Effect of Selected Yogic Practices on Height and Eye Vision among School Going Children

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Abstract **- The study was designed to know the effect of yogic practices on height and eye vision among school children. The study was conducted on 80 male students (40 subjects were kept on Experimental group and 40 subjects were kept in Control group. Out of 40 subjects of Experimental group 20 subjects were kept in Height and rest of the 20 subjects was kept in Eye vision. The same distribution of subjects was followed with control group) from D.S.INTER COLLEGE, Aligarh. The age of subjects was delimited to 14-17 years. The tests those were conducted to collect the required data for study were: height by Stadiometer and eye vision by eye test (in visual acuity). To know significant difference between two groups i.e. control and experimental groups in each variable and group (control group and experimental group), Paired sample t-test was employed. The result of the data reveals the significant difference was found in experimental group in each variable (height and eye vision) and insignificant difference was found in control group in eye vision and significant difference in height.**

Index Terms **- Height, Eve vision, Control and Experimental.**

INTRODUCTION

Yoga is essentially a spiritual discipline based on an extremely subtle science, which focuses on bringing harmony between mind and body. It is an art and science of healthy living. The word ‘Yoga’ is derived from the Sanskrit root ‘Yuj’, meaning ‘to join’ or ‘to yoke’ or ‘to unite’. As per Yogic scriptures the practice of Yoga leads to the union of individual consciousness with that of the Universal Consciousness, indicating a perfect harmony between the mind and body, Man & Nature. According to modern scientists, everything in the universe is just a manifestation of the same quantum firmament. One who experiences this oneness of existence is said to be in yoga, and is termed as a yogi, having attained to a state of freedom referred to as mukti, nirvana or moksha. Thus, the aim of Yoga is Self-realization, to overcome all kinds of sufferings leading to 'the state of liberation' (Moksha) or ‘freedom’ (Kaivalya). Living with freedom in all walks of life, health and harmony shall be the main objectives of Yoga practice. "Yoga” also refers to an inner science comprising of a variety of methods through which human beings can realize this union and achieve mastery over their destiny (Basavaraddi, 2015).

For many, the practice of yoga is restricted to Hatha Yoga and Asanas (postures). However, among the Yoga Sutras, just three sutras are dedicated to asanas. Fundamentally, Hatha yoga is a preparatory process so that the body can sustain higher levels of energy. The process begins with the body, then the breath, the mind, and the inner self (Eliade, 2009).

Eye vision is the special sense by which the qualities of an object (such as color, luminosity, shape, and size) constituting its appearance are perceived through a process in which light rays entering the eye are transformed by the retina into electrical signals that are transmitted to the brain via the optic nerve (Merriam-Webster, 2018)

Yoga does not adhere to any particular religion, belief system or community; it has always been approached as a technology for inner wellbeing. Anyone who practices yoga with involvement can reap its benefits, irrespective of one’s faith, ethnicity or culture. Traditional Schools of Yoga :These different Philosophies, Traditions, lineages and Guru-shishyaparamparas of Yoga lead to the emergence of different Traditional Schools of Yoga e.g. Jnana-yoga, Bhakti-yoga, Karma-yoga, Dhyana-yoga, Patanjala-yoga, Kundalini-yoga, Hatha-yoga, Mantra-yoga, Laya-yoga, Raja-yoga, Jain-yoga, Bouddha-yoga etc. Each school has its own principles and practices leading to ultimate aim and objectives of Yoga (Van Twist, 2015).

In a school setting, yoga can give the children a taste of what it means to work together with ease. The coordination during yoga practices in school help build awareness and a series of coordinated efforts to move together increasing their senses feel integrated. Implementation of yoga as acceptable and feasible in a school setting and it has the potential of playing a protective or preventive role in maintaining mental health (Khalsa et al, 2012).Nowadays, there is an increasing interest among schools to include yoga programs both physical and mental welfare of the students. This physical practice is said to be beneficial in regulating students' nervous system for better performance. Studies show that prolonged psychosocial stress among school children leads to negative behavior among them. These generally happen when they are incapable of cope up with the demanding education system and competition among peers. The education process today demands children to be active in all dimensions and hence to keep students in tranquil state, it is important for students to practice meditation.

Thus, we are able to conclude that height, eye vision and of school going children is an important factor for their development and maturity. So the yoga might be use for improvement and growth of mentioned variables. The researcher felt the need for conduct this research for the improvement of height, eye vision and through yogic practices.

METHODOLOGY

The subjects of the study were selected randomly 80 students (40 subjects were kept on Experimental group and 40 subjects were kept in Control group. Out of 40 subjects of Experimental group 20 subjects were kept in Height and rest of the 20 subjects was kept in Eye vision. The same division of subjects was followed with control group) from D.S.INTER COLLEGE, Aligarh. Age ranged the student between 14-17 years. Necessary data were collected for height by Stadiometer and eye vision by eye test (in visual acuity). To compare height and eye vision and mental well being in each group (control and experimental) of variables among school children, Paired sample t-test was computed. To find out the significant the level of significant was set at level of .05.

Training Programme

S. No.	Name of the activity	1 to 4 Weeks (Repitation)	5 to 8 weeks (Repitation)	9 to 12 Weeks (Repitation)
1	Trikonasana	2	3	4
2	Ardhchandrakarasana	2	3	4
3	Tadasana	3	5	7
4	Veerbhdrasana	2	3	4
5	Dhanurasana	2	3	5
6	Chakrasana	2	3	5
7	Paschimottanasana	2	3	5
8	Suptavajrasana	1	2	3
9	Pavanmuktasana	2	3	4
10	Vajrasana	2	3	3
11	Bhujangasana	2	3	4
12	Kapalbhati	30stroke	50stroke	80stroke
13	Modified trataka (gazing & pin pointing)	3 to 4 Min	4 to 6 Min	6 to 8 Min
14	Jal- neti	30sec with each nostril	45sec with each nostril	60sec with each nostril
15	Anulom-Vilom (Pranayama)	4	4	5
16	Brahmari (Pranayama)	4	4	5
17	Yog nidra	5mit	5mit	6mit

Training Schedule

Subjects were supposed to do practice of Asanas for forty minutes. The final posture of each asana was maintained according to the training program or as per the capacity of individual.

RESULTS OF THE STUDY

The data pertaining to the variables in this study were examined by using paired sample t-test to find out result in order to determine the differences if any among the pre and post test means. The level of significance was fixed at 0.05 level of confidence for all the cases.

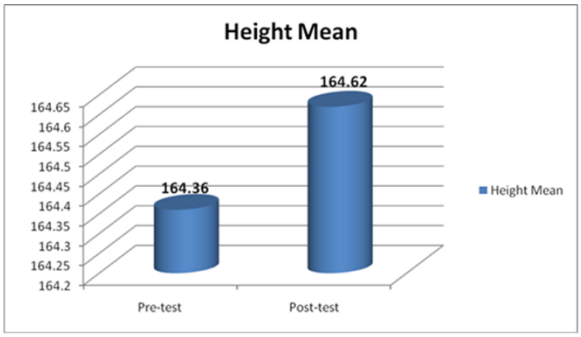
Table-1 Pre- Test and post Test mean of control group on height

Height	Mean	N	Std. Deviation	Std. Error Mean	Mean difference	t	p
Pre-test	164.36	20	4.406	.985	0.26	3.003	.007*
Post-test	164.62	20	4.422	.989			

*significant at 0.05 level, [tabulated value =2.093, df =19]

The table 1 shows that, the obtained paired sample t-ratio between the pre and post-test means of control group is 3.003 respectively. The table values required for significant difference with df 19 at .05 level is 2.093. it is concluded that in this age group (14 -17) height increases naturally so that the statistical analysis shows the significant difference.

Figure-1



Difference between pre and post test mean of control group on height.

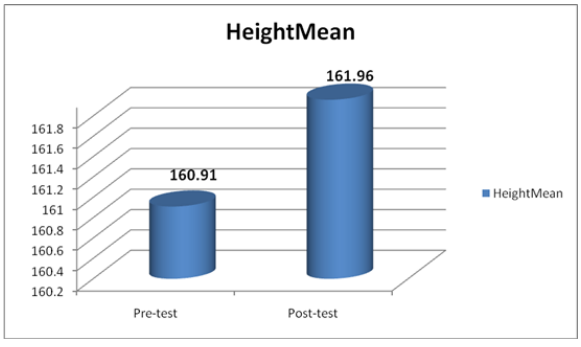
Table- 2 Pre- Test and post Test mean of experimental group on height

Height	Mean	N	Std. Deviation	Std. Error Mean	Mean difference	t	p
Pre-test	160.91	20	5.877	1.314	1.060	8.137	.000*
Post-test	161.96	20	5.668	1.267			

*significant at 0.05 level, [tabulated value = 2.093, df =19]

The table 2 shows that, the obtained paired sample t-ratio between the pre and post test means of Experimental group is 8.137 respectively. The table values required for significant difference with df 19 at .05 level is 2.093. it is concluded that height increases through yogic practices so that the statistical analysis shows the significant difference.

Figure-2



Difference between pre and post test mean of experimental group on height.

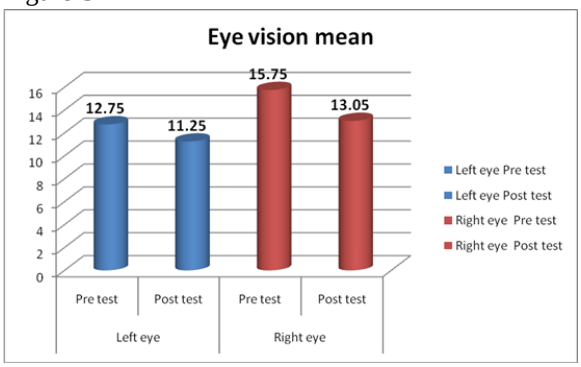
Table-3 Pre- Test and post Test mean of control group on Eye vision

Eye vision		Mean	N	Std. Deviation	Std. Error Mean	Mean difference	t	p
Left eye	Pretest	12.75	20	11.346	2.537	1.500	1.248	.227
	Post test	11.25	20	6.223	1.391			
Right eye	Pretest	15.75	20	16.312	3.648	2.700	1.645	.116
	Post test	13.05	20	10.034	2.244			

*significant at 0.05 level, [tabulated value = 2.093, df =19]

Table 3 shows that the mean of left eye pre-test of control group and post-test of control group was 12.75 and 11.25, respectively, whereas the mean of right eye of pre-test of control and post-test of control group was 15.75 and 13.05. The paired sample "t" value in case of left eye control group was 1.248 and for right eye control group it was 1.645, the table value required for insignificant difference with df 19 at .05 level 2.093.

Figure-3



Difference between pre and post test mean of control group on Eye vision.

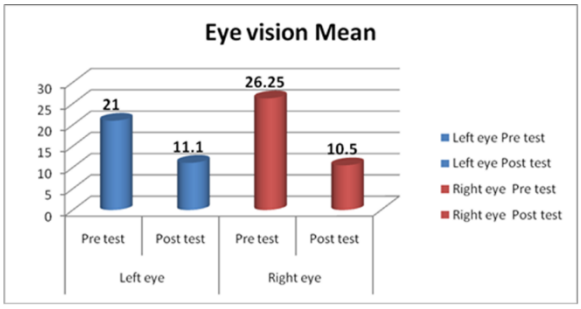
Table-4 Pre- Test and post Test mean of experimental group on Eye vision

Eye vision		Mean	N	Std. Deviation	Std. Error Mean	Mean difference	t	p
Left eye	Pre test	21.00	20	11.558	2.584	9.900	5.249	.000*
	Post test	11.10	20	4.778	1.068			
Right eye	Pre test	26.25	20	12.871	2.878	15.750	6.873	.000*
	Post test	10.50	20	4.072	.910			

*significant at 0.05 level,[tabulated value = 2.093,df =19]

Table 4 shows that the mean of left eye pre-test of experimental group and post-test of experimental group was 21.00 and 11.10, respectively, whereas the mean of right eye of pre-test of experimental and post-test of experimental group was 26.25 and 10.50. The paired sample "t" value in case of left eye experimental group was 5.249 and for right eye experimental group it was 6.873, the table value required for significant difference with df 19 at .05 level 2.093.

Figure-4



Difference between pre and post test mean of experimental group on Eye vision.

DISCUSSION OF THE RESULTS

The present study was done to find out the effect of yogic practices on height, eye vision and mental wellbeing among school going male students' age group 14-17 years. The analysis of data through paired sample t test shows that the 12 weeks yogic practices significantly improve in height, eye vision and mental wellbeing.

Mostly it has been seen that height problems occur in children due to malnutrition, heredity, lack of balance diet, specially vitamin D, lack of growth regulating minerals such as calcium, zinc copper and phosphorus, and deficiency growth hormone (GH) is the main cause. There are a lot of factors that come into play when it comes to height. Genetics is the main factor. However, the good news is that we can add up to 2 inches (5 cm) in most cases to a child's natural height. More dedicated ones can even add up to 4 or more inches (10 cm) to their height. If we will just give us about 20-45 minutes a day for 5 days a week, we will gain height. Yes we do have to have some dedication. The things we need to do to gain this height are not particularly hard. Most of them are quite easy to do. What we put into this endeavor is what we will get out of it. Dedication, persistence and enthusiasm are the key factors. A lot of activities and exercises can be included in normal daily routine. We can use the exercises and stretching activity as part of our workout routine. Our metabolic activities can be improved by exercises which results to develop growth hormone so height can be increased. Yoga also affects our metabolic activities as exercises to increase height.

The present findings suggested that yogic practices can be one of the best methods for improving height. The physical building blocks of yoga are the posture (asana) and the breath. Bundles of fibers together form the large nerves, which are stretched and purified by yoga asana. By clearing toxins from the tissues, the asana benefits neurotransmissions at the fine nerve ending, and at synapses between nerves .Yoga has been shown to stabilize the response of the nervous system to stress, removing the constant muscular tension produced by the repeated alerts from the central nervous system, and calming the involuntary symptoms of threat-racing heart, sweating and anxiety- roused by the sympathetic nervous system.

Yogic practices maximize the harmonious interaction of the endocrine hormones secreted by the pituitary, thyroid, parathyroid and adrenal glands during the adolescent growth spurt. Minute concentrations of vital endocrine secretions, including growth hormone from the pituitary, calcitonin from the parathyroid and thyroxin from the thyroid gland, control the rate and extent of physical growth and metabolism. Balanced interaction of these hormones ensures maximal growth and development and is promoted by a yogic lifestyle including regular asanas, adequate sleep, exercise and a healthy diet.

Our finding proposes that dynamic and static asanas such as Triokanasan, Ardhchandrakarasana, Dhanurasana, Chakrasana, Pavanmuktasana Bhungasana Halasana, Vajrasana, yoga nidra, anulom-viloma, Kapalbhati, which exert a powerful stretching effect upon the vertebra-spinal axis, hips and legs, profoundly influence the nervous and arterial plexuses supplying and innervating the epiphyseal growth plates of the spine and long bones (femur and tibia). They promote maximal nutrition and contribute to the development of the skeleton before fusion of the epiphyses occurs, usually by the age of 16th year.

Within the research sample and the available possibilities, we can say that yogic practices have

positive effect on the selected variables under research. Yogic practices with asanas work directly to strengthening the discs, maintain their elasticity, exploiting and increase the spaces within the vertebrae, widening the gap between the thighs and shine bone areas resulting in increased height. On the basis of statistical analysis of data it was concluded that 12 weeks of yogic practices caused significant improvement on height among school going children. This study revealed that our spinal column and lower extremities are responsible for increasing height. Through yoga the functioning of spinal column and lower extremities can be developed in relation to increasing height. This study also supported by a book named "How to naturally increase your height" (2004) So, it is observed that by yogic practices and activities the growth hormones can be developed and help in strengthening the discs, increase their elasticity, exploiting and increase the spaces within the vertebrae, widening the gap between the thighs and shine bone areas resulting in increased height.

Through yogic practice the perception of depth and distance can also be improved significantly. Poor eye vision in school going children is caused due to lack of nutrition diet, wrong lifestyle, constantly watching T.V, overusing mobile phone, wrong reading habits and mental stress. Poor eye vision is due to refractive error and visual impairment which result in myopia and hyperopia. This is also shown by Maggie Fox and O'Donoghue in the experiment probably that is why the performance was found significant because the perception is the measure factor which may affect the eye-vision. O'Donoghue et al.,(2010) made a research work on Refractive error and visual impairment in school children in Northern Ireland Aims: To describe the prevalence of refractive error (myopia and hyperopia) and visual impairment in a representative sample of white school children.

Through yogic practices, the psychomotor performance can be improved significantly. When the eye-vision can be influenced by pranayama practice and Jal neti Kriya then probably that is the reason to improve the performance in eye-vision.

Eye vision can be improved through yogic practices. The result of the study revealed that combined program was most effective for improving the eye vision by the asana and Kriya. In the combined program, experimental group was provided Trataka (concentrated gazing), Jal neti (nasal cleansing), Kapalbhati (shining skull of fierce breath). It helped in improving the functioning of eyes, stimulating optic nerves, Excretion of the obstructing toxic matters and to overcome various eye related disorders by reducing the mental stress, tension in eye muscles and relaxing the eye muscles which result in a child's concentration, memory, study habits, academic performance and level of self-satisfaction.

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