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Investigating the influence of yogic practices and interval training on specific physiological variables among high school male students

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Abstract

The aim of the study was to determine whether there was a substantial enhancement in the efficiency of physiological and biochemical variables as a result of specific asanas and interval training. In the execution of this inquiry, the researcher utilized a random sampling method. The research encompassed a total sample of ninety boys selected at random from a pool of 150 students attending Shri Navdurga High School, Rajpipla, Narmada District, Gujarat, with ages ranging from 12 to 15 years. The research design employed pre- and post-tests in conjunction with an analysis of covariance technique. The practice of yogic asanas and interval training demonstrated a significant improvement in pulse rate, breath-holding duration, and vital capacity. When comparing Experimental Group-I (yogic asanas) with the Control Group, there was a notable improvement in pulse rate, vital capacity, and breath-holding duration. Likewise, a significant improvement in these parameters was observed when comparing Experimental Group-II (interval training) with the Control Group. However, when the physiological variables of Experimental Group-I were compared with those of Experimental Group-II, no significant difference was found in the case of Experimental Group-I, whereas Experimental Group-II exhibited a significant difference in physiological variables. The study suggests that similar investigations should be undertaken for different age groups of males.

Keywords: Interval training, physiological, yogic practices, biochemical

Introduction

In the contemporary era, sports assume a significant role in our existence. Not too long ago, it was the pastime of the affluent at leisure. Nowadays, under modern circumstances, countless individuals actively engage in it, and sports have seamlessly integrated into the tapestry of contemporary life, serving as a counterbalance to the excessive comforts and indulgences of our times.

Yoga

"Yoga imparts a holistic message to humanity. It conveys a message to the human physique, it conveys a message to the human intellect, and it conveys a message to the human spirit as well.

Intelligent and capable youth should step forward to propagate this message to every individual, not only within India but also to every corner of the globe."

Yoga is a comprehensive system of physical, mental, and spiritual practices that originated in ancient India over 5,000 years ago. It is a profound and multifaceted discipline that encompasses various techniques, philosophies, and approaches to achieve a state of balance, harmony, and wellbeing. Yoga has become a global phenomenon, with millions of people worldwide practicing it for its myriad physical and mental benefits.

Historical Background

Yoga has its roots in the ancient Indian civilization, particularly in the Indus Valley and Vedic traditions. The word "yoga" is derived from the Sanskrit word "yuj," which means to unite or yoke. Over the centuries, yoga has evolved and been documented in texts like the Yoga Sutras of Patanjali, the Bhagavad Gita, and the Upanishads.

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Philosophy of Yoga

Yoga is underpinned by various philosophical principles. One of the central tenets is the concept of "union," which refers to the union of the individual self (atman) with the universal consciousness (Brahman). The four main paths of yoga include:

- **Jnana Yoga:** The path of knowledge and wisdom.
- **Bhakti Yoga:** The path of devotion and love.
- **Karma Yoga:** The path of selfless service.
- **Raja Yoga:** The path of meditation and control of the mind.

Physical Aspects

The most well-known aspect of yoga in the Western world is the practice of physical postures or asanas. These asanas are designed to promote strength, flexibility, and balance. Hatha yoga, a branch of Raja Yoga, focuses on these postures and is often what people think of when they refer to "yoga."

Breathing and Pranayama

Pranayama, or breath control, is an essential component of yoga practice. Various breathing techniques are employed to enhance the flow of vital energy (prana) in the body, calm the mind, and improve lung function.

Meditation and Mindfulness

Meditation plays a pivotal role in yoga. It involves focusing the mind on a specific object, thought, or breath to achieve mental clarity, relaxation, and self-realization. Mindfulness meditation is also a key aspect of yoga, promoting present-moment awareness and reducing stress.

Moral and Ethical Principles

Yoga is not merely about physical postures; it encompasses ethical guidelines known as the Yamas (Restraints) and Niyamas (Observances). These principles emphasize qualities like truthfulness, non-violence, purity, contentment, and self-discipline, providing a moral framework for a yogic lifestyle.

Health Benefits

Yoga is known to offer a wide range of health benefits. Regular practice can improve flexibility, balance, and strength. It can also aid in stress reduction, relaxation, and mental clarity. Some studies suggest that yoga can have positive effects on conditions such as hypertension, anxiety, depression, and chronic pain.

Spiritual Growth

For many practitioners, yoga is a means of spiritual growth and self-realization. It provides a path to inner peace, self-awareness, and a deeper connection to the self and the universe.

Types of Yoga

There are many different styles and approaches to yoga, each emphasizing different aspects and techniques. Some well-known types of yoga include:

- **Vinyasa:** A dynamic style that links breath with movement.
- **Bikram:** A series of 26 challenging poses practiced in a hot room.
- **Ashtanga:** A structured, vigorous style with a set sequence of poses.
- **Kundalini:** Focused on awakening the dormant energy within.

- **Iyengar:** Emphasizes precise alignment and the use of props.
- **Yin:** A slow, passive style that targets deep connective tissues.

Yoga in modern society

Yoga has been embraced worldwide as a holistic approach to health and well-being. It is commonly used in rehabilitation and stress management programs and is integrated into educational and corporate settings. Additionally, it has become a multi-billion-dollar industry, with various products and apparel designed for yoga practitioners.

In summary, yoga is a profound and multifaceted discipline that encompasses physical postures, breath control, meditation, and a philosophical framework aimed at achieving physical, mental, and spiritual well-being. Its benefits range from improved physical health to spiritual growth and self-realization, making it a valuable practice for individuals seeking balance and harmony in their lives.

Interval Training

Interval training, often referred to as high-intensity interval training (HIIT), is a versatile and highly effective exercise regimen that has gained significant popularity in recent years. This training method involves alternating between short, intense bursts of physical activity and brief periods of rest or lower-intensity exercise. Interval training is known for its time efficiency and ability to deliver numerous health and fitness benefits. In this detailed overview, we will explore the concept, types, benefits, and considerations related to interval training.

Interval training involves exposing the body to brief yet recurring intervals of decreased intensity. This method of training is endorsed by numerous elite coaches, trainers, and accomplished athletes who have harnessed its benefits.

- A defined distance that is recurrently covered a set number of times.
- A period of recuperation in which the athlete engages in a leisurely jog and relaxation.

Concept and Principles of Interval Training

Interval training is based on the principle of challenging the body with short, intense bouts of exercise followed by recovery periods. The goal is to elevate the heart rate and exert maximum effort during the high-intensity intervals, which are interspersed with low-intensity or rest intervals to allow for recovery. This approach enhances the cardiovascular system, improves endurance, and stimulates fat burning while minimizing the risk of overtraining and injury.

Types of Interval Training

Interval training comes in various forms, catering to different fitness goals and preferences:

- **Tabata:** Named after Japanese researcher Dr. Izumi Tabata, this protocol consists of 20 seconds of all-out effort followed by 10 seconds of rest. It is an efficient method for building cardiovascular fitness and muscular endurance.
- **HIIT (High-Intensity Interval Training):** HIIT workouts involve short bursts of intense exercise (e.g., sprints, burpees, or jump squats) followed by rest or low-intensity periods. HIIT can be customized to target specific fitness goals, including weight loss and muscle building.
- **Fartlek:** A Swedish term meaning "speed play," Fartlek

involves unstructured intervals of varying intensity. Runners, for example, might alternate between jogging, sprinting, and walking as they choose.

- **Pyramid Intervals:** These workouts involve gradually increasing and then decreasing the duration or intensity of intervals. For example, you might start with a 30-second sprint, then a 45-second sprint, followed by a 60-second sprint, and then reverse the pattern.
- **Cross Fit:** Cross Fit workouts often incorporate high-intensity interval training by combining weightlifting, aerobic exercises, and other forms of functional training.

Benefits of Interval Training

Interval training offers a wide range of benefits, making it an attractive option for individuals seeking efficient and effective workouts:

- **Efficient Use of Time:** Interval training can deliver substantial benefits in a shorter amount of time compared to traditional steady-state exercises.
- **Improved Cardiovascular Health:** HIIT has been shown to improve heart health by increasing heart rate and circulation, reducing blood pressure, and enhancing the efficiency of the cardiovascular system.
- **Enhanced Fat Loss:** High-intensity intervals stimulate fat metabolism and increase the after burn effect (excess post-exercise oxygen consumption or EPOC), promoting calorie burning long after the workout ends.
- **Increased Endurance:** Interval training can enhance aerobic capacity, allowing individuals to sustain physical effort for longer durations.
- **Preservation of Lean Muscle:** HIIT can help maintain or even build muscle mass while promoting fat loss, making it suitable for individuals looking to tone their bodies.
- **Variety and Challenge:** The flexibility of interval training allows for a wide range of exercises and variations, preventing workout monotony.

Considerations and Precautions

While interval training can be highly effective, it may not be suitable for everyone. Consider the following precautions:

- **Consultation with a Professional:** Before beginning any high-intensity exercise program, it is advisable to consult with a healthcare provider or fitness professional, especially if you have underlying health conditions.
- **Proper Warm-up and Cool-down:** Adequate warm-up and cool-down periods are essential to prevent injury and ensure a safe workout.
- **Progression:** Beginners should start with shorter intervals and gradually increase intensity and duration as they become more comfortable with the workout.
- **Individualization:** Interval training should be tailored to individual fitness levels and goals. One size does not fit all.
- **Recovery:** Adequate rest and recovery periods are crucial to prevent overtraining and reduce the risk of injury.

In conclusion, interval training is a dynamic and effective approach to exercise that offers numerous physical and cardiovascular benefits. By incorporating this training method into a fitness regimen while adhering to safety guidelines, individuals can experience improved fitness levels, enhanced cardiovascular health, and efficient calorie burning, making interval training a valuable tool

for those seeking diverse and results-oriented workouts.

Statement of the problem

The purpose of the study was to find out whether there is any significant improvement on the efficiency of the physiological and biochemical variables through selected asanas and interval training.

Hypothesis

1. There may be significant differences in the way the selected physiological variables respond to yogasanas.
2. There may be significant differences in the way the selected physiological variables respond to interval training.
3. There may be significant differences on the responses of selected physiological variables among yogic practices and interval training groups.

Significance of the problem

1. The study might throw light on whether selected yogasanas and interval training might cause desirable changes on selected physiological variables.
2. It would also be possible to find out whether any one exercise program might have a marked difference over the other in bringing out changes in the selected physiological variables.

Delimitations

1. The subjects were selected randomly from Shri Navdurga High School, Rajpipla, Narmada District, Gujarat.
2. The study was delimited to the age group ranging from 12 to 15 years.
3. The study was conducted on 90 boys only.

The following physiological variables only were selected.

Physiological variables

1. Vital capacity
2. Pulse rate
3. Breath holding time.

Limitations

The study was limited in the following aspects and these limitations would be taken into consideration in the interpretation of the results. The possible variables such as air, temperature, atmospheric pressure, and relative humidity etcetera during the testing periods, could not be controlled and their possible influence on the result of the study was not taken into consideration while interpreting the result.

Methodology

Sample and Design

To execute this investigation, the research scholar employed random sampling method. The study was conducted on a total sample of 90 boys drawn randomly from 150 students of Shri Navdurga High School, Rajpipla, Narmada District, Gujarat, age was ranged from 12 to 15 years. The pre- and post-tests design employing analysis of covariance technique was adopted.

Procedure

Experimentation-I

The selected 10 asanas training was given in 6 days a week except Sunday. The duration of the exercises was 20 min during the 1st month, 30 min during the next month, and 40

min during the 3rd month in the morning from 6:30 a.m. to 7.10 a.m.

Experimental-II

The interval training was practiced by the subjects 3 days/week over a period of 3 months. Before giving the interval training, the subjects were asked to warm up. The duration training schedule was 20 min during the 1st month, 30 min during the 2nd month, and 40 min during the 3rd month in the morning from 6:30 a.m. to 7:10 a.m.

Criterion measures

The following criterion measures were chosen for testing the hypothesis.

1. Vital capacity was recorded in liters/minute.
2. Pulse rate was measured in beats/min.
3. Breath holding time was recorded in seconds.

Statistical procedure

In this study, the analysis of covariance was used to analyze the results. The Scheff's post hoc test was used to analyze the means and differences between the means of the various groups.

Conclusion

1. Yogic practices and interval training had significantly improved the pulse rate, breath holding time, and vital capacity.
2. When the Experimental Group-I (yogic practices) was compared with Control Group, there was a significant improvement in pulse rate, vital capacity, and breath holding time.
3. When the Experimental Group-II (interval training) was compared with control group, there was a significant improvement in pulse rate, vital capacity, and breath holding time.
4. When the Experimental Group-I was compared with Experimental Group-II, experimental Group-I had no significant difference in physiological variables where Experimental Group-II had a significant difference in physiological variables.

Recommendations

1. Similar study can be conducted using other physiological and biochemical variables.
2. The study may also be conducted in asthmatic patients.
3. Similar study can be conducted separately for girls of different age groups.
4. It is recommended that yoga shall be made a compulsory part in the physical education program in schools and colleges.
5. Comparative studies on the effects of yogasanas and other training schedules on the variables used in the studies shall be conducted.
6. Studies to see the effect of yogasanas on psychophysiological and psychomotor variables shall also be conducted.
7. Similar studies may be conducted for other stages of yoga.
8. Similar studies may be conducted on state and national level players and athletes to find the effects.
9. It is recommended that similar studies may be conducted separately for men of different age groups.

References

1. Monga, Guneet. Yoga Education, Sports Publication, New Delhi.
2. Gohil KJ. Yogic Sciences, Angel Publication, Keshav Puram, New Delih.
3. Palani S. Yoga Education, Angel Publication, Keshav Puram, New Delih.
4. Anandamitra, Avadhutika. Yoga for Health. Kolkata: Ananda Marga Publications; c1999, 9293.
5. Back issues of Yoga Life, Monthly Journal of ICYER at Ananda Ashram, Pondicherry. www.icyer.com
6. Bhalla, Sandeep. Yoga qci Examination, Ansari Road, Daryaganj, New Delhi.
7. Dabas, Sunil. Theory of Scientific Sports Training, Sports Publication, New Delhi.
8. Singh, Sukhdev. Sports Training, Nipun Prakashan, New Delhi.
9. Abraham, George. Guide to Sports Training, Nipun Prakashan, New Delhi.
10. Dick WF. Sports training principles. London: Lepus Books; c1980.
11. Harre D. Principles of sports training. Berlin: Sporulated; c1982.
12. Jensen RC, Fisher AG. Scientific basis of athletic conditioning. Philadelphia: Lea and Fibiger, 2nd Edn; c1979.
13. Singh H. Sports training, general theory and methods. Patials: NSNIS; c1984.
14. Uppal AK. Sports Training. New Delhi: Friends Publication; c1999.