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Editor

Dr. Shaikh Parvez Aslam Abdullah

Assistant Professor & Head ,

Dept. of English, Lokseva College of Arts & Science,

Aurangabad (M.S.)

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Correlation of Upper and Lower Extremity and Physical Fitness Performance of Intervarsity Kabaddi Players

Gadade Anil Mahadev **Toradmal B.B.** **Mohd.Ataullah M. K. Jagirdar**

Introduction :

Kabaddi is aptly known as the "GAME OF THE MASSES "due to its fame, simplicity, easy to grasp rules, and public demand. The game calls for no complicated equipment what so ever, which makes it a very popular sport in the developing countries. It is basically an out door sport played on clay court, of late the game is being played on synthetic surface indoors with great success. [1]The length of the game is 45 minutes for MEN & Junior BOYS with a 5 minutes break in between for the teams to change sides. The duration of the game is 35 minutes with a 5 minutes break in between for WOMEN, GIRLS, Sub-Junior BOYS and Sub-Junior GIRLS.

Significance of the study:

The findings of this study will be useful to kabaddi coaches and talent hunters as hard empirical facts obtained could form the basis of talent selection for different playing positions in kabaddi. It is also to be noted that not much empirical work has been done on the relationship of physical fitness performance of kabaddi players and their anthropometrical variables. Therefore, training programs should include specific sessions for each anthropometrical variables role.

Procedure :

For the purpose of this study **50 intervarsity kabaddi players of different positions** from various Universities of Maharashtra those were represented or winners of zone level/ intervarsity kabaddi matches held in 2012 were randomly selected.

Collection of Data:

Recording the variables as given below shall consist data in the form of various criterion measures selected for the study. Following anthropometrical measurements were collected from the kabaddi players using standard equipment and techniques.

1. Upper arm length: The subject was made to stand erect with arms hanging down normally with the palm of right hand directed towards thigh. Inferior border of the acromion process and the external superior border of the head of radius were marked. The distance between these two points was measured with the help of measuring tape and the value was taken.

2. Lower arm length: The subject was made to stand with arms hanging down normally. Radial and dactylion were marked on the right hand. The distance between these two points was measured with the help of measuring tape.

3. Upper leg length: The subject was made to stand erect with weight equally distributed on both legs. Trochanterion and tibial lateral of the right leg were marked. The distance between these two points was measured with the help of measuring tape.

4. Lower leg length: The subject was made to stand erect with weight equally distributed on both legs. Tibial of the right leg was marked. The distance between tibial and floor was measured with the help of measuring tape.

Fitness Test

There were several tests available in literature for measuring physical fitness such as Oregon motor fitness test, California Physical performance test, N.S.W.A. Physical performance test, Canadian physical fitness test etc. but for the purpose of the this study AAHPER Youth fitness test was considered appropriate as the test items included, measured all the component of physical fitness. Other major characteristics of selected test were its wide range of application for boys. Further the items included in the test were administratively feasible and could be concluded with standard and even non-standard facilities. The items included in the test based on natural movements, which did not involve special skill or technique.

So keeping the above contention and criteria in mind the AAHPER youth fitness test was selected for the purpose of correlating kabaddi player with their physical fitness performance. The test had the following items:

1) Pull ups
2) Bent knee sit ups (sixty seconds only)
3) 4 X 10 mtr. Shuttle run
4) Standing Broad jump
5) 50 mtr. Dash
6) 600 yards run/ walk

Statistical procedure:

Reiterating the objective of the study we have to point out that we intend to investigate the Correlation ship of anthropometrical variables of kabaddi players with their physical fitness performance. The product moment correlation technique were used.

Analysis ff Data and Discussion of Findings

Table-1 : The correlation between intervarsity kabaddi player's Upper arm length and physical fitness performance.

Standard Deviation	Mean upper arm length	Correlation
1.7404	30.46	-0.249

The table shows a Negative correlation ship between the upper arm length of the kabaddi players **(-0.249)** thus our hypothesis has been rejected. Since we concluded that the upper arm length of kabaddi players is negatively related to the physical fitness performance.

Discussion of finding

The longer the upper arm length provide the mechanical disadvantage while performing the chinning ups and also increases the extra burden on the abdominals in performing the sit-ups. The greater the upper arm length increase the body weight and increase the length of body from the hanging bar which requires the greater efforts for pulling up the body.

Table-2 : The correlation between intervarsity kabaddi player's lower arm length and physical fitness performance.

Standard Deviation	Mean lower arm length	Correlation
1.409	24.88	0.141

The table shows a Positive correlation ship between the lower arm length of the kabaddi players **(0.141)** thus our hypothesis has been accepted. Since we concluded that the lower arm length of kabaddi players is related to the physical fitness performance.

Discussion of findings

Shorter the lower arm length helps to kabaddi player while performing the chin-ups. The shorter the lower arm length is causing of the shorter the distance between the chinning bar and body. The arms muscle may lifts the body up to the chinning bar without using maximum efforts.

Table-3 : The correlation between intervarsity kabaddi player's Upper leg length and physical fitness performance.

Standard Deviation	Mean upper leg length	Correlation
3.592	48.42	0.309

The table shows a Positive correlation ship between the upper leg length of the kabaddi players **(0.309)** thus our hypothesis has been accepted. Since we concluded that the upper leg length of kabaddi players is related to the physical fitness performance.

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Mr. Gadade Anil Mahadev
Research Scholar, Department of Physical Education, JJT University, Jhunjhunu. (Rajasthan)

Toradmal B. B.
Research Scholar, Department of Physical Education, JJT University, Jhunjhunu. (Rajasthan)

Dr. Mohd. Ataullah M. K. Jagirdar
H.O.D., Physical Education, Milliya Arts & Science College, Beed. (M.S.)