

Impact of yogic methods on selected physiological variables of school students

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KEYWORDS

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ABSTRACT:

This research was conducted with the intention of determining the manner in which different yoga practices altered certain physiological indicators within the context of a specific educational setting. It was expected that the practice of yoga would have a major impact on a number of physiological indicators, and we conducted research to see whether or not this hypothesis was incorrect. For the purpose of this investigation, forty students from Higher Secondary School in Kurukshetra, Haryana were chosen at random after being interviewed. Every single one of them was a participant, and their ages varied from thirteen to fifteen years old. In this investigation, both control and experimental groups were used by using a randomization strategy at both the pre-test and post-test stages. The researchers chose Group 'A' and Group 'B' as the ones to be researched after choosing twenty patients at random to be assigned to each of the two groups. Members of Group 'A' took part in yogic activities, but members of Group 'B' did not get any and all training related to yoga. Prior to and after the six weeks of instruction, it was determined that the data would be collected. With the use of a dependent t-test, we were able to examine the data. There was a threshold of 0.05 that we used for the significance level. Both the students' resting heart rates and the extent to which they were able to hold their breath for longer periods of time improved as a direct consequence of the yoga activities.

1. Introduction-

It is essential to engage in regular physical activity, especially weight-bearing activities, in order to ensure the proper growth and development of the skeletal system, as well as to strengthen bones, improve bone density, and maintain general skeletal health. Research in this area has concentrated on the role that physical activity plays in the prevention of health-related disorders, and there is widespread consensus about the good benefits that physical exercise has on a number of coronary risk factors. Through its influence on blood coagulability, platelet function, fibrinolysis activity, myocardial vascularity, and coronary artery size, physical exercise has the potential to lower coronary risk factors. Exercising on a regular basis lowers the viscosity of the blood, which in turn improves circulation and prevents the development of blood clots, which may result in heart attacks or strokes. Platelet function that is improved lowers the chance of blood clots, which may cause arteries to become blocked. Physical exercise also encourages the development of new blood vessels in the myocardium, which is the muscle that makes up the heart. This results in an improved blood supply to the heart, which in turn improves its performance and durability. Additionally, physical exercise may result in an increase in the size of the coronary arteries, which are responsible for supplying blood to the heart muscle. This decreases the probability of blockages occurring and ensures that the heart receives sufficient oxygen and nutrients. The cumulative effect of these physiological changes is to reduce the likelihood of developing coronary artery disease and other cardiovascular diseases. The fact that physical exercise has a beneficial effect on these parameters underlines how important it is to

maintain an active lifestyle in order to avoid illness and improve general health (Kumar et al. 2019).

Students in Indian schools have a questionable level of physical fitness because of the ease with which they can acquire modern conveniences. This has resulted in sedentary lifestyles and metabolic diseases at the school level. Because of this inactivity, morbidity, mortality, and other health issues can be caused. Research has shown that yoga activities are a more effective intervention for enhancing students' physical fitness factors than other interventions. The effects of various types of physical activities on athletic performance and the elements of physical fitness that are related with those activities have been the subject of research. Several aspects of health and fitness have been demonstrated to significantly improve as a result of yoga activities. The results were consistent whether the exercise was yoga, physical exercise, or a combination of the two.

Yoga, which has been practiced for hundreds of years, is a science that is founded on general physical and spiritual rules that are applicable to all different kinds of people. Every single human being, regardless of their age, gender, or current state of health, is able to participate in yoga since it is a way of life. Yoga exercise is beneficial for the development of health, the regulation of feelings such as lust, affection, rage, and greediness, and the provision of firm control over the body and mind, particularly in the absence of potentially harmful disorders. The significance of yoga is recognized by a significant number of individuals in the majority of countries. Yoga is not only important for the improvement of mental growth, socio-control, and spiritual and moral components, but it is also utilized as a kind of therapy. In spite of the fact that regular yoga or mindbody activities have been shown to have physiological advantages, even persons who are highly motivated find it difficult to find the time to devote to putting these approaches into practice.

The goal of yoga is to achieve perfection of the intellect, so that the artist can become devoted, true, and pure. This can be accomplished by achieving perfection of the mind as well as the heart. In order to accomplish this, it is necessary to completely give up interest in any other pursuits of life other than the path that has been chosen. Even while the mind is fluid and always seeking out sensory delights, art requires complete and undivided attention from the viewer. Yoga does not involve any type of competition; rather, it requires the freedom to think and reconstruct with the intention of improving one's performance. After that, it bestows the highest possible level of awareness upon the yogi. This means that from this point forward, the yogi's thoughts will be rooted in spiritual community, regardless of where they are or what they are doing. This will bring them to the pinnacle of spiritual existence.

A more enlightened state of mind may be achieved via the regular practice of yoga. A perfect way of life based on the scientific study of life, it brings harmony to the soul, rhythm to the body, and music to the intellect. To sum up, Yoga is a path to enlightenment, tranquility, health, and happiness. Living a life that is meaningful, helpful, and honorable is possible via the physical, mental, and spiritual components of yoga. Thus, Yoga is a multi-faceted practice that impacts people's lives on many levels. Because of this, we need to incorporate yoga into every aspect of our daily life. The ancient Indian practice of yoga encourages its practitioners to be at one with themselves and the world around them. Everyone agrees that it's one of India's most priceless cultural treasures. Our forefathers created it over two thousand years ago to unite the physical, mental, and spiritual selves in perfect harmony. The rate of its meteoric rise to fame throughout the years is quite astounding. Yoga has recently gained international attention as a potential solution to many of the issues that contemporary man faces (Pujari et al. 2023).

One of the numerous health advantages of yoga, an old discipline that combines relaxation with physical activity, is a reduction in cholesterol levels. The solar plexus stores immense potential energy and may be accessed by pranayama, which is like a battery for the body. This life-giving

force, or prana, may be harnessed via certain methods to bring about restoration on all levels: mental, emotional, and spiritual. By consistently clearing away obstacles, you may restore the free flow of life-giving energy. Restoring balance and wellness to the system is the result of coordinated cellular action. 20–25 minutes of pranayama practiced daily (either in the morning or at night) improves lung capacity, breathing efficiency, circulation, cardiovascular efficiency, blood pressure, neurological system strength and tone, anxiety and depression combat, digestion, excretory functions, sleep, gland stimulation, endocrine function, weight regulation, skin tone and complexion, and endocrine function (Eugene, 1997).

Yoga is an old physical discipline that has helped people all around the world lead more balanced lives in the most authentic and trustworthy ways. The term "yogasana" refers to a variety of physical postures that practitioners might adopt. Both the body and the psyche may rest with its gentle touch. As a way of life, yogasana teaches one to cultivate harmony in their physical, mental, and spiritual selves. Oneness with everyone is yoga. You may strengthen your heart and lungs with yoga, which also increases your cardio vascular endurance, flexibility, and decreases stress and stiffness in your joints. Many diseases have yoga-based remedies (Henry 2022). Four thousand years ago, yoga came from India. Harmony among one's physical, mental, and spiritual selves is the ultimate goal of yoga. Asanas, breathing exercises, and meditation are all components of yoga. In order to train one's mind to rest on its own, pranayama practitioners harness the vitality of the breath. It has a calming effect by increasing the activity of the parasympathetic nervous system (PNS). When the sympathetic nervous system (ANS) was engaged, several of your bodily functions improved, including your heart rate, digestion, blood flow, and range of motion in your joints. The capacity to maintain a steady breathing pattern without releasing any air for a certain amount of time is called breath hold time. One way to measure a person's resting heart rate is to count how many breaths they take in a minute.

Recent years have seen a significant increase in the amount of attention paid to the incorporation of yoga into educational settings. This is mostly owing to the potential advantages that yoga may have for the physical and mental well-being of students. Meditation, asanas (physical postures), and pranayama (breathing methods) are all components of yoga, which is an ancient discipline that originated in India. Individually and together, these components have the goal of improving one's physical health, mental clarity, and emotional stability. Students often experience greater levels of stress and a variety of health problems as a result of the school environment, which is defined by academic expectations and restricted opportunities for physical exercise. One comprehensive strategy that may be used to address these difficulties is the incorporation of yoga as a regular component of the educational program. Yoga has been shown to enhance a variety of physiological characteristics, including cardiovascular efficiency, pulmonary function, and general physical fitness, according to research that was conducted in the past (Mala et al. 2021).

The purpose of this research is to evaluate the particular influence that yogic practices have on a selection of physiological characteristics among students in various educational settings. By concentrating on measurements such as resting pulse rate, blood pressure, lung capacity, and muscular strength, the purpose of this study is to give scientific proof about the advantages that yoga offers to young people. Having an understanding of these consequences may help to encourage the implementation of yoga in schools, which in turn promotes a lifestyle that is healthier and more balanced for children. In addition to making a contribution to the expanding body of research on the health advantages of yoga, the results of this study will give educators and policymakers with insights that can be put into practice in order to improve the health and academic performance of students via the use of holistic and integrative techniques.

1.1 Yogic method-

The word "yogic method" encompasses the many practices and approaches that constitute the field of yoga. Yoga, an ancient practice that began in India, seeks to achieve a state of harmony

between the body, mind, and spirit via the use of physical postures, breathing techniques, meditation, and ethical principles.

The yogic method is a comprehensive practice that originated in ancient India. It includes physical postures (asanas), breath control methods (pranayama), meditation, ethical rules (yamas and niyamas), relaxation techniques, and a balanced lifestyle. The objective is to achieve a state of balance and unity between the body, mind, and spirit. This is done by engaging in techniques that improve physical health, mental clarity, and spiritual well-being. These practices develop flexibility, strength, focus, and inner serenity.

The fundamental elements of the yogic approach include asanas, pranayama, meditation, ethical principles, relaxation methods, dietary practices, and philosophical teachings. Asanas are bodily positions that improve flexibility, strength, and balance. Pranayama encompasses the use of breath control methods to effectively regulate respiration and induce a state of mental tranquility. Meditation methods aim to cultivate mental clarity and foster inner tranquility. The yamas and niyamas are ethical standards that provide moral norms for conduct and personal discipline. Relaxation practices, such as Savasana and Yoga Nidra, alleviate stress and enhance overall well-being. An optimal diet, often prioritizing complete, unprocessed foods, promotes both physical and emotional well-being. Yoga philosophy, derived from writings such as the Yoga Sutras and Bhagavad Gita, provides the foundation for the practice by offering profound understanding of the self and spiritual development. Collectively, these elements provide an all-encompassing framework for attaining equilibrium and serenity in one's life.

1.2 Physiological variables-

The physiological functions of the body increase with physical activity and diminish with inactivity. As a result of physical activity, the heart, lungs, and muscles become more robust and long-lasting. Physiology is the system of the body that must work well enough to support certain activities. Because of this, it is vital for people to have a solid understanding of the structure and functioning of their own bodies. The ability to work continuously and smoothly in a variety of conditions is what we mean when we talk about physical fitness. This competence is dependent on the coordinated functioning of a number of different physiological systems, including the respiratory, blood circulatory, skeletal muscular, and endocrine systems. Each system contains a number of parameters that may be used to evaluate its operations and the impact it has on the physiology of an individual as a whole.

Physiological variables are biological and physical factors that may be tested to evaluate the functioning and health of the body's systems. These variables provide crucial data on the interior environment of the body and may be used to assess health, diagnose ailments, and evaluate the effectiveness of therapies. Important physiological factors encompass:

- **Heart Rate-** The rate at which the heart beats per minute, which is an indicator of cardiovascular health and fitness levels.
- **Blood Pressure-** The pressure imposed by the flow of blood on the walls of blood vessels, which is essential for evaluating cardiovascular well-being.
- **Respiratory Rate-** The frequency of inhalations and exhalations per minute, a crucial factor in assessing respiratory efficiency.
- **Body Temperature-** The interior temperature of the body, which is an essential indicator of metabolic activity and overall health.
- **Oxygen Saturation (SpO2)-** The SpO2 is a measure of the proportion of hemoglobin molecules that are bound to oxygen, indicating how well the respiratory system is functioning and how well oxygen is being transported to the body's tissues.
- **Blood Glucose Levels-** The amount of glucose present in the bloodstream, which is crucial for the regulation of diabetes and overall metabolic well-being.

- **Electrolyte Levels-** This refers to the concentrations of important electrolytes like sodium, potassium, and calcium. These electrolytes are crucial for neuron function, muscular contraction, and maintaining the balance of fluids in the body.
- **Hormone Levels-** levels of several hormones in the bloodstream that control various body activities such as growth, metabolism, and reproduction.
- **Blood pH-** The measure of acidity or alkalinity in the blood, which is crucial for maintaining a stable metabolic environment.
- **Hemoglobin and Hematocrit Levels-** Quantifications of the concentration of red blood cells and the blood's ability to transport oxygen.
- **Cholesterol Levels-** The quantities of various cholesterol types present in the bloodstream, which are important for evaluating cardiovascular health.
- **Body Mass Index (BMI)-** is a metric that calculates body fat by taking into account a person's height and weight. It is often used to evaluate obesity and the associated health hazards.
- **Basal Metabolic Rate (BMR)-** refers to the amount of energy the body uses when at rest, which is an indicator of overall metabolic health.

Monitoring these physiological factors aids in comprehending the present condition of the body's health, identifying anomalies, and directing medical treatments and adjustments to one's lifestyle.

2. Literature of Review-

Pujari et al. (2023) The study aimed to investigate the impact of yogic and aerobic exercises on physiological variables such as cardio respiratory endurance, resting pulse rate, and breath holding time. The research was designed to help practitioners develop their personality factors. The study found that aerobic training improved V2 oxygen consumption ability in the yoga group compared to the aerobic group. The yoga group also showed better performance in pulse rate compared to the aerobic and control groups. The yogic exercises and techniques positively impacted the yoga group's vital capacity and showed better systolic and diastolic rate compared to the aerobic and control groups.

Henry (2022) Athletes may benefit greatly from well-planned and focused training programs that aim to enhance certain physical attributes. Competing at a high level in most athletic events and competitions requires a high level of physical and motor skills, including quickness, power, agility, balance, stamina, and coordination. When it comes to playing at a high level, power and strength are paramount. The building blocks of all physical functions in the body—muscle strength, endurance, agility, speed, balance, and coordination—are enhanced with regular physical exercise. A healthy lifestyle and proper development are the results of regular physical activity. The most common types of motor movement throughout all time periods have been running, leaping, throwing, climbing, and hanging. The current research used an experimental approach to examine the impact of asanas on certain physiological and motor fitness characteristics among engineering students. With the use of a pre- and post-test, the research was structured like a real experiment. Each of the three groups of twenty students was given one of the sixty topics. Experimental Group I and the control group were the two groups that were given the names. Muscular strength, explosive power, cardio-respiratory endurance, flexibility, and other motor fitness and physiological characteristics were pre-tested for all individuals. Flexibility, explosive power, cardio-respiratory endurance, and muscle strength were all unaffected in the control group of students even after 12 weeks. The motor fitness factors of engineering students were considerably impacted by the yogasana therapy. Students of engineering do not noticeably improve their explosive power or muscle strength after practicing yoga asanas. Engineering students' cardiorespiratory endurance was significantly improved by yogasanas. The flexibility of engineering students was much improved by yogasanas.

Mala et al. (2021) the purpose of this research was to examine the impact of yoga-based skill training on fitness-related factors among collegiate volleyball players. Thirty students, ranging in age from thirteen to seventeen, were chosen at random from Sri Ramakrishna Matriculation Higher Secondary School in Coimbatore in order to carry out this research. Group-I served as the experimental group and Group-II as the control group; each group consisted of fifteen participants. Group I engaged in a twelve-week yoga-based skill training program, whereas Group II served as a control group that did not do anything different from their usual routine. The dependent variables used for this study were fitness-related metrics including agility and speed. This research used a pre- and post-test random group design. After collecting data both before and after the 12-week training period, statisticians ran a 't' test to see whether there was a statistically significant change from the pre- to post-test on certain parameters, and they used analysis of covariance (ANCOVA) to see if there was a statistically significant difference between the post-test means of the experimental and control groups on each parameter individually. Both the speed and the flexibility were significantly enhanced, according to the results.

Kumar et al. (2019) Life isn't complete without sports. Mental, physical, and social growth are all areas in which they contribute significantly to the country. Invention by humans in this subject has been happening over the last many decades. In tandem with the growth of the country's educational infrastructure, the gaming industry is rapidly becoming into a legitimate industry in its own right. Because they promote global understanding and fraternity in the midst of politically conflicted lives, sports and physical education are fields that transcend international boundaries. Many see sporting events as a unifying factor in the fight for global harmony. The research set out to examine and compare a variety of physiological factors among Western Uttar Pradesh's Education and Physical Education pupils. Physiological characteristics such as resting pulse rate (RPR), resting respiratory rate (RRR), vital capacity (VC), blood pressure (BP), and heart rate (HR) were the only ones included in the research, which was carried out among 600 undergraduates from Western Uttar Pradesh. The research scholar interviewed subject-matter specialists and conducted relevant prior to formulating the hypothesis. It was expected, based on their recommendations and suggestions and the research scholar's experience, that: students majoring in education and physical education would have significantly different physiological characteristics. A total of 600 topics were chosen from 10 districts in western Uttar Pradesh; 300 subjects were chosen from the Education and Physical Education categories, and 30 pupils were chosen from each district for each category. The 't-test' was used to compare the physiological characteristics of the students of Physical Education and Education.

Prashanth et al. (2017) conducted a research to explore the effects of doing aerobic exercise and practicing yoga on several physiological variables. Uduppi town, Mangalore district, Karnataka state; 45 middle-aged males between the ages of 35 and 40 were included in the research. Each of the participants was assigned to one of three groups: one group participated in yogic practice, another group participated in aerobic exercise, and the third group served as a control group. Six days each week for a total of twelve weeks comprised the training program. A vital capacity and blood pressure test was performed on the participants both before and after the training session. There were significant differences between the experimental group and the control group, and the analysis of covariance (ANCOVA) was employed to find those differences. During the pos-hoc analysis, the Scheff-S test was used. Researchers came to the conclusion that practicing yoga and engaging in aerobic activity had a beneficial effect on both vital capacity and blood pressure.

Chandrakumar et al. (2016) carried out a research with the purpose of determining the most effective training regimens for school-aged boys in terms of cardiovascular endurance, respiratory endurance, and flexibility. The participants in the research were young men between the ages of 13 and 17 years old from the Dindigul area in Tamilnadu. They were separated into four equal

groups of fifteen each. A control group, yogic practices, aerobic activities, and interval training were all allocated to the groups based on their respective characteristics. In order to evaluate the effectiveness of the training packages, the three experimental groups took part in the training for a period of twelve weeks. The group that served as the control did not enroll in any kind of training program. Both before and after the treatment, data was gathered, with the pre-test serving as the pre-test in this arrangement. The data that was obtained was analyzed using statistical methods in order to determine how it relates to the hypothesis that was created and the goals that were set for the research. At the pre-test, an analysis of covariance (ANCOVA) was used in order to take into consideration the differences that existed between the means of the four different groups. In the event that the adjusted post-test means were found to be statistically significant, the post-hoc test was carried out in order to determine the difference between the paired means. When it came to the pre-test on cardio respiratory endurance and flexibility, the findings indicated that there was no significant mean difference between the experimental groups. On the other hand, the difference in mean scores between the experimental groups after the test was statistically significant with regard to these characteristics. The YPG demonstrated superior performance in terms of flexibility, but the AEG and ITG provided results that were comparable with regard to both factors.

Sunil Rayat (2015) conducted research on the impact that yoga has on a variety of physical and physiological factors among students who were enrolled in physical education classes. A research was conducted with the purpose of observing the impact of yogasanas and pranayama on a selection of physical and physiological characteristics of students who were enrolled in the Bachelor of Physical Education and Master of Physical Education programs. Thirty male students from SGGs Khalsa college in Mahilpur, Punjab, India were chosen to participate in this research as subjects. These individuals varied in age from 18 to 24 years old. Twelve weeks of yoga asana and pranayama instruction were provided to the students as a kind of therapy. Several aspects of physical fitness, including muscular strength and endurance of the trunk and flexibility, as well as physiological aspects, such as pulse rate, vital capacity, and peak flow, were shown to be enhanced by regular yogasana and pranayama training, according to the findings of the research.

Chidambararaja (2015) investigated the impact that practicing yoga and engaging in aerobic exercise had on the resting pulse rate and blood pressure of male students in a school setting. For this study, thirty young men between the ages of 15 and 17 were chosen to participate as subjects. Each of the three groups was given an equal amount of members. For a period of twelve weeks, those in Group I participated in yoga classes, whereas those in Group II participated in cardiovascular activity five days a week. The third group did not take part in any specialized training session. Some of the criteria variables that were evaluated on the individuals were their resting heart rate, flexibility, and muscular endurance. These evaluations were performed both before and immediately after the training. All of the examinations were carried out in accordance with the established protocol. The statistical technique that is employed is ANCOVA. For the purpose of determining which of the modified post-tests had a significant difference, Schfee's post hoc analysis was used. When compared to the control group, the resting pulse rate of both training groups was shown to be considerably lower. Both groups had considerable improvements in their flexibility as well as their muscular endurance due to the exercise. Better results were seen in the aerobic exercise group compared to the yogic yoga group.

Manikandan (2013) the impact of pranayama practice on certain physiological factors, including breath hold duration and vital capacity, was assessed among female athletes. Thirty female university players from different disciplines at Annamalai University were chosen as participants. Subjects between the ages of 18 and 25 were recruited. The individuals were evenly distributed into two groups. Group I participated in pranayama training for five days a week for a period of eight weeks. Group-II did not participate in any specialized training program. The

participants were assessed on certain criteria variables, such as breath hold duration and vital capacity, both before and immediately after the exercise. The tests were conducted using a standardized technique. ANCOVA is used as a statistical technique. The study found that there was a significant improvement in selected physiological measures, such as breath hold duration and vital capacity, among female players as a result of the training.

3. Statement of the Problems-

The purpose of this study was to investigate the impact that yoga practices had on a number of physiological factors in the population of school-aged children. In particular, the purpose of this study was to evaluate the ways in which frequent participation in yoga activities altered important physiological characteristics, such as cardiovascular health, respiratory efficiency, and total physical fitness. The purpose of the study was to determine whether or not there were any changes in the students' heart rate, blood pressure, lung capacity, or flexibility as a result of participating in an organized yoga routine. The purpose of this study was to investigate whether or not regular yoga practice may result in significant changes in the aforementioned physiological areas, hence making a contribution to the students' overall health and well-being. During the course of the research, a sample group of school-aged children took part in a variety of yoga sessions over the course of a predetermined time period. The physiological characteristics of the children were assessed both before and after the intervention. This research is significant because it investigates the possible advantages of adding yoga into school curricula. The program's objective is to improve the students' physical health through activities that are holistic and do not include any intrusive procedures.

4. Methodology-

The research aimed to accomplish its goals by using twenty students from a government upper secondary school in Kurukshetra, Haryana, as subjects. The chosen participants were 15–17 years old. The group used for experiments was known as the yoga training group. A group of people participated in an eight-week yoga program that met six times a week for an hour each evening. Yogasanas and pranayama performed by the experimental group were as follows. Padmasana, sarvangasana, halasana, bhujangasana, ardhmatsyender asana, sirashasana, and suriyanamaskar make up the 30 minutes of the yoga program, while kapalbati and shitali comprise the pranayamas. The last 10 minutes of the program are spent in savasana. Volunteers received instruction from a yoga instructor who is qualified in the field. Both the resting heart rate and the duration of the breath hold were measured before and after the training intervention.

Table –1 Variables and Test

S.No	Variables	Tests
1	Resting pulse rate	Bio-Monitor
2	Breath holding time	Manual Method (Nose Clip)

The procedures used to conduct each test were consistent. Both the pre- and post-test data from the experimental group were statistically examined using the tools provided in tables 2 and 3, which include means, standard deviations, standard errors, and t-tests. A confidence level of 0.01 was set as the threshold of significance.

TABLE-2 Statistical measures for the experimental group's breath-hold duration, including mean, standard deviation, standard error, and t-value

S.No	Breath hold time	Mean	SD	SE	t- Value
1.	Pre test	27.5	1.71	0.63	8.73*
2.	Post test	33.4	1.11		

*** This table value for the significance of 2.58 is significant at a 0.01 level of confidence.**

Table 2 show the experimental group's mean, standard deviation, standard error, and t-value for the pre- and post-tests. The results demonstrated that the eight weeks of yoga instruction were effective, as the t-values for the chosen breath hold period rose considerably. There was a statistically significant difference between the pre- and post-test values for breath hold duration, since the chosen value was higher than the table value of 2.58, indicating a thorough examination.

TABLE-3 The experimental group's mean, standard deviation, standard error, and t-value for resting pulse rate

S.No	Resting pulse rate	Mean	SD	SE	t- Value
1.	Pre test	70	1.30	0.46	4.35*
2.	Post test	72	1.59		

***At the 0.01% confidence level, this table has a significance level of 2.58%.**

The results of the experimental group's pre- and post-test scores on resting pulse rate are shown in Table-3, together with their means, standard deviations, standard errors, and t-values. The results demonstrated that the eight weeks of yoga instruction were effective, as the t-values of the chosen resting pulse rate changed considerably. Because the chosen resting pulse rate value was higher than the table value of 2.58, a statistically significant difference was seen between the pre- and post-test values for resting pulse rate.

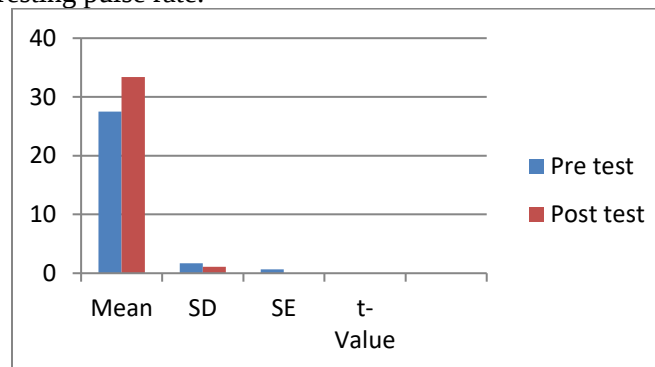


Figure 1: Comparisons of mean difference on breath hold time

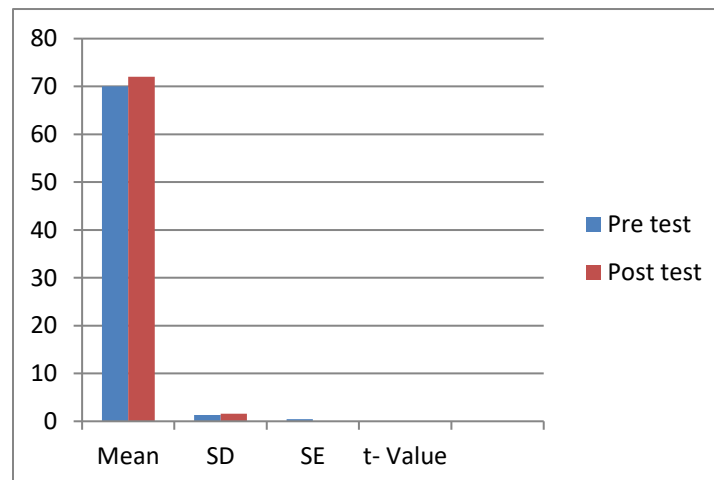


Figure 2: Comparisons of mean difference on resting pulse rate

5. Result-

The study found that an eight-week yoga program significantly improved the breath-hold duration and resting pulse rate of participants. The mean breath-hold duration increased from 27.5 seconds in the pre-test to 33.4 seconds in the post-test, with a t-value of 8.73, exceeding the critical value of 2.58, confirming statistical significance at the 0.01 level of confidence. The mean resting pulse rate also increased, from 70 beats per minute in the pre-test to 72 bpm in the post-test, with a t-value of 4.35, also exceeding the critical threshold of 2.58, indicating significant change at the 0.01% confidence level. The results affirm that the yoga program effectively enhanced breath-hold duration and altered the resting pulse rate, underscoring the physiological benefits of regular yoga practice. The statistically significant differences between pre- and post-test values provide robust evidence supporting the efficacy of yoga in improving respiratory and cardiovascular parameters.

6. Conclusion-

The findings of the research project that investigated the effects of yoga on the physiological characteristics of school kids have been encouraging. There have been considerable gains in a variety of metrics, including pulmonary function, cardiovascular efficiency, and general physical fitness, that have been demonstrated to be associated with regular yoga practice. When compared to students who did not engage in yoga, those who engaged in a structured yoga program displayed improved lung capacity, improved heart rate variability, and improved muscular strength and flexibility by participating in yoga. Based on these data, it seems that introducing yoga into the curriculum of schools might be a useful technique for boosting physical fitness among children. The enhancements in physiological variables not only lead to an increase in one's physical well-being, but they also assist cognitive function and emotional stability, both of which are essential for academic achievement and general growth. For the purpose of fostering a holistic approach to the health and welfare of students, schools have to give serious consideration to include yoga as a regular component of their physical education curricula. It is possible that further study might investigate the long-term impact of yoga on the health of students, as well as the potential of yoga to improve academic performance and psychological well-being.

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