behavioral skills don't develop as fast as motor or sensory skills do. So when a child has an anxiety disorder, they begin to lack proper social interaction and associate many ordinary things with intense fear.¹⁰ This can be scary for the child because they don't necessarily understand why they act and think the way that they do. Many researchers say that parents should keep an eye on their child if they have any reason to believe that something is slightly off. If the children are evaluated earlier, they become more acquainted to their disorder and treatig it becomes part of their daily routine.¹¹ This is opposed to adults who might not recover as quickly because it is more difficult for them to adapt.

Mental illness affects not only the person themselves, but the people around them. Friends and family also play an important role in the child's mental health stability and treatment. If the child is young, parents are the ones who evaluate their child and decide whether or not they need some form of help. Friends are a support system for the child and family as a whole. Living with a mental disorder is never easy, so it's always important to have people around to make the days a

little easier. However, there are negative factors that come with the social aspect of mental illness as well. Parents are sometimes held responsible for their child's own illness. People also say that the parents raised their children in a certain way or they acquired their behavior from them. Family and friends are sometimes so ashamed of the idea of being close to someone with a disorder that the child feels isolated and thinks that they have to hide their illness from others. When in reality, hiding it from people prevents the child from getting the right amount of social interaction and treatment in order to thrive in today's society.¹²

1.4. Psychological Problems in School Children:

Schoolchildren's biggest health problems are related to mental health. According to various estimates, the prevalence of mental health problems among children varies between 10 and 30%. The most common disorders are depression, substance abuse, disturbance of attention, and eating disorders. Emotional problems are more common among girls. Boys' problems manifest in outwardly disruptive behavior.¹³¹⁴¹⁵¹⁶¹⁷¹⁸¹⁹²⁰

Mental health is fundamental to the good health and quality of life. It is defined by WHO as a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community.²¹ Positive mental health is seen as a resource which is essential to general well-being. The promotion of mental health is a more extensive concept than merely preventing mental health problems. Mental health promotion strives to find and enhance factors and processes that protect mental health and reduce factors harmful to it. Mental health promotion can improve people's survival skills and ability to feel empathy and, consequently, protect their mental health and improve their ability to support other members of their community with mental health problems.

An environment that promotes or hinders schoolchildren's mental health involves the person's entire mental, physical, and social environment, especially the school, home, and friends²². There is evidence of how mental health promotion in schools has positive effects on the age group. Taking into account the whole of the school community especially, environment and the families of the pupils as well as focusing on positive mental health and adequate lengths of the treatments are factors which contribute to the success of mental health promotion. The effects are personal, social, and economical.²³²⁴²⁵²⁶²⁷ Preventing mental health problems and doing mental health promotion have an effect in one's success in school and well-being in life in general. The mental health and behavioural problems of children and adolescents can often be seen as difficulties in later phases of their lives.²⁸²⁹³⁰³¹³²

Barry and Jenkins made an overview of the evidence from systematic reviews and several mental health promoting programmes. They named characteristics of successful school-based interventions. These are high-quality implementation, evaluation and sustainability and such

things as adopting a whole-school and a social competence approach, performing interventions over multiple years and having a strong theoretical base. Used theoretical foundations are mostly psychology theories such like child development theory or cognitive behavioural therapy but in many programs there is no theory basis at all.³³

This study is a part of a more extensive research to produce a theory of mental health promotion in the upper level of comprehensive school. In these schools, pupils' ages are from 12 to 16. This study aims at describing the concepts referring to the promotion of mental health from the schoolchildren's and their families' perspective and, consequently, facilitating the development of the practices of mental health promotion. In this study, families' perspective was studied by interviewing mothers of schoolchildren.

In this study, it was intended to especially highlight the perspective of the schoolchildren .Therefore, the analysis was left on the level of axial coding to produce and describe the concepts. After that, it is easier to develop practices and support their self-ruling ability.³⁴ Schoolchildren are the main targets of mental health promotion, which makes them key elements in the discussion on promoting mental health at school. Self-expression and self-rule are key factors for well-being; therefore, just being heard affects mental health and well-being.³⁵³⁶³⁷

CHAPTER 2: AN ANCIENT LITERATURE REVIEW

2. Ancient Literature Review

2.1 Introduction:

Sage Patanjali is the compiler of the Yoga Sutras a major work containing aphorisms on the practical and philosophical wisdom regarding practice of Raja Yoga. In this work, Patanjali compiled 195 sutras or concise aphorisms. Patanjali has briefly enumerated the basic techniques that modern psychiatry applies in therapy. Concept of stress as per Patanjali Yoga Sutras and its management. Patanjali's yoga can be called the ultimate psycho-psychiatric system. He has illustrated different methods to tackle the problems of the mind. Mind and its modifications as per Patanjali.³⁸

2.2 Concept of Stress according to Patanjali Yoga Sutras:

Stress according to yoga is imbalance. Imbalance is misery. Emotional imbalances in the form of strong likes and dislikes bring about imbalances in Prana (the vital energy) in the pranamaya kosa which percolates to the Annamaya kosa causing stress symptoms and hazards. The great sage Patanjali uses the term क्लेशः (kleśah) which aptly describes stress.

योगश्चित्तवृत्तिनिरोधः । प त यो १ । २

yogaś-citta-vṛtti-nirodhaḥ | pa ta yo 1 | 2

When you are in a state of yoga, all misconceptions (vrittis) that can exist in the mutable aspect of human beings (chitta) disappear.

The word *chitta* is derived from the basic idea of chit, which means to see. To be conscious of, to be aware. Hence *chitta* means individuals consciousness which includes conscious, sub conscious and unconscious state of mind (*Vedanta*). Here *chitta* represents the whole of the individual consciousness which is comprised of three stages

1. The sense or objective consciousness
2. The subjective or astral consciousness
3. Unconscious or mental state of dormant potentiality

The expression *nirodha* here means a process of blocking. It is an act of blocking the patterns of awareness not the awareness itself. It is a state where the psychological functions are cutoff the realm of individual awareness.

2.2.1. The Psychology of Yoga

Yoga is *Chitta-vritti-nirodah*, restraint of the mind-stuff or the psychological apparatus inside, generally known as the mind. The different ways of controlling the mind or restraining the *chitta* constitute the whole procedure of yoga. We have to understand the reasons why the mind has to be controlled. This introductory approach to the philosophical background of the practice of Yoga is necessary because often we are unable to convince ourselves that control of the mind is the most advantageous of all efforts. We also see that conviction driven into our feelings is of primary importance for the successful building up of the practice of yoga, just as the firm fixing of pillars in the ground is of vital importance for the raising of an edifice on them. We have to be planted firmly on the ground of unshakable conviction as to the necessity and the value of yoga. We should have no vacillating doubt in the mind. Having grounded ourselves firmly enough in this conviction, in this feeling that yoga is unavoidable in the course of the life of any individual, the methods of practice should now attract our attention in the manner required.

2.2.2. What is Mind?

How to control the mind? What is meant by the restraint of the mind stuff? We saw earlier that the mind is inseparable from its functions, *Vrittis* as they are called. The way in which our whole being reacts to the atmosphere outside is a *Vritti*, primarily speaking. We react to the entire world outside with the totality of our being. This reaction is the central *Vritti* or the psychic operation in us. For the purpose of the practice of yoga, we have to understand the mind as it is in itself, and as not we find it sometimes inadequately described in various schools of psychology. The mind is not something outside us, nor is it different from us. I am my mind and my mind is I. The body and the mind are not just inter-related but they are an organic stuff, forming a complete whole. Psychologists have tried to analyse the relationship between the mind and the body, under the impression they are two different things. *Vrittis* means circular, the consciousness as its

circular patterns, and the attitudes of the mind is chitta vritti. Yoga is the blocking of the patterns arising in all the dimensions of consciousness.

2.2.3. Vrittis and folds of Vrittis:

वृत्तयः पञ्चतय्यः क्लिष्टाक्लिष्टाः । प त यो १ । ५

vṛttayaḥ pañcatayyaḥ kliṣṭākliṣṭāḥ | pa ta yo 1 | 5

Vrittis classified into five main folds of five kinds. They are painful or not painful. The modifications of the mind are ten in all, five of these are painful and five are not painful.

प्रमाण विपर्यय विकल्प निद्रा स्मृतयः । प त यो १ । ६

pramāṇa viparyaya vikalpa nidrā smṛtayaḥ | pa ta yo 1 | 6

The fivefold modifications of the mind are:

- Right Knowledge
- Wrong Knowledge
- Fancy
- Sleep
- Memory

According to Patanjali Yoga sutras stress has been defined as *Kleshas*.

Sage Patanjali has classified *Klesha* as one of the chitta vrittis (modifications of the mind). The chitta vrittis are the binding factors which causes trauma of the mind. They are also the causative factors for the generation of Kleshas (afflictions). The Sanskrit word Klesha means affliction, pain or misery. But, the deeper meaning describes it as what causes pain, afflictions or misery.

2.2.4. Causes of Klesha:

अविद्यास्मितारागद्वेषाभिनिवेशाः क्लेशाः प त यो २ । ३

avidyāsmītārāgadveṣābhiniveṣāu kleṣāu (pa ta yo 2 | 3)

The lack of awareness of reality (Avidya), the sense of 'I' am ness (asmita), attractions (raga), repulsions (dvesa) and strong desire for life (abhinivas) are the great afflictions or causes of all miseries in life. Avidya has been described as the root cause for the manifestation of other four kleshas. A detailed picture reveals the fact that the nature of the other four kleshas will show not only that they can grow only on the soil of avidya but also that the five kleshas form a connected series of causes and effects. The states in which Klesha exist can be classified 1) dormant 2) attenuated 3) alternating 4) expanded. In dormant condition, the Kleshas are present in latent form. In attenuated condition they are very feeble. They are not active but can become active with mild stimulation in the fully expanded condition the Kleshas fully in operative condition. The alternating condition is that one in which two opposite tendencies overpower each other as in the case of the feelings of attraction and repulsion alternate, though fundamentally they are based on attachment. It is in the case of advanced yogis that the klesha are present in the dormant form. In the case of ordinary people, the kleshas are present in the other three conditions depending upon external circumstances. Overall the kleshas and vrittis influence each other.

2.2.5. Symptoms of Mental Disturbance:

दुःखदौर्मनस्याङ्गमेजयत्वश्वासप्रश्वासाः विक्लेष सहभुवः । प त यो १ । ३१

duḥkha-daurmanasya-āṅgamejayatva-śvāsapraśvāsāḥ vikṣepa sahabhuvāḥ | pa ta yo 1 | 31

The symptoms of mental disturbance are enumerated in verse 1:31.

Suffering, depression, nervousness, and agitated breathing are signs of this lack of clarity.

प्रच्छर्दनविधारणाभ्याम् वा प्राणस्य (प त यो १ । ३४)

prachchardanavidhāraṅābhyām vā prāṅsya (pa ta yo 1 | 34)

Irregular breathing is an implication of some disturbance in the mind or the heart. Watching our breathing provides the accessible test of suggestion that whatever we pay attention to changes in quality. The use of mind-full respiration in the Sutras and elsewhere in the yoga literature is described by the terms puraka and recaka. This linguistic distinction is maintained over the 16 centuries between the time of the Yoga-sutras (200 BCE) and the Hatha Yoga texts which are relatively late (1000-1600 CE).

2.2.6. Solution to overcome Mental Disturbance:

मैत्रीकरुणामुदितोपेक्षणाम् सुखदुःखपुण्यापुण्यविषयाणाम् भावनातक्षित्तप्रसादनम् ॥ (प त यो १ । ३३)

maitrékaruëämuditoupekñäëäm sukhaduùkhapuëäyäpuëäyaviññayäëäm
bhāvanātakñittaprasādanam || (pa ta yo 1 | 33)

By cultivating an attitude of friendship toward those who are happy, compassion toward those in distress; joy toward those who are virtuous, and equanimity toward those who are unvirtuous, lucidity arises in the mind."

The cure for this problem is chitta-prasadana, emotional purification or making the mind clear and pleasant. This term is most often associated with the four Brahma-viharas, friendliness (maitri), compassion (karuna), joyful good-mindedness (mudita) and indifference towards the shortcomings of others and ourselves (upeksha), which are known in Buddhism as the four great treasures. It also applies to the mindful application of many other practices: the yamas and niyamas, practices of asceticism (tapas) and mindful practice of asana. In asana, stress which has been stored in muscular tension is released through the process of relaxation and with regular practice (prayatna-shaithilya, II.47) .

प्रयत्नशैथिल्यादनन्तसमापत्तिभ्याम् । (प त यो १ । ४७)

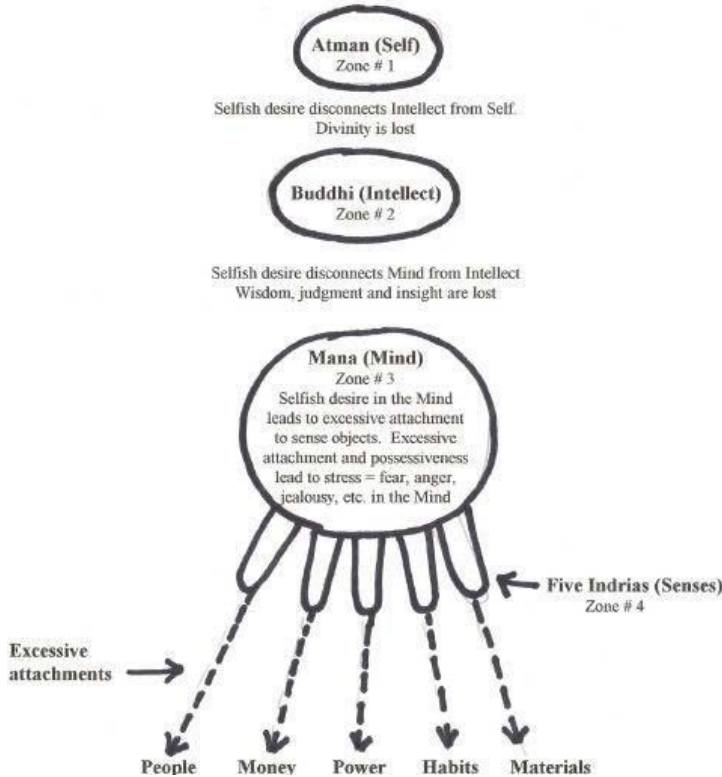
prayatnaçaitilyädanantasamäpattibhyäm | (pa ta yo 1 | 47)

A Sign of perfection is to be able to sit in one place, completely motionless and relaxed. Steady and comfortable posture comes through two means-Loosening of tension through attention and by breathing smoothly or by focusing on the infinite and allowing your attention to expand. From the attainment of a perfected posture, there arises an unassailable, unimpeded freedom from suffering due to the pairs of opposites such as heat and cold, good and bad, or pain and pleasure.

2.3 Stress according to Bhagavad Gita:

In the second chapter, Lord Krishna explains how suffering arises through the activity of the senses. By constantly thinking of the sense objects, man becomes attached to them. Attached thus he develops a strong desire to possess it. Disappointment in not possessing leads to anger. From anger comes delusion, and from delusion arises confusion of memory. From confusion of memory arises loss of intelligence or discriminative power which leads to devastation.

The Stressed Mind according to Bhagavad Gita



ध्यायतो विषयान्पुंसः सङ्गस्तेषूपजायते ।

सङ्गात्सञ्जायते कामः कामात्क्रोधोऽभिजायते ॥ २ । ६२

dhyāyato viṣhayān puṁsaḥ saṅgas teshūpajāyate

saṅgāt sañjāyate kāmāḥ kāmāt krodho bhijāyate ॥ 2 | 62

When a man thinks of the objects, attachments for them arises; from attachment desire is born; desire anger arises.

In this and the subsequent verse, Shree Krishna has given perfect and penetrating insight into functioning of the mind. He explains that when we repeatedly contemplate that there is happiness in some object, the mind becomes attached to it. For example, in a class there are a number of boys and girls, and they interact innocuously with each other. One day one boy notices something about one girl and starts thinking, "I would be very happy if she were mine." As he continuously repeats this thought in his mind, his mind becomes attached to her. He tells his friends that he is madly in love with her, and he is unable to study because his mind repeatedly goes to her. His friends ridicule him that they all interact with her in class, but none of them is crazy about her. Why is he losing his sleep and ruining his studies because of her? The fact is that he repeatedly thought that there was happiness in the girl, and so his mind became attached to her.³⁹

क्रोधोद्भवति सम्मोहः सम्मोहात्स्मृतिविभ्रमः ।

स्मृतिभ्रंशाद् बुद्धिनाशो बुद्धिनाशात्प्रणश्यति ॥ २ । ६३

krodhād bhavati sammohaḥ sammohāt smṛiti-vibhramaḥ |
smṛiti-bhranśhād buddhi-nāśho buddhi-nāśhāt praṇaśhyati || 2 | 63

Anger leads to clouding of judgment, which results in bewilderment of the memory. When the memory is bewildered, the intellect gets destroyed; and when the intellect is destroyed, one is ruined.

Anger impairs judgment, just as the morning mist creates a hazy covering on the sunlight. In anger, people commit mistakes that they later regret, because the intellect gets clouded by the haze of emotions. People say, "He is twenty years elder to me. Why did I speak in this manner to him? What happened to me?" What happened was that the faculty of judgment was affected by anger, and hence the mistake of scolding an elder was made.

When the intellect is clouded, it leads to bewilderment of memory. The person then forgets what is right and what is wrong, and flows along with the surge of emotions. The downward descent continues from there, and bewilderment of memory results in destruction of the intellect. And since the intellect is the internal guide, when it gets destroyed, one is ruined. In this manner, the

path of descent from divinity to impiety has been described beginning with contemplation on the sense objects to the destruction of the intellect.

2.3.1. Solution to overcome miseries:

रागद्वेषवियुक्तैस्तु विषयानिन्द्रियैश्चरन् ।

आत्मवश्यैर्विधेयात्मा प्रसादमधिगच्छति ॥ २ । ६४

rāga-dveṣha-viyuktaiḥ tu viṣhayān indriyaiḥ charan |
ātma-vaśhyair-vidheyātmā prasādam adhigachchhati || 2 | 64

But one who controls the mind, and is free from attachment and aversion, even while using the objects of the senses, attains the Grace of God.

The entire downward spiral leading to ruin begins with contemplating happiness in sense objects. Now, the urge for happiness is as natural to the soul as thirst is to the physical body. It is impossible to think “I will not contemplate happiness anywhere,” because it is unnatural for the soul. The simple solution then is to envision happiness in the proper direction, i.e. in God. If we can repeatedly revise the thought that happiness is in God, we will develop attachment toward him. This divine attachment will not degrade the mind like material attachment; rather, it will purify it. God is all-pure, and when we attach our mind to him, the mind will also become pure.

Thus, whenever Shree Krishna asks us to give up attachment and desire, he is referring only to material attachment and desire. Spiritual attachment and desire are not to be given up; in fact, they are most praiseworthy. They are to be cultivated and increased for purification of the mind. The greater the burning desire we develop for God, the purer our mind will become. The *jñānīs* who propound the worship of the undifferentiated attributeless *Brahman* do not understand this point when they recommend giving up all attachments. However, Shree Krishna states: “Those who attach their minds to me with unadulterated devotion rise above the three modes of material nature and attain the level of the supreme *Brahman*.” (*Bhagavad Gita* 14.26) He repeatedly urges Arjun to attach his mind to God in many verses ahead, such as 8.7, 8.14, 9.22, 9.34, 10.10, 12.8, 11.54, 18.55, 18.58, 18.65, etc.

Attachment and aversion are two sides of the same coin. Aversion is nothing but negative attachment. Just as, in attachment, the object of attachment repeatedly comes to one’s mind;

similarly, in aversion, the object of hatred keeps popping into the mind. So attachment and aversion to material objects both have the same effect on the mind—they dirty it and pull it into the three modes of material nature. When the mind is free from both attachment and aversion, and is absorbed in devotion to God, one receives the grace of God and experiences his unlimited divine bliss. On experiencing that higher taste, the mind no longer feels attracted to the sense objects, even while using them. Thus, even while tasting, touching, smelling, hearing, and seeing, like all of us, the *sthita prajña* is free from both attachment and aversion.

प्रसादे सर्वदुःखानां हानिरस्योपजायते ।

प्रसन्नचेतसो ह्याशु बुद्धिः पर्यवतिष्ठते ॥ २ । ६५

prasāde sarva-duḥkhānām hānir asyopajāyate |
prasanna-chetaso hyāśhu buddhiḥ paryavatiṣṭhate || 2 | 65

By divine grace comes the peace in which all sorrows end, and the intellect of such a person of tranquil mind soon becomes firmly established in God.

Grace is like a divine energy that floods into a person's personality. By grace, God who is *sat-chit-ānand* bestows his divine knowledge, divine love, and divine bliss. This entrenches the intellect, like the North Star, in the love, bliss, and knowledge of God. By God's grace, when we experience the higher taste of divine bliss, the agitation for sensual happiness is extinguished. Once that hankering for material objects ceases, one goes beyond all suffering and the mind becomes tranquil. In that state of internal fulfillment, the intellect becomes firm in its decision that God alone is the source of happiness and is the final goal of the soul. Previously, the intellect was accepting this only on the basis of knowledge as stated in the scriptures, but now it gets the experience of perfect peace and divine bliss. This convinces the intellect beyond any shadow of doubt, and it becomes steadily situated in God.

2.4. Concept of Mental Health in Ayurveda:

2.4.1. Introduction:

According to Ayurveda, stress is a state where the mind is imbalanced. The mind is considered to be balanced when it is not agitated, and is firm and stable. When the mind is in a stable state, the individual has the maximum potential to act or behave in ways that continue to keep the mind in a balanced state. More specifically, the mind has three states or “*gunas*”. They are “*sattva*” (knowledge, purity), “*rajas*” (action, passion) and “*tamas*” (inertia, ignorance). Mental disorders or imbalances are caused when “*sattva*” decreases and “*rajas*” and “*tamas*” increase. As “*sattva*” decreases, mental strength, determination and the power to determine (to distinguish right from wrong) also decrease. When such a state is prolonged, the mind becomes stressed. This may then lead to other mental disorders like anxiety, depression, fear, and nervous debility.

2.4.2. Definition of Mental Health in Ayurveda:

The ancient system of Ayurveda (science of life) offers a holistic approach to mental health that integrates the mind, body and soul. Ayurvedic theory of health is based on tridosha (primary life forces or biological humours). The five elements (panchabhuta) combine in pairs to constitute the three doshas—vata (ether and air), pitta (water and fire) and kapha (water and earth). The combination of these doshas inherited at birth indicates an individual's unique constitution. The dynamic balance of tridoshas creates health. Ayurveda defines mental health as a state of mental, intellectual and spiritual well-being. (CharakaSamhita-)⁴⁰

रोगस्तु दोष वैषम्यम् दोषसम्यमरोगता तेषाम् कायमनोभेदादाधिष्टनामपि द्विधा ।

रजस्तमश्च मनसो द्वौ च दोषवुद्धृतौ ॥ ४३ । ४४

rogastu doṣa vaiṣamyam doṣasamyamarogata teṣām kāyamanobhedādādhīṣṭṇāmapī dvidhā |
rajastamca manaso dvau ca doṣavuddhṛtau || 43 | 44

Increase or diminution of doshas causes diseases. Equilibrium of doshas gives health. Two seats of diseases are body and mind. Rajas and Tamas are the two doshas of the mind (Astanga Samgraha Sutrastana 1/43,44)

2.4.3. Manah Swarupa: (Concept of mind):

According to Charaka, 'that entity which is responsible for thinking is known as manas'.⁴¹ It is said to have been inherited from the previous birth and evolved from the combination of vaikarika and tejas ahankara. It is acetana (inactive) by itself but gets cetana (activeness) from atma (soul).⁴² It is called a dravya (substance). Although beyond sensory perceptions, it is called so since it has got both action and quality, coexistent within itself. It is connected to both jnanendriya (sensory centres) and karmendriya (motor centres). That is why it is called Ubhayatmaka (combined psychomotor entity).⁴³

2.4.4. Manoguna (qualities of mind):

Manas has two basic qualities viz., anutva (atomic nature) and ekatva (unitary nature). But it is difficult to understand these qualities directly and clearly. Therefore, manas is said to be constituted of 3 more operational qualities viz., sthava, rajas and tamas. These are understood by the role they play in the emergence of three different mental response patterns. For example, satwa or kalyana bhaga is understood by self control, knowledge discriminative ability, power of exposition, etc. Rajas or roshabhaga is understood by violence, despotic envy, authoritarianity, self adoration, etc. tamas or moha bhaga is understood by dullness, non-action, sleep etc.⁴⁴

2.4.5. Jnanotpatti (mechanism of knowledge):

Manas indicates both presence and absence of cognition. Knowledge occurs when the sequential relationship in the order of indriyarth (sensory objectives), indriya, (sense organ), and manas with atma (soul) is established.⁴⁵

2.4.6. Manasaroga Samprapti (pathogenesis of mental disorders):

Generally for all types of mental disorders, alpasatwa (weak mind), manovahasrota (channels conveying manas/conveyers of manas), manasadosa viz., Rajas and Tamas and tridosha viz., Vata, pitta and Kapha are said to be responsible, according to ayurveda (28-a). Alpasatwa which is the most important component is indicative of premorbid personality. Involvement of saririka dosa is more prominent in Ubhayatmaka vikara like unmada apasmara etc., than in manasavikara viz., kama, krodha, abhyasuya etc. Similarly manadosa will be more vitiated in the latter group than in the former.

2.4.7. Manoroga Nidana (Aetiology of mental disorders):

Emotional disturbances, volitional transgression, unwholesome food are said to be the causes of mental disorders, in general.

A critical study of the classics offer certain clinically useful descriptions

pertaining to the classification of manasavikara in ayurveda. The classifications are depicted in the following table.⁴⁶

Manasavikara (neurosis)	Nanatmajamanasavikara	Ubhayatmakamanasavikara	Kamajwara (fever caused by passion) krodhajwara (fever caused by anger) bhayajaatisara (diarhoea caused by fear) sokajaatisara (diarhoea caused by grief)
Abhyasuya (jealousy): bhaya (fear), chittodvega (anxiety): dainya (meanness of inferiority complex), harsa (exhilaration) kama(desire); krodha (anger): lobha (greed): mada (arrogance): mana (pride): moha (confusion): soka (grief): visada (anguish): and irshya (envy).	Chittodvega (anxiety) visada (anguish) asabdasra vana (auditory hallucinations) tama (withdrawal) atipralepa (prating) aswapna (insomnia) anavasthitacittatwa atrpti (discontentedness) tandra (stupor) atinidra (excessive sleep) bhrama (confusion) Ch. Su.20	Unmade (psychosis) Apasmara (epilepsy) Apatanaka, apatantraka (hysteria) atatwabhinivesa (obsessive syndrome): madatyaya (alcoholic psychosis): sanyasa (coma)	

2.4.8. Manasavikaranutapadana ((prevention of mental disorders):

Ayurveda lays due stress on various measures to be adopted in order to promote mental health and prevention of health and prevent mental disorders In order to be free from mental disorders Ayurveda prescribes that one should not allow oneself to become a victim of impulses like greed, grief, fear, anger, jealousy, impudence, vanity etc. Further, it declares that, one who speaks truth, , hurts none, avoids overstrain, fair spoken, always compassionate and given to wholesome eating, would enjoy the benefits of sound mental health.⁴⁷

2.5. Summary and Conclusion:

In modern science the concept of stress is understood in the perspective of physiological changes in human body. Whereas the Yoga and Upanishadic literature elaborately describe the origin of stress as imbalances at various levels of human existence starting from the subtle level of manomaya kosa grossifying to diseases at annamaya kosa via disturbances produces at pranamaya kosa level. The root cause of these disturbances is stated as the ignorance of man about his real nature. It is termed as Avidya in Patanjali yoga sutra. The Bhagavad Gita, one of the highest revered ancient Indian scripture, precisely pins down the origin and development of stressful situation to the duo of lust and anger paving way to a cascade of events degenerating to total destruction of man. Sri krishana says from their very birth all beings are delude by the bewitchment of the pairs of opposites like pleasure and pain, which spring from the instinctive feelings of attraction and aversion for them. That is way they fail to see the truth and wallow in the mire transmigratory existence.

CHAPTER 3: SCIENTIFIC LITERATURE REVIEW

3.1. Yoga and School Children:

The ancient practice of yoga helps children and young people cope with stress and thus contribute positively to mental health. In a recent book on yoga education in India, the author claims that “in a nutshell, yoga is a powerful medium for developing the personality of children and making them capable of facing the present-day challenges and problems”.⁴⁸ In her review article, “Effect of Yoga on Mental Health in Children,” one of the world’s most prominent yoga researchers, Shirley Telles, concludes that yoga improves children’s physical and mental well-being.⁴⁹ Similarly, the Harvard professor Sat Bir Khalsa⁵⁰ finds that yoga in schools helps students improve resilience, mood, and self-regulation skills pertaining to emotions and stress. Thus, yoga is an important life skill tool for children and young people to cope with stress and self-regulation in a life-long perspective.

As researchers and responsible citizens concerned with children and young people’s healthy development, what can we do to provide a happy environment and opportunities for them to develop their maximum potentials? With this profound question confronting us, we would like to provide the arguments for choosing yoga. Short-term solutions oftentimes involve pharmaceutical treatments for children with mental health problems, which could leave them to face the immediate and long-term negative effects of medication.⁵¹ Thus, we must seek other solutions comprising empowerment to give children and young people the tools to develop self-reflection, self-protection, self-regulation, and holistic self-development.

The increased global interest in yoga in recent decades is primarily due to the expectancy that yoga can calm the mind and increase overall health and well-being. Children’s mental health and well-being include developing healthy relationships with peers and teachers, and being able to self-regulate emotionally, mentally, and behaviorally . Yoga is an ancient Indian practice, which has been spread all over the world, and is even being revitalized in India itself. Yoga consists of certain postures (*asanas*), regulated breathing techniques (*pranayamas*), hand poses (*mudras*), and meditation. There is experiential knowledge on which poses are appropriate for different bodily functions. Yoga’s positive impact on the physical and mental health of individuals and their well-being has been an established truth in the ancient as well as contemporary yoga

literature.⁵² The recent scientific research on yoga provides empirical evidence for some of these claims, and specifies that certain yoga practices are beneficial for the mental and physical health of children and young people.⁵³⁵⁴

Yoga can be an appropriate scientific intervention in childhood and youth as a stress alleviator, especially in the school setting. The mentioned study conducted by Khalsa on high school students does provide evidence of yoga's positive influence on them for emotional balance and stress alleviation. Yoga is also expected to help younger children and youth increase self-regulation and thus, facilitate their well-being, positive social interactions, and school performance. Other academic research suggests that yoga has significant health potentials and is especially beneficial for coping with stress .⁵⁵

The evidence of yoga practice among children indicates improved benefits in concentration, stress alleviation, self-awareness, consciousness, self-regulation, behavioral and emotional maturity, and self-confidence in everyday life. There are also some proofs where yoga has worked as an adjunct to medical treatment of mental illness with positive effects. Yoga as a stand-alone therapy requires further research, although there are quite affirmative indications.

3.2. Yoga for Children with Stress:

Yoga can be a comprehensive approach to stress, something which is needed in the often tension-filled lives of children today.⁵⁶ Yoga can help foster motivation, cultivate internal locus of control, improve sleep, and generally encourage healthy and balanced living. As yoga often results in improved focus and concentration, regular practice is frequently accompanied by better academic performance.⁵⁷ Yoga has also been shown to help children with attention problems,⁵⁸ as well as to support executive function development.⁵⁹ A number of studies have also suggested that yoga can assist children with special needs.

Yoga has been found to have physiological benefits for children through rehabilitation processes.⁶⁰ Clinical studies also indicate that yoga improves academic performance and emotional balance.⁶¹ The mental benefits of yoga relate to calming the heart rate, which signals the brain to activate the parasympathetic nervous system. Similarly, yoga can guide relaxation because it reduces sympathetic activity.⁶² The sympathetic nervous system (fight or flight) is often engaged when children, similar to adults, are exposed to sensory overload. However, when the parasympathetic nervous system is activated, it increases our ability to focus and learn. Yoga is also said to reduce anxiety in young people as well as in seniors.⁶³ Thus, yoga assists healthy development and life-long learning.

Research on Yoga for Children and Young peoples health and well being. discusses yoga as a potential tool for children to deal with stress and regulate themselves. Yoga provides training of mind and body to bring emotional balance. Research argues that children and young people need such tools to listen inward to their bodies, feelings, and ideas. Yoga may assist them in developing in sound ways, to strengthen themselves, and be contributing social beings.⁶⁴

3.3. Yoga for Children with Anxiety:

Given the research regarding yoga with children and yoga in general, it may be that yoga is a successful alternative approach to treating children who may suffer some form of anxiety. Children today come face to face with high psychological demands and pressure in their everyday lives (Berger et al., 2009). Yoga offers a calming and quiet approach to their otherwise loud and high energy life. In a children's yoga study done by Gervais (2003), it was reported that after a yoga session with children in a classroom, the children appear to still have high energy, but also relaxed – “not bouncing all over the place”. Given that yoga encourages slower breathing, this may be why yoga is effective for children with anxiety. There have been several studies suggesting that practicing yoga reduces anxiety. In a study done by Telles, Gaur and Balkrishna (2009),⁶⁵ after participants followed a yoga curriculum which included two yoga sessions a week for three months, it was reported that there was a decrease in perceived stress and anxiety. Woolery, Myers, Sternlieb, and Zeltzer (2004),⁶⁶ studied young adults who suffered from mild depression and anxiety and found a significant decrease in negative symptoms when compared to a control group who did not complete the yoga program. Likewise, Berger et al. (2009)⁶⁷ found that students reported feelings of stress before completing a school yoga program; and after completing the yoga the students reported being able to calm themselves down.

3.4. Yoga for Children with Depression:

Depression and anxiety often go hand in hand. It is reported that the two occur together up to 60% of the time (NASP, 2010). When a child has both depression and an anxiety disorder, it is likely that his or her cognitive functioning is in danger. Anxiety consists of similar symptoms to attention deficit hyperactivity disorder (ADHD), like difficulty concentrating on tasks and performing school work. Differentiating between these two disorders is crucial, as children who suffer from anxiety left untreated are at a higher risk of developing a substance abuse problem or ultimately suicide (ADAA, 2012).⁶⁸ Three child and adolescent studies were identified that evaluated yoga as a treatment intervention for anxiety. An intervention that combined yoga postures, rolling pin massage, and progressive muscle relaxation intervention was used with 40 psychiatrically hospitalized adolescents diagnosed with adjustment disorder and depression.⁶⁹ Using a within-subjects pretest/post-test design, the combination intervention was administered once to assess its immediate effects. The yoga participants (and not the controls) reported decreased anxiety and increased positive affect, and they were observed to show less anxious behavior and fidgeting. The subjects diagnosed with adjustment disorder and one-third of those diagnosed with depression had reduced cortisol levels post intervention.

3.5. Prevalence of Depression, Anxiety and Stress among Children:

A study conducted from September 2014 to October 2014, among higher secondary school students of Imphal with sample size of 750. Seven schools were randomly selected, and all the students in that school were enrolled in the study. The study showed that there is prevalence of depression, anxiety, and stress among 830 valid respondents were 19.5%, 24.4%, and 21.1%, respectively. In total, 81.6% of the respondents had at least one of the studied disorders and 34.7% of the respondents had all the three negative states. The prevalence of depression, anxiety, and stress were high among females and were significant for anxiety ($P = 0.00$) and stress ($P = 0.04$). The prevalence of depression and stress were significantly higher among 12th standard students with P-values of 0.00 and 0.02. The study showed that The prevalence of depression, anxiety, and stress were high with anxiety and stress significantly higher among females, whereas prevalence of depression and stress were significantly higher among 12th standard students.⁷⁰

Another study conducted with a data of 450 students of ages 11- 17 years was randomly collected. from a higher secondary school in India.. Girls and boys were included and compared in this study. Interventions like Relaxation for Body and Mind, Breathing exercise and Anger Reversal technique were administered 1 hour per day for 4 weeks .The result showed that there are higher number of students with above average levels of Stress, Anger and Anxiety among school children. The intervention program was found to be highly rewarding for Girls and Boys. Girls were highly benefited and boys were found performing better in academics.⁷¹

Present study is in line with the studies done earlier and the results showed that there is prevalence of depression, anxiety and stress among the surveyed school children.

3.6. Table for Scientific Literature Review:

Sl No	Author / Journal / Year of publication	Title of the Study	Duration of the Study	Variables	Results	Discussion
1	Ingunn Hagen,Usha S.Nayar/Journal frontiers in Psychiatry/2004	Yoga for Children and Young People's Mental Health and Well-Being: Research Review and Reflections on the Mental Health Potentials of Yoga	Longitudinal study	Mental Health	P<0.001	yoga as a potential tool for children to deal with stress and regulate themselves
2	Khalsa SB,Hickey Schultz L,Cohen D,Steiner N,Cope S/Behavioral Health Serv/2012	Evaluation of the mental health benefits of yoga in a secondary school: a preliminary randomized controlled trial.	11 weeks	Mental Health	P<0.001	Yoga has the potential of playing a protective or preventive role in maintaining mental health.
3	Shirley Telles,Nilkamal Singh,Abhishek Kumar Bharadwaj,Ankur Kumar,Acharya Balkrishna/Child Adolescent Psychiatry Mental Health/2013	Effect of yoga or physical exercise on physical, cognitive and emotional measures in children: a randomized controlled trial	98 students, 3 months	cognitive performance, self-esteem, and teacher-rated behavior and performance, in school children.	P<0.001	Yoga and physical exercise are useful additions to the school routine, with physical exercise improving social self-esteem.
4	K Satish Kumar,Brogen Singh Akoijam/Indian Journal Community Medicine/2014	Depression, Anxiety and Stress Among Higher Secondary School Students of Imphal, Manipur	300 students, 1 month	Depression, Anxiety, Stress	Anxiety p=0.00, Stress p=0.04	study indicated a high prevalence for symptoms of depression, anxiety, and stress with 81.6% of the students reported symptoms of at least one of the three studied disorders
5	Dr.Radhaika Taroor/2011	Prevalence Of Stress, Anxiety and Anger among School children	Stress, Anxiety and Anger	4 weeks	P<0.001	research provides empirical evidence that there are a higher number of students with above average levels of Stress, Anger and Anxiety among school children
6	Berger DL,Silver EJ,Stein RE/Alternative Therapeutic Helath Medicine/2009	Effects of yoga on inner-city children's well-being: a pilot study.	Children's well being	164 students, 12 weeks	P<0.05	Results suggest a possible role of yoga as a preventive intervention as well as a means of improving children's perceived well-being.

7	Khalsa SB,Butzer B/Ann NY Academic Science/2016	Yoga in school settings: a research review.	Children's Mental Health	Since 2005	P<0.001	The Research suggest that yoga in the school setting is a viable and potentially efficacious strategy for improving child and adolescent health and therefore worthy of continued research.
8	Daly LA,Haden SC,Hagins M,Papouchis N,Ramirez PM	Yoga and Emotion Regulation in High School Students: A Randomized Controlled Trial.	Emotion regulation	38 students, 16 week	p=0.006	Research suggests that yoga increases emotion regulation capacities of middle adolescents and provides benefits beyond that of PE alone.
9	Noggle JJ, Steiner JJ,Minami T,Khalsa SB	Benefits of yoga for psychosocial well-being in a US high school curriculum: a preliminary randomized controlled trial.	psychosocial well-being.	625 students, 1 month	P=0.006	Study suggests preventive benefits in psychosocial well-being from Kripalu yoga during high school PE.
10	Kauts A,Sharma N,International Journal Yoga,2009	Effect of yoga on academic performance in relation to stress.	Academic performance, Stress	800 students, 7 weeks	P<0.001	The results show that the students, who practiced yoga performed better in academics
11	Bihungum Bista,pushpa Thapa,Diksha Sapkota,Suman B Singh,Paras Pokharel	Psychosocial Problems among Adolescent Students: An Exploratory Study in the Central Region of Nepal	Psychological dysfunction	787 students, 1 month	P=0.20 ,q=(1-p)=0.80,and precision(d)=0.15	17.03% of the adolescent students were found to have psychosocial dysfunction
12	Tikhe Sham Ganpat,Nagendra Hongasandra Ramarao,International of genuine Medicine,2011	Yoga for Children	Stress	4 weeks	P<0.001	Mental Health Problems in a School Setting in Children and Adolescents

CHAPTER 4: AIMS AND OBJECTIVES OF THE STUDY

4. Aim and objectives of the study:

4.1. Aim:

The aim is to study and compare the effects of Yoga and Sports based vacation program on Psychopathologies among school children.

4.2. Objective:

The objective of the study will be to analyse the effect of 10 - day Yoga and Sports vacation program and prevalence of depression, anxiety and stress on DASS-21(Depression, Anxiety, Stress scale) in school children.

4.3. Hypothesis:

Yoga based vacation program will have a positive effect on mental health of school children when compared to sports based vacation program.

4.4. Null Hypothesis:

Yoga based vacation program will not have a positive effect on mental health of school children when compared to sports based vacation program.

CHAPTER 5: METHODOLOGY

5. Methodology:

5.1. Sample:

Participants: 108 school children aged 12-16 years consisting of both girls and boys attended yoga and sports based vacation program were enrolled in this study. Of 108, 58 students underwent 10 day yoga program, which consisted of yoga asanas, pranayama, meditation, guided relaxation techniques and yogic games and remaining 50 students underwent 10 day sports program consisting of different sports like cricket, badminton, basketball and football. Among 58 students of yoga group, 28 were female participants and 30 were male participants. In the sports group, there were 39 male participants and 11 were female participants. Their depression, anxiety and stress levels were assessed by DASS 21 in the beginning and at the end of the training program.

➤ **Source:**

The subjects for the study were taken from 10- day Yoga based personality development camp at SVYASA University and 10 days sports based summer camp from ABBA Basketball Academy, ABCP Sports Academy, Loyola School and Kickstart football Academy, Bengaluru.

➤ **Sample Size:**

Total number of sample size (N): 108

Yoga Group (n): 58

Control Group (n):50

➤ **Age Range:**

Age range between 12-16 years.

➤ **Gender:**

Male and Female.

5.2. Inclusion Criteria:

- School children with in age range 12-16.
- Participants of summer vacation program.
- Both boys and girls.
- Willing to participate in the study.

5.3. Exclusion Criteria:

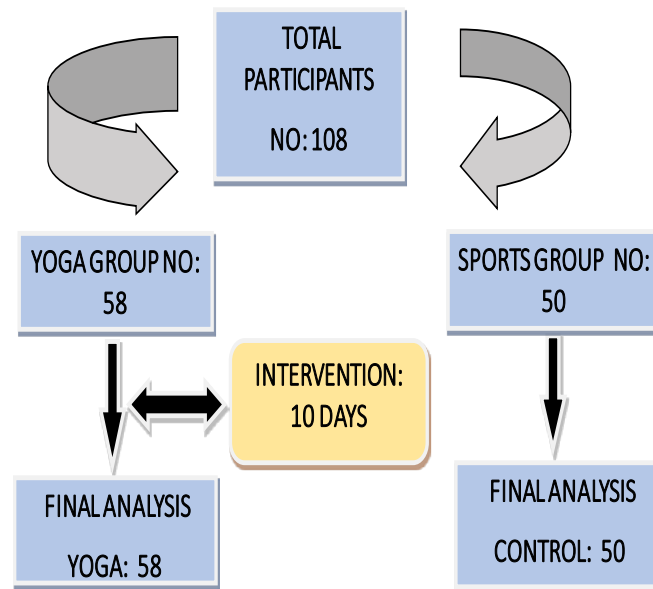
- Children with known cognitive defects.
- Hearing defects.
- Speech problems.
- History of neurological or psychiatric disturbance.
- Use of any medication affecting the central nervous system.
- Learning disability.
- Children under long term medication.
- Recent hospitalization.
- Recent abdominal surgery.

5.4. Informed Consent:

The study protocol was explained to the PDC Coordinators, SVYASA University and to the Director's of all the Sports Academies and got their informed consent signed.

5.5. Design of the Study:

Two Groups Pre and Post study(Yoga Group and Sports Group).



5.6. Ethical consideration:

Written informed consent was obtained from the participants before the commencement of the study.

5.7. Variables Studied:

All the participants in both groups were assessed for depression, anxiety and Stress at the baseline and after 10 days using Depression Anxiety, Stress scale (DASS 21).

Depression Anxiety, Stress scale (DASS 21)

The Depression, Anxiety and Stress Scale-21 Items (DASS-21) is a set of three self-report scales designed to measure the emotional states of depression, anxiety and stress.⁷²

Each of the three DASS-21 scales contains 7 items, divided into subscales with similar content. The depression scale assesses dysphoria, hopelessness, devaluation of life, self-deprecation, and lack of interest/involvement, anhedonia and inertia. The anxiety scale assesses autonomic arousal, skeletal muscle effects, situational anxiety, and subjective experience of anxious effect.

The stress scale is sensitive to levels of chronic non-specific arousal. It assesses difficulty relaxing, nervous arousal, and being easily upset/agitated, irritable/overactive and impatient. Scores for depression, anxiety and stress are calculated by summing the scores for the relevant items.

The DASS-21 is based on a dimensional rather than a categorical conception of psychological disorder. The assumption on which the DASS-21 development was based (and which was confirmed by the research data) is that the differences between the depression, anxiety and the stress experienced by normal subjects and clinical populations are essentially differences of degree. The DASS-21 therefore has no direct implications for the allocation of patients to discrete diagnostic categories postulated in classificatory systems such as the DSM and ICD.

Recommended cut-off scores for conventional severity labels (normal, moderate, severe) are as follows:

	DEPRESSION	ANXIETY	STRESS
Normal	0-9	0-7	0-14
Mild	10-13	8-9	15-18
Moderate	14-20	10-14	19-25
Severe	21-27	15-19	26-33
Extremely Severe	28+	20+	34+

5.8. Intervention:

Yoga group:

All the students underwent 10 day Yoga program nearly 8 hours a day, which consists of different sessions on physical postures (Yoga asanas, 1 ½ hour), breathing practices (pranayama, 1 hour), meditation and devotional sessions (1 ½ hour) and guided relaxation (1/2 hour). In addition to these particular practices, the program also included games (1 hour) and storytelling (1 hour) to promote values and responsibilities among them.

The schedule of the camp as follows:

SL No	ACTIVITY	TIME
01	Wake Up	5:30AM
02	Yogasana and Pranayama	6:00-7:30AM
03	Gita Chanting	7:30-8:00AM
04	Breakfast	8:00-8:45AM
05	Karma Yoga	8:45-9:30AM
06	Bath and Wash	9:30-10:30AM
07	Lecture	10:30-12 noon
08	Lunch	12 noon-1:00 PM
09	DRT	1:00-2:00PM

10	Creativity	2:00-3:30 PM
11	Happy Assembly Preparation	3:30-4:30 PM
12	Snacks	4:30-5:00PM
13	Games	5:00-6:00PM
14	Bhajans	6:00-7:00PM
15	Dinner	7:00-8:00PM
16	Happy Assembly	8:00-9:30PM
17	Dairy Writing	9:30-10:00PM
18	Good Night	10:00PM

5.9. Sports group:

All the students underwent 10- day sports program nearly 3 hours a day, which consists of

- Loosening Exercises
- Cricket
- Badminton
- Football
- Basketball

CHAPTER 6: DATA EXTRACTION AND ANALYSIS

6. Data Extraction and Analysis:

6.1. Data Extraction:

Data extraction was done following DASS 21 instructions mentioned in manual of DASS 21. The scores were presented in mean and standard deviation.

6.2. Data analysis

Data was analyzed using SPSS version 16. Mean and Standard deviations were calculated using descriptive statistics and Wilcoxon's signed rank test and Mann-Whitney's tests were performed and assessed within group and between group differences respectively.

CHAPTER 7: RESULTS

7.1. Results:

Normal distribution of the data was confirmed by Shapiro-Wilk and paired sample test was applied to see the pre-post changes which showed **prevalence of depression, anxiety and stress among school children** and after 10- days of yoga intervention there was **significant decrease in their depression, anxiety and stress** when compared to the 10 days of sports program.

7.2. Prevalence of depression, anxiety and stress among school children

The prevalence of depression, anxiety, and stress among 108 valid respondents was 12.03%, 31.4%, and 1%, respectively. In total, 33% of the respondents had at least one of the studied disorders and 1% of the respondents had all the three negative states. The prevalence of depression, anxiety, and stress found among boy and girls was not significantly different. The girls had 1.3%. Depression more than boys. Stress among girls was 1% higher than boys and anxiety among boys was found 2.6% higher than girls.

Table 1 – Prevalence of mental disorder

<i>Disorder type</i>	<i>Intensity</i>			<i>Total</i>
	<i>Mild</i>	<i>Moderate</i>	<i>Severe)</i>	
Depression	10.8%	1.8%	0%	12.03%
Anxiety	13.8%	16.6%	1%	31.4%
Stress	1%	0%	0%	1%

Table 2 – Prevalence of mental disorder gender wise

<i>Disorder type</i>	<i>Gender</i>	
	<i>Boys</i>	<i>Girls</i>
Depression	11.5%	12.8%
Anxiety	33.3%	30.7%
Stress	0%	1%

Pre and Post Intervention Study for both Yoga and Sports Group:

The pre-yoga intervention of depression, anxiety, and stress among 58 valid respondents in yoga group was 17.2%, 39.6%, and 1.7%, respectively.

Table 3 – Pre-Yoga intervention among Yoga group (58) valid respondents

<i>Disorder type</i>	<i>Intensity</i>			<i>Total</i>
	<i>Mild</i>	<i>Moderate</i>	<i>Severe)</i>	
Depression	13.7%	3.4%	0%	17.2%
Anxiety	17%	22%	0%	39.6%
Stress	1.7%	0%	0%	1.7%

The pre-sports intervention of depression, anxiety, and stress among 50 valid respondents in sports group were 6%, 20%, and 0%, respectively.

Table 4 – Pre-Sports intervention among Sports group (50) valid respondents

<i>Disorder type</i>	<i>Intensity</i>			<i>Total</i>
	<i>Mild</i>	<i>Moderate</i>	<i>Severe)</i>	
Depression	6%	0%	0%	6%
Anxiety	10%	10%	1.7%	20%
Stress	0%	0%	0%	0%

The post-yoga intervention of depression, anxiety, and stress among 58 valid respondents in yoga group was 8%, 18%, and 0%, respectively.

Table 5 – Post-Yoga intervention among Yoga group (58) valid respondents

<i>Disorder type</i>	<i>Intensity</i>			<i>Total</i>
	<i>Mild</i>	<i>Moderate</i>	<i>Severe)</i>	
Depression	0%	0%	0%	0%
Anxiety	0%	6.8%	0%	6.8%
Stress	0%	0%	0%	0%

The post-sports intervention of depression, anxiety, and stress among 50 valid respondents in sports group was 0%, 6.8%, and 0%, respectively.

Table 6 – Post-Sports intervention among Sports group (50) valid respondents

<i>Disorder type</i>	<i>Intensity</i>			<i>Total</i>
	<i>Mild</i>	<i>Moderate</i>	<i>Severe)</i>	
Depression	4%	4%	0%	8%
Anxiety	12%	6%	0%	18%
Stress	0%	0%	0%	0%

7.3. Effects of Yoga and Based Vacation Program on Mental Health in School Children-a Comparative Study.

We observed significant improvement in Depression, Anxiety and Stress in Yoga and sports group. Between group comparison revealed that Yoga is significantly better than Sports in reducing Anxiety.

There is significant improvement in Stress in both Yoga and Sports based vacation program by percentage change of 49.05% and p value of 0.001

Yoga found to be useful in improving Depression and Anxiety by a percentage change of 54.29% and 44.84% respectively with p value of 0.001 and p value of 0.001 .

Yoga found to be significantly better than sports in reducing Anxiety than sports by a percentage change of 44.84% with p value of 0.001.

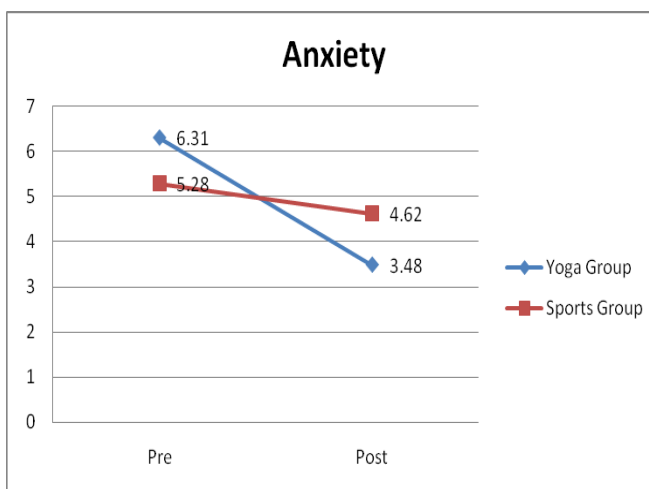
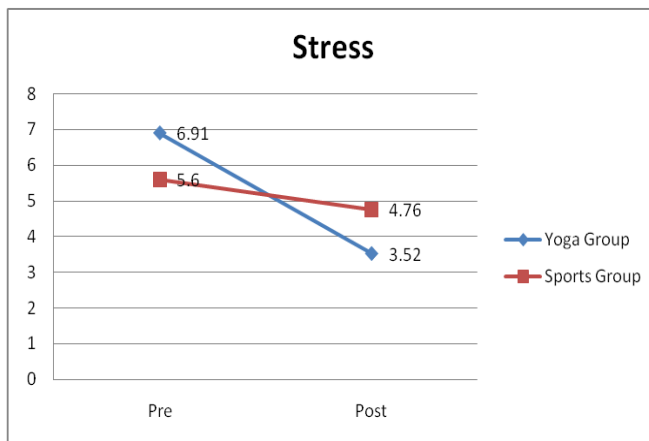
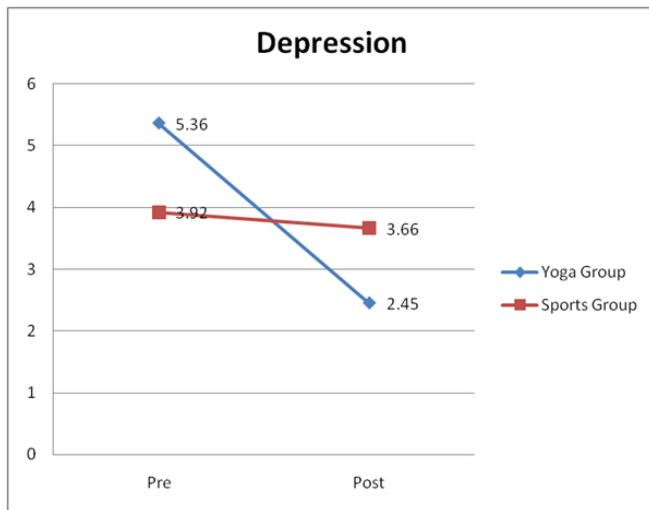
The table below shows that the mean DASS-21 score significantly improvement in their mental health after the children participated in PDC Yoga program.

Test Statistics ^a

Variables	Yoga Group				Sports Group				Between group
	Pre yoga Mean ±SD	Post yoga Mean ±SD	P Value	% change	Pre yoga Mean ±SD	Post yoga Mean ±SD	p value	% chang e	
Depression	5.36±3.95 5	2.45±2.09 6	<0.00 1	-54.29	3.92±3.16 8	3.66±3.87 9	<0.49 6	-6.633	0.25
Anxiety	6.31±3.31 5	3.48±2.67 0	<0.00 1	-44.84	5.28±3.09 7	4.62±3.24 4	<0.22 9	-12.5	0.07
Stress	6.91±2.922	3.52±2.577	<0.00 1	- 49.059 3	5.60±2.718	4.76±3.192	<0.02 5	-15	0.04

^a-Wilcoxon Signed Ranks Test

7.4. Graphs:



The graph above shows significant decrease in depression, anxiety and stress after the children participated in the 10 day yoga vacation program when compared to sports program.

CHAPTER 8: DICUSSION

8. Discussion:

The results of the present study showed 10 day yoga based lifestyle intervention reported significantly decreased anxiety and depression and improves overall general health in Children. All participants stayed in ashram for 10 days and practiced hatha yoga postures, voluntary regulated breathing practices, spiritual discourses, Bhagavad Gita chanting, emotional culture activities, yogic games and various meditation practices every day. These components of yoga based lifestyle practices were given to each participants and showed improvements in various physical and psychological

The integrated yoga based intervention reported beneficial effects on cognitive abilities, attenuation of emotional intensity, decreased anxiety-related symptoms and decreased salivary cortisol ⁷³. Regular practice of bhramari pranayama is effective in improving metacognition and mindfulness among high school children.⁷⁴ Practicing Yoga has been viewed as instrumental to enhancing mental focus, reducing negative behaviors, increasing physical vigor, improving awareness and practice of eating, enhancing communication with family and friends, and enhancing emotional resilience and joy for students participating in Yoga based activity.⁷⁵ Students who regularly practice yoga for 40 minutes which includes yoga nidra and chanting of Om increased their self confidence.⁷⁶ Transcendental Meditation technique has a positive effect for children with stress, anxiety and ADHD symptoms.⁷⁷ Similarly we also found significant improvement in anxiety, depression and stress among school children following 10 ten days of yoga intervention. A study showed after 10 day yoga program in residential yoga center,there was significant reduction in Aggressive Behavior and improvement in Competent Behavior of the Children.⁷⁸.Another study done with 98 school children showed that both Yoga and physical exercise are useful additions to the school routine in improving the physical,cognitive and emotional measures in children.⁷⁹

Similarly, this study was designed to determine the influence of 10 day yoga and sports vacation program on depression, anxiety and stress in 108 schoolchildren. The yoga based vacation program resulted in a significant reduction in depression, anxiety and stress when compared to sports program. Our results confirm previous studies that have demonstrated that yoga is effective in improving Mental Health in schoolchildren.

CHAPTER 9: CONCLUSION

9. Conclusion:

This study shows prevalence of anxiety, depression, stress were 12.03%, 31.4 and 1% respectively among the surveyed school children. Both yoga and sport based vacation programs found to be useful in improving stress whereas, yoga found to be useful in improving depression and anxiety among school children, and yoga found to be significantly better than sports in reducing anxiety compared to sports.

Present study also indicates potential role of short term yoga based vacation program in reducing anxiety, depression and stress among school children. This study also suggests the implementation of yoga based intervention in school curriculum.

CHAPTER 10: APPRAISAL

10. Appraisal:

10.1. Strength of the study:

- It is a first study to compare the impact of Yoga and Sports program on mental health among school children.
- We also assessed prevalence of depression, anxiety and stress in school children.
- No dropouts found in yoga group.
- Yoga intervention was comprehensive and in residential setup.
- No adverse effects were found in either groups.

10.2. Limitation of the study:

- Small sample size.
- Short term intervention.
- Lack of objective tools.
- Both groups had different environment.

10.3. Suggestions for future study:

- Large sample size.
- Long term study and robust research design should be adopted.
- Objective variables such as HRV, salivary cortisol's etc. should be assessed.
- Both group should have common atmosphere.
- Future studies should be extended to other vacation programs like fine arts and performing arts to find the impact of Yoga in comparison to other vacation programs and observe the changes in the mental health.

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