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## **Correlated study of weight and liner measurements with explosive leg strength of Kabaddi players**

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### **Abstract**

The purpose of the study is to correlate weight and linear measurements with explosive leg strength of Kabaddi players. A sample of 30 senior male Kabaddi players of Haryana the ranging of 18 to 22 years were selected for the study. Convinced cum random sampling method was used to select the sample. The explosive leg strength was measured with the standing broad jump. For analysis and interpretation of data, the investigator was used Pearson Product Moment Correlation statistical techniques with the help of SSPSS analytic software. There were significant relationship found between weight and linear measurement with explosive leg strength of Kabaddi players accept foot length.

**Keywords:** Anthropometry, explosive strength, body weight, height

### **Introduction**

Human being is a biological fact. This is a universal fact in every sports and games where events selectively reflect concomitant genetic and environmental influence on physique. Olympic Games provide an anthropological microcosm which permits human biologists to delineate prototypes with specific structural and functional capacities to excel at highly defined, ritualistic, physical performance tasks of combination of tasks in organizing sports. The world of games and sport has crossed many milestones, as a result of different achievements, in general, and their application in the field of sports and games. Kabaddi is one of the most popular game in India especially in north India. It is a game played by both males and females across many age groups and levels of participation. Scientific investigation into performance of sportsmen has been playing an increasingly important role in the training of sportspersons, in the scientific way, to attain excellence in performance, in different spheres of sports. Various research studies conducted by experts, in Physical Education and sports, have emphasized the importance of investigating the specific structures correlated with various sports activities for the selection and development of talent in sports for better performance, at different levels of sports competitions. Anthropometry is the interface between anatomy and movement. It is the application of a series of measurements made on the body and from these we can use the data that we gather directly or perform calculations using the data to produce various indices and body composition predictions and to measure and describe different body physique. Kabaddi is a game in which two teams fight each others. Two teams try to score points against one another. Raid and catch in Kabaddi is both an art and a science. Kabaddi raid and catch the art form because it involves finely tuned hand-eye leg-eye coordination rather than gross motor skills. The correlation also been done on selected Kin-anthropometric variables and sports performance of different athletic events, games and sports. They have emphasized that top level performance, in particular sports and game activity, demands particular size, shape and proportions of the body. Performance improvement are mainly due to application of different sport sciences, new techniques, methods of training, fitness techniques, availability of appropriate body structures, and modern equipments and facilities. Time has come to explore the possible body structures and motor fitness related to specific sports activity and develops them for particular level of performance. In this way anthropometry and physical fitness components plays an important role in the selection and training of sportspersons. Physical fitness is the ability to perform activities that require muscular coordination such as walking, running, playing and manipulating instrument and

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machinery. Mathews (1973) defined general motor fitness as the immediate capacity of an individual to perform in many varied stunts or sports event. Identification of requirements that increase performance in a specific sports could aid the coach, trainer, and/or athlete in creating a proper training program for that sport and games. Satyanarayana (2002) [6], the aim of the study was to determine the effect of sand training on selective motor abilities of junior volleyball players. Investigation was done on 24 junior players. Subjects were divided in two groups each comprising of 12 subjects. One was experimental group and other was control group. Standing vertical jump, standing broad jump, approach and jump reach, court speed test, co-ordination test (92 meters agility) and 30 meters sprint test were administered at the beginning and end of four weeks sand and general training programme. On the basis of results it was found that sand training on experimental group improved jumping abilities with significant 't' value 2.09, 2.83 and 2.50 in standing vertical jump, standing broad jump and approach and jump reach respectively but significant improvement is not observed in speed and co-ordination domination abilities where 't' value are 1.57, 1.27 and 1.94 in co-ordination test (92 meter agility) court speed test and 30 meters sprint respectively. A non significant in all the test performances was also seen in control group.

**Methods**

**Sample**

A sample of 30 Kabaddi players were conceived and randomly selected from the different part of Haryana. The investigator approached the coaches and trainers of the team for approval to select players from a regularly scheduled practice time.

After approval, the investigator collected the data related to anthropometric measurement and explosive leg strength.

**Tools Used**

The following standardized tools were used for data collection of study.

Standing broad jump- Used to measure the Explosive leg strength.

Steel tape- Used to measure the different measurements.

Weight Machine- Used to measure weight of players.

The following standardized anthropometric measurements were used by Weiner and Lourie (1969) method for data collection.

1. Weight (kgs): Weight is the name given to the force on a weighing machine due to gravity.
2. Height: Height was measured by stadiometer. The height rule is taped vertically to the hard flat platform.
3. Leg Length: The vertical distance between acromio and radial.
4. Leg Length: The straight distance between head of the femur and lateral malleolus of fibula.

**Statistical Analysis**

To determine whether relationship among the research variables exists or not, Pearson Product correlation method was applied. The data was computed on the spss Statistical Package for the Social Sciences.

**Results of the Study**

**Table 1:** Correlations of Weight and Liner measurements to Explosive leg strength of Boxers. (N = 30)

Sr. No.	Variables correlated with leg strength	Co-efficient of correlation
1	Body Weight	.681 **
2	Standing Height	.618**
3	Sitting Height	.671 **
4	Trunk Length	.503**
5	Total Leg Length	.747**
6	Upper Leg Length	.763**
7	Lower Leg Length	.771**
9	Thigh Length	.707**
10	Lower Leg Length	.571**
11	Hand Length	.346*
12	Hand Breath	.324*
13	Foot Length	.261

\*\* Correlation is significant at the 0.01 and 0.05 level.

Table-1 showed that the correlations of body weight (.681), standing height (.618), sitting height (.671), trunk length (.503), total leg length (.747), upper leg length (.763), thigh length (.707), Lower Leg Length (.571) with explosive leg strength are highly positive and significant at both .01 and 0.5 level of significance. Hand length (.346) hand breath (.324) and (.261) also positive correlation but not significant with explosive leg strength at .01 and 0.5 level of significant. It implies that the body weight, standing height, sitting height, trunk length, total leg length, upper leg length, leg length and thigh length significantly contributed to explosive leg strength of Kabaddi players.

**Conclusion:** As per above interpretation the researcher showed that the anthropometric variables i.e. body weight, standing height, sitting height, trunk length, total leg length, upper leg length, Fore Leg Length, leg length, thigh length, Lower Leg Length are important for performance of Kabaddi

players, because explosive leg strength are improve the performance of Kabaddi players and explosive leg strength and above Kinanthropometric variable are direct and positive correlation.

**References**

1. Agbonjimi AP. Lower Limb Anthropometrics characteristics and Endurance running Performance Time in young Male Adults Nigeria Association of Sport science and Medicine (NASSM). 1995; 2:16-20.
2. Carter JE. Morphological factors limiting human performance. In: DH Clarke, Eckert HM, editors. Limits of Human Performance. Champaign (IL): Human Kinetics, American Academy of Physical Education Papers, 1985, 1-7.
3. Fox and Matthew. International Society for the Advancement of Kin anthropometry (ISAK) (2003) International Standards for Anthropometric Assessment,

- 1981.
4. Hudson JL. A biomechanical analysis by skill level of free throw shooting in basketball. In: Biomechanics in Sports (edited by J. Terauds and J. Barham) Del Mar; Academic Publishers, 1982, 95-102.
  5. Leone M, Lariviere G, Comtois AS. discriminate analysis of anthropometric and bio-motor variables among elite adolescent female athletes in four sports. J Sports Sci. 2002; 20(6):443-9.
  6. Satayanarian M, Kaushal BC, Singh B, Singh S, Singh J, Singh H, in Journal of Sports and Sports Sciences. 2002; 25(3):42-46.
  7. Okunneye RO, Osman IO. Intersports Muscular Endurance in Lagos State University (LASU) Male Athlete. JORHASS. 1996; 1(1):37-40.
  8. Oranugo, Oranugo JBC. Human performance factors in achieving Excellence in Sports. In Udoh, C.O. Sobi, A.S & Ajala, J.A (eds) Human performance Factors in achieving Excellence in Sports. Monograph series no. 2 Ibadan; Moba Printers, 1995.
  9. Reilly *et al.* Reilly I. Racket Sport. In Reilly, I., Secher N., Snell B. and William C. (eds) Physiology of Sports, London; E.F.N. sport, 1997.
  10. Ross WD, Wilson NC. A stratagem for proportional growth assessment. Acta Paed Bel. 1974; 28:169-82.