



ISSN: 2456-0057
IJPNPE 2020; 5(1): 46-49
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www.journalofsports.com
Received: 12-11-2019
Accepted: 15-12-2019

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Comparison of selected physiological variables among men volleyball players of different positional play

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Abstract

The statement of this study was comparison of selected physiological variables among men volleyball players of different positional play. The study was designed to compare the physiological variables of men volleyball players of different positional play. To achieve the purpose of the study, sixty men volleyball players were selected from Annamalai University, Chidambaram, Tamil Nadu at random and their age ranged between 18 and 25 years, who has participated at minimum, inter college. Based on the relevant literature reviewed and in accordance with views of professional experts in Physical Education, the after reviewing the related literature and books the investigator selected the variables namely. Body Composition, Mean Arterial Blood pressure, Resting Pulse Rate. The selected criterion variables were measured from the college men volleyball players. One way analysis of variance (ANOVA) was used to find out the Comparison between independent and criterion variables. In all the cases, 0.05 level of confidence was fixed to test the significance, which was considered as appropriate.

On the basis of statistical findings, the following conclusions were drawn:-

1. There is no significant difference among setter, attacker and blocker in their body composition.
2. There is significant difference among setter, attacker and blocker in their mean arterial blood pressure, resting pulse rate.
3. The setter and attacker differ significantly in their mean arterial blood pressure and rest of the groups does not differ significantly.
4. The setter, attacker and blocker differ significantly in their resting pulse rate.
5. The setter and attacker differ significantly in their resting pulse rate and rest of the groups does not differ significantly.

Keywords: Physiological, positional play, volleyball players

Introduction

Sports is as old as human society and it has achieved a universal position in the modern society. It has now become an important part of educational process and social activities. Million of people participate in sports for the fun, adventure, health, physical fitness and financial benefits linked with a high degree of popularity.

The importance of sports in the life of a young student is invaluable and goes much further than the basic answer that "it keeps kids off the streets." Where else can a young, vulnerable youth learn values like discipline, responsibility, self confidence and sacrifice? Television, which may be the most important tool in the lives of young adults, does not show sufficient of these qualities, nor is it on the internet, or radio. Slightly it is up to the parents, teachers, sports teams, clubs, and after school programs to help shape, develop, and inspire these qualities into the lives of student athletes. I believe in order for this to happen, school sports programs must have a few components in place. The first thing they require is a high-quality core of coaches that appreciate the great duty that is placed upon their shoulders to help shape and arrange these student athletes not only in sports. But in their everyday lives. Yes, I did say coaches, because it is a duty that lies on the shoulders of more than one person and it is going to take more than one person to help guide these student athletes to victory.

Volleyball

The game of Volleyball is the second most popular sport in world. In 2014, the sport of volleyball was 119 years old.

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The sport originated in the United States and is now just achieving the types of reputation in the U.S. that it has received on a worldwide source, where it position at the back only Soccer in the midst of sharing sports.

Physiology

Physiology is the science of performance of all the organs and systems often organism. For the physiological coordination of the body to be fit, they must function well enough to bear to specific activity make different anxiety upon the being with respect to circulatory, respiratory, metabolic and neurologic process which are definite to the activity.

Different positional play of volleyball

Volleyball is basically a game of changeover from one of the above skills to the next, with choreographed team movement between plays on the ball. These team movements are strong-minded by the teams selected serve receive system, offensive system, treatment system, and suspicious system.

The serve be given system is the arrangement used by the getting team to effort to pass the ball to the elected setter. Systems can consist of 5 receivers, 4 receivers, 3 receivers, and in some cases 2 receivers. The most popular arrangement at superior levels is a 3 receiver arrangement consisting of two left sides and a libero getting every going round. This allows middles and right sides to become more particular at hitting and blocking.

Setter

The set is typically the second call that a team makes with the ball. The main goal of location is to put the ball in the air in such a way that it can be determined by an bother into the opponent's court. The setter coordinates the unpleasant movements of a team, and is the player who in the end decides which player will actually attack the ball.

Attacker

A Spanish player, #18 in red company, about to spike towards the Portuguese field, whose players try to block the way the attack, also known as the spike, is usually the third call a team

makes with the ball. The object of attacking is to lever the ball so that it lands on the opponent's court and cannot be defended. A player makes a sequence of steps (the "approach"), jumps, and swings at the ball.

Blocker

A block that is aimed at totally stopping an attack, thus construction the ball remains in the opponent's court, is called offensive. A well-executed offensive block is performed by jumping and reaching to go in with one's arms and hands over the net and into the opponent's area. It requires anticipating the way of the ball will go once the attack takes place. It may also need calculating the best foot work to executing the "perfect" block.

Statement of the problem

The purpose of the study is to compare the physiological variables among men volleyball players of different positional play.

Hypothesis

It is hypothesized that the chosen physiological variables would differ significantly among the volleyball players of different positional play.

Significance of the study

1. The study is useful to understand the physiological variables of men volleyball players.
2. The study is helpful to understand the physiological variables of volleyball players of different positional play.
3. The results of the study is useful for volleyball players to improve their performance
4. The finding of the study is useful for physical education teachers and coaches to frame specific and suitable training schedule for volleyball players based on their positional play.

Selection of test

Table 1: Variables and test selected

Sl. No	Variables	Test / Instrument	Unit of Measures
1	Body composition	Skin fold caliber (Jackson and Poolock 1978)	Millimeter
2	Mean arterial blood pressure	Sphygmomanometer, $DBP+1/3(SBP-DBP)$ (Pickering, 2005)	mm/Hg
3	Resting pulse rate	Stethoscope	Beats per second

Collection of Data

The data pertaining to the study were collected by applying the selected above mentioned tests. Following the under-described procedures.

Administration of tests

Body composition

Objective: The purpose of the test was to measure the fat percentage of individuals.

Equipment: Skin fold caliper.

Procedure: A skinfold caliper was used to assess the body fat. The instrument consisted of accurately dial which indicated in millimeter. (Henry. J 1975)

Scoring: To obtain a score of total body fat percentage, a

straighter was laid across the monogram connecting the scores of thigh sub scapular skin folds, where the straightedge intersected. (Edward Fox, 1982)

Mean arterial blood poessure

Objective: To find the blood pressure for men volley ball player.

Equipment: Sphygmomanometer.

Procedure: The subject is made to relax for some time, then they are taken the blood pressure and the reading is noted. The reading is systolic and diastolic pressure.

Resting pulse rate

Objective: To measure pulse rate

Equipment: Stopwatch, stethoscope and comfortable place or bed.

Procedure

The resting pulse rate of each subject was recorded between 6:00AM to 8 AM. 10 minutes before recording the heart rate, The subjects was instructed to remain take rest on their bed, By using the Pcupatory method or stethoscope on the chest per minute heart rate was counted.

Scoring

Score was recorded in numbers of pulse per minute.

Statistical technique

The One Way Analysis of Variance (ANOVA) will be used. Whenever the 'F' ratio is significant Scheffe's Post Hoc Test the level of significance was fixed at 0.05 level.

Finding

The body composition, resting pulse rate, and mean arterial blood pressure were selected as the variables. Random group design was employed. Randomly selected sixty college men volleyball players there were measured by body composition, resting pulse rate, and mean arterial blood pressure. Obtained data were analyzed to find out the relationship within the one way analysis of variance (ANOVA) will be used to find out whether the different positional play of college men volleyball players. The results pertaining to these have been presented in the following tables.

Results on body composition

Table 2: Analysis of variance on body composition of setter, blocker and attacker

Mean values of			Source of Variance	Df	SS	MS	'F'
Setter	Blocker	Attacker	Bet	2	51.3453	25.67716	2.75
13.43	15.38	13.41	Within	57	809.593	9.30566	

Table 2 shows the obtained means of, body composition of setter 13.43, blocker 15.38 and attacker 13.41. The obtained F value 2.75 was less than the required F value 3.15, to be significant at 0.05 level. This proved that there were significant differences among setter, blocker and attacker in

their body composition.

Results on mean arterial blood pressure

The results of mean arterial blood pressure is given in table 3.

Table 3: Analysis of variance on mean arterial blood pressure of setter, blocker and attacker

Mean values of			Source of Variance	Df	SS	MS	F
Setter	Blocker	Attacker	Between	2	172.77283	86.3864	3.51
86.028	90.18	88.264	Within	57	2140.69663	24.6057	

Table 4 shows the obtained means in, mean arterial blood pressure of setter was 86.028, blocker was 90.18 and attacker was 88.264. The obtained F value on the scores 3.5108 was greater than the required F value 3.15, to be significant at 0.05 level. This proved that there were significant differences

among setter, blocker and attacker in their mean arterial blood pressure.

Since significant differences were recorded, the results were subjected to post hoc analysis using Scheffe's Confidence Interval test. The results are presented in Table- 4.

Table 4: Scheffe's confidence interval test scores on mean arterial blood pressure

Mean			Mean Difference	C I
Setter	Blocker	Attacker		
86.03	90.18		4.15*	3.94
86.03		88.26	2.2	3.94
	90.18	88.26	1.92	3.94

*significant at 0.05 level

Table 4 shows the comparison among setter, blocker and attacker in mean arterial blood pressure. The differences between setter and attacker are significant and other comparisons are not significant.

Results on resting pulse rate

The results of resting pulse rate is given in table 5.

Table 5: Analysis of variance on resting pulse rate of setter, blocker and attacker

Mean values of			Source of Variance	Df	SS	MS	F
Setter	Blocker	Attacker	Between	2	514.033	257.016	5.762*
74.2	72.25	67.25	Within	57	3880.7	44.605	

Table 5 shows the obtained means in, resting pulse rate of setter was 74.2, blocker was 72.25 and attacker was 67.25. The obtained F value on the scores 5.762 was greater than the required F value 3.15, to be significant at 0.05 level. This proved that there were significant differences among setter,

blocker and attacker in their resting pulse rate. Since significant differences were recorded, the results were subjected to post hoc analysis using Scheffe's Confidence Interval test. The results are presented in Table- 6.

Table 6: Scheffe's confidence interval test scores on resting pulse rate

Mean			Mean Difference	C I
Setter	Blocker	Attacker		
74.20	72.25		1.95	5.30
74.20		67.25	6.95*	5.30
	72.25	67.25	5.0	5.30

Table 6 shows the comparison among setter, blocker and attacker in resting pulse rate. The differences between setter and attacker are significant and other comparisons are not significant.

Discussion on hypotheses

It was hypothesized that the chosen physiological variables would differ significantly among the volleyball players of different positional play. The results also revealed the same. Hence the hypothesis is accepted.

Conclusions

1. There is no significant difference among setter, attacker and blocker in their body composition.
2. There is significant difference among setter, attacker and blocker in their mean arterial blood pressure, resting pulse rate.
3. The setter and attacker differ significantly in their mean arterial blood pressure and rest of the groups does not differ significantly.
4. The setter, attacker and blocker differ significantly in their resting pulse rate.
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Recommendations

The findings of the study proved that there was significant difference among setter, attacker, blocker and libero in volleyball positional play. Efforts may be taken to improve the physiological variables of volleyball players of different position.

Suggestions for further research

During the process of the investigation, the investigator came across a number of ideas and suggestions allied to this study. Based on the experience gained, the following suggestions were made:

1. A similar study may be conducted among college level men volleyball players.
2. A similar study with larger samples may be undertaken to support the findings of this research.
3. Such studies may be conducted by the players of other games.

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