



Effects of Three Months Physical and Yogic Practices on Rbcs of School Level Basketball and Volleyball Players

KEYWORDS

RBC, Yoga, Exercise, Basketball and Volleyball Players

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ABSTRACT

The exercises aimed at increasing strength and endurance in the innermost muscles by gradually repeating complete sets of movements which simultaneously created natural coordination among muscles and body organs, unlike Yoga which was meant to achieve the same objectives with the body kept motionless and at rest (Menacho, 2010). Purpose of this study is to find out the effects of certain yogic and physical practices on Red blood cells of school level basketball and volleyball players. For this purpose researcher selected 60 male basketball and volleyball students of D.P.S. Ghaziabad. Total students were divided into three equal groups one groups was assign to perform experts suggested well designed certain yogic practices and second groups was assign experts suggested well designed physical exercise and third group was not assign any activity. The pre and post test was taken before and after three months practices. T-test was applied on gathered data from pre and post test. Results of the study revealed that the RBCs of yoga group and exercise group was significantly greater that control group.

Introduction

The human body is similar to a machine. If mistreated and not properly maintained, the machines will malfunctions and cease to run efficiently. Our bodies are similar, in proper maintenance fosters deterioration of the numerous physiological systems within the body. It is vital issue now to discuss that physiologists have expressed that physical exercise improves and promotes the efficiency of the whole organism and is essential for the proper functioning and maintenance of all the systems of the body. A balanced programme of physical fitness is profound importance to the life of an individual. There is scientific evidence that neglect of regular activity mainly during adolescence cannot be fully compensated later on in life.

The basketball and Volleyball games are known for skillful, speedy and powerful actions. A competition performance is no longer occurring at random as a result of chance alone in the games. Basketball is a game where full speed is seldom achieved by a player and in fact very in frequently warranted.¹ The player must always be ready to stop and change direction quickly and this suggests that a compromise must be reached between the use of outright speed and use of controlled speed so that he can drop quickly and change the direction on demand Basketball player is most effective when he can start quickly and move with controlled speed to a given spot on the floor. Therefore, Basketball is more often a game of nimble and quick bursts of speed from side to side fluent forward movement on player surface.

The word yoga is derived from the root "YUJ" or yoke that means union or merger. The merger of soul with god and the experience of oneness with him are meant by yoga. The state of Samadhi can be attained through yoga.

The scientific nature of the yogic practices was first revealed when late swami Kuvalyanada started his scientific research in the field of yoga 1924. These research findings could remove the mystical sheath over it. He showed

pleasant posture produces mental equilibrium and prevents fickleness of mind. Asanas are not merely gymnastic exercise: they are posture.

Today yogic practices have become popular throughout the world, but there are many misconceptions about these practices due to the lack of scientific information about them. Yogic practices are generally looked upon as exercise physiology. The physiology of yogic practices differs greatly from that of exercise physiology.

The experiments on Yoga in relation to neuro-psychophysiological aspects also revealed that. Yoga contributes to take care of one's attention, motivation, anxiety concentration, neuromuscular efficiency, balance, coordination etc. (Bera et al., 1990: Gore, 1987: Kulkarni & bhogal, 1991: Sahsi, 1988: Vinod et al., 1991) that require for better shooting performance in Basketball. Like Yoga, Sufism also considers similar contents, but the usefulness of this content in area of sports has not been verified till-date.

The exercises aimed at increasing strength and endurance in the innermost muscles by gradually repeating complete sets of movements which simultaneously created natural coordination among muscles and body organs, unlike Yoga which was meant to achieve the same objectives with the body kept motionless and at rest (Menacho, 2010).

Shantha meena, (2007) examined the effect of yogasanas and aerobic training on the selected physiological and bio chemical variables of middle aged women. Thirty middle aged women were selected and first 10 volunteers underwent 12 weeks training programme on yogasanas. The second 10 volunteers underwent training programme on walking for 30 minutes. The third 10 volunteers acted as control group. The suitable physiological and bio chemical parameters (blood pressure and cholesterol) were taken before and after the training programme for all the three groups. ANCOVA was used to analyse the data obtained. The results showed that there is greater improvement in blood pressure and cholesterol levels in the experimental

groups.

Shenbagavalli and Raj Kumar (2007) investigated the effect of pranayama on selected physiological variables among men volleyball players. Twenty four male subjects for this study were selected from Dr. Sivanthi Aditanar college of physical education, Tiruchendur randomly and divided into two groups as experimental and control groups. Data were collected from each subject before and after the training. The collected data were statistically analyzed by using analysis of covariance (ANCOVA). It was found that there was significant difference on selected physiological variables of resting pulse rate, breath holding time and diastolic blood pressure in the experimental group when compared to the control group.

PROCEDURE

Selection of subjects

For the purpose of this study Eighty (N = 60) male Basketball and volleyball students aged between 12 to 17 years were selected randomly from D.P.S. Ghaziabad U.P. for this study. The age of the subjects was considered from the scholar register. All the subjects were the intermediate players of basketball and volleyball and practice regularly and voluntarily agreed to extend full co-operation and efforts for successful competition of investigation. The researcher himself expounded the details and importance of this research to the participating subjects.

Inclusion and Exclusion Criteria The criteria for inclusion and exclusion of the subject were as follows:

- The subjects who are expected to remain present till the experimental trials are finished were incorporated in this study.
- The players suffering from known *serious health problem*, as ruled out by the physician, were excluded.

The subjects who agreed to restrict themselves into yogic diet during the tenure of the experiment were included.

- Final selection of the subjects will be done as per the suggestion of the basketball and volleyball coach.

The subjects will be divided in three groups, Experimental groups 'A', 'B', and Control Group 'C' of 20 subjects each. The groups were randomly assigned to act as controlled group and experimental groups as suggested by Robert and James (1969).

Reliability of data

The reliability of data will be established following the instrument reliability and tester competency.

Instrument Reliability

The entire instrument will be available in human physiology laboratory, OPJS University, Rajasthan. The estimation of hematological variables will be done with the help of a bio-chemist and trained lab technicians in registered pathology. And the instruments such as haemocytometer, auto-analyzer, Stethoscope, stop watch etc. of high quality their reliability was confirmed by the authorized manufacturer and result shows excellent accuracy. The testing procedure will be started only after established the instrument reliability.

Collection of Blood Sample

I. Sterilization

New sterilized syringes will be used for drawing the blood

samples all vials will be cleaned properly in chromic acid and rinsed with distilled water. New sterilized container containing E.D.T.A. for hematology and containing SST get for biochemistry will be used.

II. Collection of blood

First of all, the students arm will be cleaned with diluted savlon and again cleaned with rectified spirit. 5 ml. of blood will be drawn with minimum stress from each student. Out of 5 ml. of blood, 1 ml. of blood will be delivered in EDTA (Ethylenedimane tetra – acetic acid) vial and shaken well for anticoagulation. Remaining 4 ml. of blood will be delivered in plain SST vial and will be kept in incubator for clotting and retraction.

EXPERIMENTAL DESIGN

Sixty male students of D.P.S. Ghaziabad will be divided in three groups of 20 each. The first two groups namely 'A' and 'B', will be selected for specially designed Exercise and yogic practices respectively and the third control group 'C' was not be assign any activity. The age of the subjects ranges 12-17 years. The purpose of the study will be clearly explained to the subjects. All the subjects were intermediate to basketball and volleyball activity, the extra classes for training were provided to novice subjects. The data for hematological variables of basketball and volleyball players were collected prior and post training programme of three months.

Procedure Experiments

The experiment will be conducted for a period of three months, excluding the periods taken for collecting the data.

Yogic Practices

The experimental group 'A' will perform certain suggested yogic practices by yoga experts. Such as Sarvangasana, Matsyasana, Halasana, Bhujangasana, Salabhasana etc. The total duration of yogic practices will be 45 minutes and 5day/week.

Physical Practice

The experimental group 'B' will perform expert suggested and specially designed exercises, they will be performed in repetition method. The total time duration will be 45 minutes and 5day/week.

STATISTICAL PROCEDURE

To establish the effect of the yogic practices and exercises on RBCs of basketball and volleyball school players, the collected data prior and post experiment were analyzed by applying two tailed T- test at .05 level of significance.

Analysis of Data

Table – 1

Two tailed t- Test for analyzing effects of yoga on RBCs count of school students of basketball and volleyball players.

	Pre Test	Post Test	M.D.	T-Value
Mean	3.38	3.99	.61	12.85*
Standard Deviations	.3349	0.2197		

*Significant at .05 level
at (2,18) $t_{.05} = 1.74$

[Tab-'t'

It is evident from analysis of data that significance difference exists between pre and post means of RBCs of yoga

group. We are able to conclude that the yogic exercise are positive affected to RBCs counts among school level basketball and volleyball players.

Table – 2
Two tailed t- Test for analyzing effects of Exercise on RBCs count of school students of basketball and volleyball players.

	Pre Test	Post Test	M.D.	T-Value
Mean	3.31	3.92	.54	7.16*
Standard Deviations	.327	0.291		

*Significant at .05 leve [Tab-'t' at (2,18)_{.05} = 1.74]

It is evident from analysis of data that significance difference exists between pre and post means of RBCs of exercise group. Thus we are able to conclude that the exercise affects positively to RBCs counts among school level basketball and volleyball players.

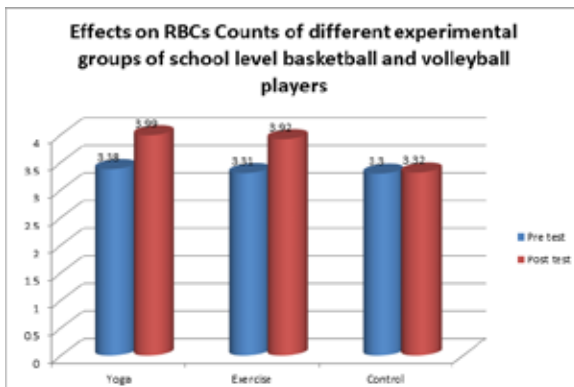
Table – 3
Two tailed t- Test for analyzing effects of Control on RBCs count of school students of basketball and volleyball players.

	Pre Test	Post Test	M.D.	T-Value
Mean	3.305	3.32	.015	1.45*
Standard Deviations	.4186	0.4104		

*Significant at .05 level [Tab-'t' at (2,18)_{.05} = 1.74]

It is evident from analysis of data that insignificance difference exists between pre and post means of RBCs of control group. Thus we are able to conclude that the inactivity not affects RBCs counts among school level basketball and volleyball players.

Figure – 1



Discussion of Findings

The number of red blood cells could be improved through practicing exercises and also performing yogic activities among school level basketball and volleyball players. Both the experimental groups were compared with control group which students were not participated in the any neither yogic nor physical activities. Pre and post value of yoga groups and Exercise groups. Yogic activities and Exercises makes greater oxygen supply from blood thus putting in to circulation the red blood corpuscles stored in spleen and accessory spleen. Yogic practices and exercises is also increased mayoglobin pigment (store keeper of oxygen), which is helpful to supply more amount of oxygen. The present investigation also supports the earlier findings of Krebs et.al.1983, Arpita 1990, Uppal 1986, Sajwan 1988, Malathi et.al 2001 and majumndar 2000.

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