

Predict the Predominant Factors of Kabaddi Playing Ability from Selected Physiological Components among Women Players

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KEYWORDS

Playing Ability,
Resting Heart
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Systolic Blood
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Pressure.

ABSTRACT

The purpose of the study was to predict the women kabaddi playing ability from the selected anthropometrical, physical and physiological components among college level players. To achieve this purpose of the study, one hundred women kabaddi players were selected as subjects from the affiliated colleges of Bharathidasan University, Tiruchirappalli. Those who represented their respective college teams were taken as subjects. The age of the subjects were ranged between 18 to 25 years. The playing ability of the women kabaddi players was taken as the performance factor, which was subjectively assessed by three qualified coaches. The physiological variables such as resting heart rate, breath holding time, systolic blood pressure, diastolic and blood pressure were selected and it was measured by radial pulse method, manual nostril clip method, digital blood pressure monitor and digital blood pressure monitor respectively. To determine the relationship between dependent variable and independent variable Pearson product moment correlation was used. In all the cases 0.05 level of significance was fixed. It was concluded that the selected physiological parameters such as breath holding time, systolic and diastolic blood pressure have significant influence over kabaddi playing ability of women kabaddi players. However, resting hear rate was not significantly correlated with kabaddi playing ability.

1. Introduction

The physiological goal of training is to improve body function and optimize athletic performance. Training is primarily a systematic athletic activity of long duration, which is progressively and individually graded. Human physiological functions are modeled to meet demanding tasks Bompa, T.O., (1999) stated that proper training optimizes race performance, but also decreases the likelihood for injury, prevents over training and provides greater satisfaction Karikalan, (2015) suggested that, exercising at a high intensity results in an elevation of oxygen uptake and blood lactate concentration and is non-sustainable.

Physical activity causes beneficial changes in the functioning of all internal organs, particularly, the heart, lungs and circulatory system. The result of the previous studies have proved that exercise is the cheapest preventive medicine and after a period of training there is a slow but consistent reduction in resting heart rate along with an increase in stroke volume. It is a known fact that the slower heart rate and increased stroke volume provide a greater rest for the heart between beats.

Long-term aerobic training induces many physiological adaptations both centrally and peripherally mediated. The central cardiovascular adaptations include decreased heart rate, increased stroke volume of the heart, increased blood plasma, without any major changes in red blood cell count, which reduces blood viscosity and increased cardiac output as well as total mitochondrial volume in the muscle fibers used in the training (i.e. the thigh muscles in runners will have more mitochondria than the thigh muscles of swimmers). Mitochondria increase in both number and size and there are similar increases in myoglobin and oxidative enzymes. Adaptations of the peripheral include CA pillarization that is an increase in the surface area that both the venous and arterial capillaries supply. This also allows for increased heat dissipation during strenuous exercise. The muscles heighten their glycogen and fat storing capabilities in endurance athletes in order to increase the length of time in which they can perform work.

2. Objectives

The purpose of the study was to predict the women kabaddi playing ability from the selected anthropometrical, physical and physiological variables among college level players.

3. Methodology

To achieve this purpose of the study, one hundred women kabaddi players were selected as subjects from the affiliated colleges of Bharathidasan University, Tiruchirappalli. Those who represented their respective college teams were taken as subjects. The age of the subjects were ranged between 18 to 25 years. The playing ability of the women kabaddi players was taken as the performance factor, which was subjectively assessed by three qualified coaches. The following criterion variables were selected, the test and unit of measurement were shown in table 1.

Table 1: Criterion Variables Selected

S. No.	Criterion Variables	Test items	Unit of Measurement
1.	Resting Pulse Rate	Radial Pulse Method	Beats per minute
2.	Breath Holding Time	Manual Nostril Clip Method	In seconds
3.	Systolic Blood Pressure	Digital blood Pressure Monitor	mmHg
4.	Diastolic Blood Pressure	Digital Blood Pressure Monitor	mmHg
5.	Playing Ability	Judges Rating	In numbers

To determine the relationship between dependent variable and independent variable Pearson product moment correlation was used. In all the cases 0.05 level of significance was fixed to test the hypothesis.

4. Results

Table 2: Mean and Standard Deviation on Selected Physiological Components of Women Kabaddi Players

Variables	N	Mean	SD
Resting Heart Rate	100	67.06	1.20
Breath Holding Time	100	40.65	1.81
Diastolic Blood Pressure	100	73.83	2.21
Systolic Blood Pressure	100	116.02	1.47
Playing Ability	100	24.66	1.70

*Significant 0.05 level

Table II shows the mean and standard deviation (SD) values on resting heart rate, breath holding time, diastolic blood pressure and systolic blood pressure are 67.06 + 1.20, 40.65 + 1.81, 73.83 + 2.21, 116.02+1.47 and 24.66 + 1.70 respectively of the women kabaddi players.

Table 3: Correlation Co-Efficient Between Criterion Variables and Selected Physiological Components

S.No.	Variables Correlated	Obtained 'r'
1.	Kabaddi Playing Ability and Resting Heart Rate	0.097
2.	Kabaddi Playing Ability and Breath Holding Time	0.584*
3.	Kabaddi Playing Ability and Systolic Blood Pressure	0.173*
4.	Kabaddi Playing Ability and Diastolic Blood Pressure	0.204*

* Significant 0.05 level (Table value required is 0.138 for 98 degrees of freedom)

Table III shows that there were significant relationship between kabaddi playing ability and the selected physiological components such as breath holding time, diastolic blood pressure and systolic blood pressure of the women kabaddi players since the obtained correlation coefficient values 0.504, 0.173 and 0.204 are greater than the required table value. However, no significant relationship between kabaddi playing ability and resting heart rate (0.097) of the women kabaddi players. The obtained correlation coefficient values between kabaddi playing ability and the selected physiological components are graphically represented in figure-1.

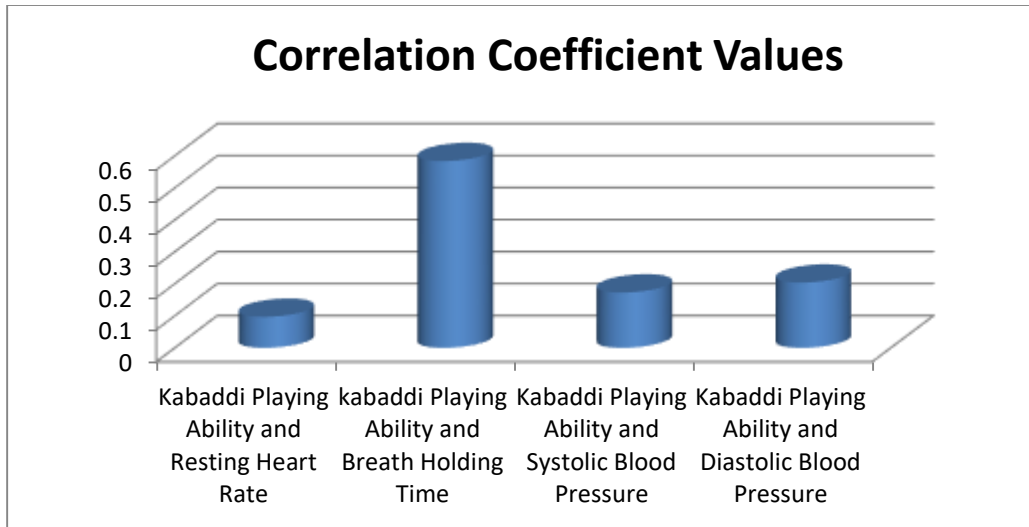


Figure-1: Diagram Showing the Correlation Coefficient Values between Kabaddi Playing Ability and the Selected Physiological Components

3. Discussion on Findings

The results of the study produced significant relationship between the playing ability of women kabaddi players with the selected physiological components such as breath holding time, systolic and diastolic blood pressure. However, no significant relationship was found between the playing ability with resting heart rate. The results of the study in corroboration with the studies of Sharma and Vijaykumar (1991), Arent, et. al., (2010) and Karikalan, I. (2015) conducted a study on the relationship of physiological variables to performance in soccer and kabaddi. The result of the study indicated that physiological variables collectively contribute to kabaddi playing ability.

4. Conclusions

It was concluded that the selected physiological parameters such as breath holding time, systolic and diastolic blood pressure have significant influence over kabaddi playing ability of women kabaddi players. However, resting hear rate was not significantly correlated with Kabaddi playing ability.

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