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Comparative study of some physiological variables of yogis and sedentary people

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Abstract
The purpose of this study was to compare the some physiological variables of yogis and sedentary people. It is hypothesized that there will be significant difference in some physiological variables of yogis and sedentary people. The present researcher has taken the male subjects for the study. The sources from Patanjali Yogpeeth of Yog Kendra and Sedentary People of Amravati district were taken as sources of data. The researcher was select 20 yogis and 20 Sedentary People from Amravati district as subjects. The purposive sampling method was applied to select the subjects for this study. The following criterion measures were chosen for testing the hypothesis. Peak Flow meter was used to measure the exhale capacity, HB percentage of the subjects was measured by HB apparatus (Sahil's Haemometer) and Stop watch was used to measure the pulse rate. Statistical analysis would be done on the basis of data collection. The data yogis and sedentary people would be compared by using't' test and as per the result would be analyzed and interpretation would be done. The level of significance would be kept at 0.05 to test the hypothesis. Result: There was a significant difference in exhale capacity and pulse rate of yogis and sedentary peoples. There was insignificant difference in hemoglobin percentage of yogis and sedentary peoples.

Keywords: Physiological, exhale capacity, hemoglobin, pulse rate

Introduction
Sedentary life style is a medical term used to denote a type of life with no or irregular physical activity. A person who lives a sedentary life style may colloquially be known as a coach potato. It is commonly found in both the developed and developing world. Sedentary activities include sitting, reading, watching television, playing certain activities video games and computer use for much of the day with little or no vigorous physical exercise. A sedentary life style can contribute too many preventable causes of death. A sedentary lifestyle and lack of physical activity can contribute to or be risk factor for anxiety, cardiovascular diseases, high blood pressure, diabetes, kidney stones, obesity and depression.

As physiology mainly focuses on the functions of structures, we cannot discuss physiology without knowing anatomy. Similarly, we cannot understand the anatomy & physiology until and unless we know the composition of human body.

The human body consists of atoms of chemical elements such as carbon, hydrogen, nitrogen and oxygen. It also contains smaller amounts of many other elements including, calcium, iron, phosphorus, potassium and sodium.

Atoms of chemical elements combine and make thin structures called molecules. Water is the most common molecule in our body. A molecule of water consists of two atoms of hydrogen and one atom of oxygen. Water about 65 percent of our body and most of the chemical reactions that take places in our body require water.

Scientists and physiologists have been of the view that the physical and physiological parameters of an athlete have to do with their performance more than the techniques and tactics of the players. Most of the sports and games demand greater amount of endurance vital capacity hemoglobin, speed, strength, flexibility etc.

Human anatomy and physiology is a vast subject, as is the art of hatha yoga. Never the less, combining knowledge from both fields is extremely beneficial to the yoga practitioner. Athletes can improve their performance and experience fewer injuries through a basic understanding of their musculoskeletal system. Similarly, yoga practitioners can benefit from

the application of Western science to their practice development. It is not necessary to memorize hundreds of muscles and bones to experience the benefits of applying science to yoga. What is necessary is the functional understanding of a manageable number of key anatomic structures in their settings as they relate to hatha yoga. Knowledge of these structures can be applied immediately to optimize your practice, break through blockages and avoid injuries [1].

Yoga is a philosophical system of exercise and meditation originating in what is now India 2000-4000 years ago. There are many forms of yoga which differ in specific practices, while maintaining the purpose of directing the mind and body. Common elements of many forms include postures (asanas), which are held for a certain period of time, controlled breathing exercises (pranayama) and meditation. Yoga practice has the general aim of facilitating the development and integration of the body, mind and breath to produce structural, physiological and psychological effects. Specifically, the development of a strong and flexible body which is free of pain, a balanced autonomic nervous system enabling all physiological systems to function optimally and a calm, clear and tranquil mind. Hatha yoga is the most common form of yoga practiced in Western societies. It involves asanas to develop strength, flexibility, balance and the co-ordination of the mind, body and breath, in combination with pranayama and meditation exercise to calm the mind and develop self-awareness. The different styles of hatha yoga that have developed are characterised by the rate at which asanas are performed, the physical intensity and level of difficulty, the relative emphasis on body alignment and relaxation and the ambient temperature in which it is practiced. Bikram yoga is a style that was synthesized from traditional yoga methods by Bikram Choudhury. It is performed in a warm/hot environment (~105o F, at least 40% humidity) for 90 minutes and comprises a set series of 26 postures as well as breathing exercises. Hot yoga is a style that is based on Bikram yoga but with subtle differences. Although many of the asanas may be common to both systems, others have been modified or omitted according to different schools of thought and which asanas are considered to be manageable and safe to perform [2].

Statement of Problem: "Comparative study of some physiological variables of yogis and sedentary people"

Purpose of the Problem

1. To find out the exhale capacity of yogis and sedentary people.
2. To find out the hemoglobin of yogis and sedentary people.
3. To find out the pulse rate of yogis and sedentary people.
4. To compare the exhale capacity of yogis and sedentary people.
5. To compare hemoglobin percentage of yogis and sedentary people.
6. To compare the pulse rate of yogis and sedentary people.

Hypothesis

It is hypothesized that there will be significant difference in some physiological variables of yogis and sedentary people.

Methodology

Source of Data

The present researcher has taken the male subjects for the study. The sources from Patanjali Yogpeeth of Yog Kendra and Sedentary People of Amravati district were taken as sources of data.

Selection of Subject

The researcher was select 20 yogis and 20 Sedentary People from Amravati district as subjects.

Sampling Method

The purposive sampling method was applied to select the subjects for this study.

Criterion Measures

The following criterion measures were chosen for testing the hypothesis.

Exhale capacity: Peak Flow meter was used to measure the exhale capacity.

Hemoglobin: HB percentage of the subjects was measured by HB apparatus (Sahil's Haemometer).

Pulse Rate: Stop watch was used to measure the pulse rate.

Statistical Analysis: Statistical analysis would be done on the basis of data collection. The data yogis and sedentary people would be compared by using't' test and as per the result would be analyzed and interpretation would be done. The level of significance would be kept at 0.05 to test the hypothesis.

Table 1: Comparison & significance difference of mean value of exhale capacity in yogis and sedentary people

Group	Variable	Mean	SD	SE	MD	O `t'	T `t'
Yogis	Exhale Capacity	379.6	52.257	13.59	31.1	2.289*	2.1
Sedentary people		348.5	30.997				

Level of Significance = 0.05 Tabulated't' 0.05 (38) = 2.02

The analysis of data from table-1 reveal that there is significant difference in exhale capacity between yogis and sedentary people. The obtained t-value of 2.289 is more than the table value of 2.02. Graphical representation of above table is made in figure no.1.

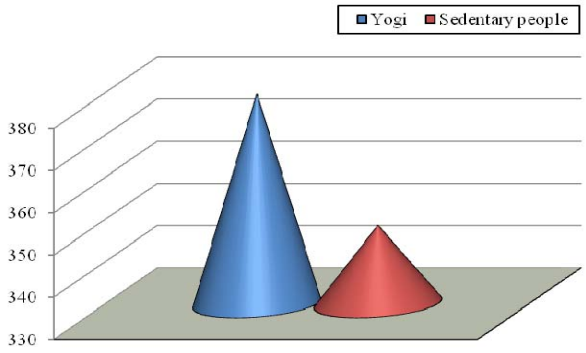

Fig 1: Mean value of exhale capacity between yogis and sedentary people

Table 2: Comparison & significance difference of mean value of hemoglobin between yogis and sedentary people

Group	Variable	Mean	SD	SE	MD	O `t'	T t'
Yogis	Hemoglobin	13.95	1.504	0.416	0.35	0.841	2.1
Sedentary people		13.6	1.095				

Level of Significance = 0.05 Tabulated‘t’ 0.05 (38) = 2.02

The analysis of data from table-2 reveal that there is insignificant difference in hemoglobin between yogis and sedentary people. The obtained t-value of 0.841 is less than the table value of 2.02. Graphical representation of above table is made in figure no.2.

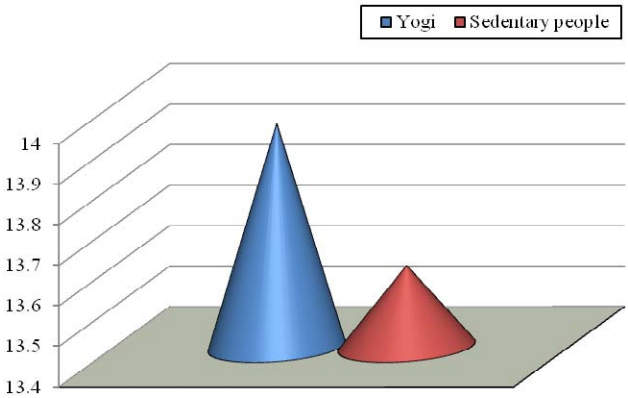

Fig 2: Mean value of hemoglobin between yogis and sedentary people

Table 3: Comparison & significance difference of mean value of pulse rate between yogis and sedentary people

Group	Variable	Mean	SD	SE	MD	O `t'	T `t'
Yogis	Pulse Rate	72.9	4.689	1.493	5.35	3.582*	2.1
Sedentary people		78.25	4.756				

Level of Significance = 0.05 Tabulated‘t’ 0.05 (38) = 2.02

The analysis of data from table-3 reveal that there is significant difference in pulse rate between yogis and sedentary people. The obtained t-value of 3.582 is more than the table value of 2.02. Graphical representation of above table is made in figure no.3.

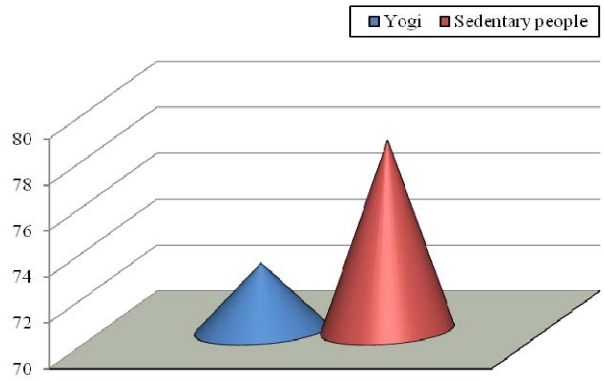

Fig 3: Mean value of pulse rate between yogis and sedentary people

Justification of Hypothesis

In the beginning it was hypothesized that there will be significant difference between some physiological variables of yogis and sedentary people. But after analysis and interpretation of data by applying‘t’ test it shows significant difference in exhale capacity and pulse rate variables of yogis and sedentary peoples. Hence the hypothesis was accepted.

Conclusion

On the basis of finding and within the limitation of present study the following conclusion has been drawn:

It was seen in table–1 there was a significant difference in exhale capacity of yogis and sedentary peoples.

From table–2 it was seen that there is insignificant difference in hemoglobin percentage of yogis and sedentary peoples.

It was seen in table–3 there is significant difference in pulse rate of yogis and sedentary peoples.

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