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Amarjeet Singh
Research Scholar, Department of
Physical Education, Guru Kashi
University, Talwandi Sabo,
Bathinda, Punjab, India

Dr. Ravinder Singh Sumal
Associate Professor, Department
of Physical Education, Guru
Kashi University, Talwandi
Sabo, Bathinda, Punjab, India

Effect of yogic pranayam on cardiovascular efficiency of school children

Amarjeet Singh and Dr. Ravinder Singh Sumal

Abstract

The researcher was selected this study "effect of yogic pranayam on cardiovascular efficiency of school children" A total number of 100 school children (50 boys & 50 girls) are observed for the study by having a standardized test. Their age group is in the stage of between 10 to 15 years. The data was collected through the 12 minutes' walk and run test after the. To observe the theory of the study illustrative statistics like mean and standard variation & t ratio were used. It concludes the significance difference of cardio vascular efficiency among boys and female of Himachal Pradesh. The level of significance set at 0.05 levels.

Keywords: Pranayama, cardiovascular, efficiency among

Introduction

The eight limbs

Patanjali's writing also became the basis for a system referred to as "Ashtanga Yoga" ("Eight-Limbed Yoga"). They are:

- Yama (The five "abstentions"): Ahimsa (Non-violence, non-harming otherliving beings), Satya (truthfulness, nonfalsehood), Asteya (nonstealing), Brahmacharya (celibacy, fidelity to one's partner), and Aparigraha (non-avarice, non-possessiveness).
- Niyama (The five "observances"): Śauca (purity, clearness of mind, speech and body), Santosha (contentment, acceptance of others and of one's circumstances), Tapas (persistent meditation, perseverance, austerity), Svādhyāya (study of self, self-reflection, study of Vedas), and Ishvara-Pranidhana (contemplation of God/Supreme Being/True Self).
- Asana: Literally means "seat", and in Patanjali's Sutras refers to the seated position used for meditation.
- Pranayama ("Suspending Breath"): Prāna, breath, "āyāma", to restrain or stop. Also interpreted as control of the life force.
- Pratyahara ("Abstraction"): Withdrawal of the sense organs from external objects.
- Dharana ("Concentration"): Fixing the attention on a single object.
- Dhyana ("Meditation"): Intense contemplation of the nature of the object of meditation.
- Samadhi ("Liberation"): merging consciousness with the object of meditation (Rat, 1986).

Prāṇāyāma is a Sanskrit word alternatively translated as "extension of the prāna (breath or life force)" or "breath control." The word is composed from two Sanskrit words: prana meaning life force (noted particularly as the breath), and either yama (to restrain or control the prana, implying a set of breathing techniques where the breath is intentionally altered in order to produce specific results) or the negative form ayāma, meaning to extend or draw out (as in extension of the life force). It is a yogic discipline with origins in ancient India (Sharma 2000).

Prāṇāyāma techniques and forms include

- Agni-prasana or Agni Prana ("Breath of Fire") like kapalabhati.
- Agnisarprāṇāyāma - an abdominal breath.
- Anulomaprāṇāyāma - a form of alternate nostril breath (distinct from nadishodhana).

Correspondence

Amarjeet Singh
Research Scholar, Department of
Physical Education, Guru Kashi
University, Talwandi Sabo,
Bathinda, Punjab, India

- Bhastrikapranāyāma ("bellows breath") - fast and forceful inhales and exhales driven by diaphragmatic breathing. Bhastrika is a cleansing kriya to clear the nadis, nostrils, and sinuses for pranāyāma.
- Bhramaripranāyāma ("bee breath") - making a humming sound while breathing.
- Chandra Bhastrikapranāyāma.
- Chandra bhedenpranāyāma.
- Kapalabhatipranāyāma ("skull shining breath") - similar to bhastrika, but with a passive inhale and a forceful exhale, powered mainly by the diaphragm and the external and internal obliques (Ramanovaski, W., Pasek, T 1977).
- Kumbhakapranāyāma ("Breath retention") - controlling both antara (holding in) and bahya (holding out).
- Lom Anulom Vilompranāyāma.
- Murchhapranāyāma.

Nadi sodhana in yoga

- NadiShodhanpranāyāma.
- Pratilompranāyāma: the inverse of anuloma: the inhale is drawn through one nostril (alternating sides each time) and the exhale is released through both nostrils.
- Samavṛttipranāyāma: ("Even breathing")-the inhale and exhale are of equal size and duration. The opposite of visamavṛtti.
- Shitalipranāyāma: ("Cooling breath")-Inhalation is drawn over the curled and extended tongue.
- Shitkaripranāyāma: Similar to shitali but the tongue is held between the teeth.
- Surya Bhastrikapranāyāma.
- Surya bhedanapranāyāma and Chandra bhedanapranāyāma: Channeling breath in one side and out the other without alternating, meant to energize ida or pingalanadi. The right nostril is associated with the sun (surya) and left nostril with the moon (ida).
- Surya Chandra Bhastrikapranāyāma (Kiemons 1972).
- Udgeethpranāyāma: ("Chanting pranāyāma") - often done with the chanting of the Om mantra.
- Ujjayipranāyāma: also known as "victorious or conquering breath" is breathing with the glottis slightly engaged, producing a soft sound. Considered to be the only pranāyāma one can safely practice while walking or engaged in other activities (e.g. during āsana practice. Some older versions require digital pranāyāma (the fingers controlling the nostrils). The slightly closed airway creates a valsalva maneuver and typically results in a parasympathetic response (lowered heart rate, lowered blood pressure, increased digestive activity, stimulation of the vagus nerve, etc.)

- Vilompranāyāma - "the air is inhaled with pauses and exhaled as one breath or vice-versa, usually with added kumbhaka" (M. Moorthy (1972).
- Visamavṛtti-"Uneven breathing" where specific ratios (e.g. 1:4:2) are maintained between inhale, retention, and exhale. The opposite of samavṛtti.
- Laughter yoga is based on the belief that voluntary laughter provides the same physiological and psychological benefits as spontaneous laughter. Laughter Yoga is done in groups, with eye contact and playfulness between participants. Forced laughter soon turns into real and contagious laughter. This yoga can be recognized in pranayama or other forms

Cardiovascular endurance

The heart is the most important muscle in the human body and if it is kept healthy then you can avoid numerous health problems. Cardiovascular endurance is the most important aspect of fitness. It is basically how strong your heart is, which can potentially add years to your life. Another reason that cardiovascular endurance is important is because your heart controls the oxygen flow to all your muscles - meaning cardiovascular health has a direct impact on your performance, both endurance and strength wise.

The reason your cardio performance can be improved is because the heart is a muscle, and like all other muscles in the body if you keep working it it will adapt to the workload given. This allows us to have direct control of how healthy one of the most important systems in our body is. But keep in mind there are other factors that effects heart health, such as cholesterol, and blood pressure. Eating right and exercising will ensure that your heart becomes, and remains, healthy throughout your life.

Method and technique

The experimental type study was designed to find out the significance difference in cardiovascular endurance of boys and girls of Himachal Pradesh. The 100 school children (50 boys & 50 girls) were selected for this study with the age group of 10 to 15 years. The random sampling method was used for selection of subject. In this study the pretest and post test was conducted for data collection and two week training schedule of yoga pranayam also applied on both groups. The differences of cardio vascular efficiency was calculated through the 12 minutes' walk and run test. The t ratio was used for significance of this study. After that the difference in professional problems was presented in following table & graph.

Statistical analysis & interpretation of data

Table 1: 'T'ratio of cardio vascular efficiency of school Boys

S. N	Experimental Group	Mean	S.D	M.D	S.E.D	't' Ratio
1	Pre Test	29.58	6.8	2.16	1.4	1.54
2	Post Test	31.74	7.9			

*Significant at 0.05 level.

The above table shows comparison of cardiovascular efficiency of school boys between pretest and posttest. The table shows that the mean scores of the pretest are 29.48, which is lower than posttest. The Difference between the two mean scores is tested by t-ratio. The obtained t- ratio is 1.54

which are less than table value which is significant at 0.05 level of significance. So there is no significant difference between the mean score of pretest and posttest experimental group of school boys.

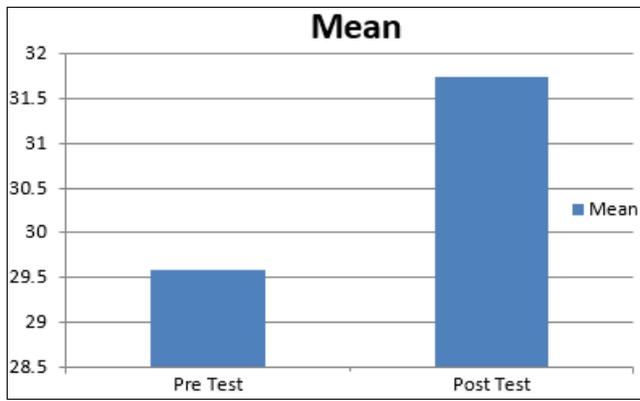


Fig 1: Mean value of cardio vascular efficiency of school boys

Table 2: ‘t’ ratio of cardio vascular efficiency of school Girls

S/N	Experimental Group	Mean	S.D	M.D	S.E.D	‘t’ Ratio
1	Pre Test	25.6	5.9	1.8	1.2	1.5
2	Post Test	27.4	7			

*Significant at 0.05 level.

The above table shows comparison of cardiovascular efficiency of school girls between pretest and posttest. The table shows that the mean scores of the pretest are 25.6, which is lower than posttest. The Difference between the two mean scores is tested by t-ratio. The obtained t- ratio is 1.5 which is less more than table value which is significant at 0.05 level of significance. So there is no significant difference between the mean score of pretest and posttest experimental group of school girls.

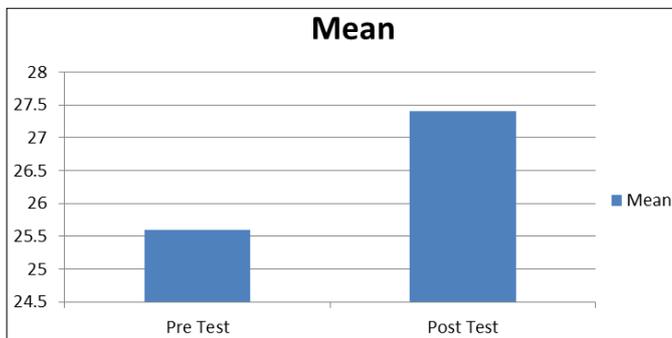


Fig 2: Mean value of cardio vascular efficiency of school girls

Conclusion

After the used of suitable statistical analysis (t ratio) it can be concluded that the cardio vascular efficiency is increase after the pranayam training in school children.

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