Journal of Advances and Scholarly Researches in Allied Education
Vol. 15, Issue No. 11, November-2018, ISSN 2230-7540

Study on Anthropometric Characteristics Contributing to Success in Cricket

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Abstract – The study is to camp are the Anthropometrics characteristics, body synthesis and physical fitness parameters of state level cricketers and national level cricketers. The essentialness was set as 0.05 level and classified't' esteem is 1.686. Anthropometrics characteristics was estimated by leading test which appears there is critical distinction in standing tallness (2.036>1.686), weight (2.024>1.686), leg length (2.058>1.686), a careful distance (2.026>1686), calf girths (2.024>1.686), upper arm sizes (2.045>1.686), thigh sizes (2.028>1.686). Body synthesis is estimated and it additionally shows critical contrast in triceps skin fold thickness (2.024>1.686). Biceps skinfold thickness (2.030>1.686), sub-scapula skin fold thickness (2.024>1.686). Physical fitness parameter speed, quality, nimbleness and adaptability was tried by directing 50 meter run (2.028>1.686), quality (2.032>1.686), spryness (2.026>1.686), adaptability (2.032>1.686) By leading study on 40 subjects i.e 20 state level cricketers and 20 national level cricketers it is seen that there is huge contrast in every one of the 14 variables. National level cricketers have better anthropometrics characteristics and physical fitness level than state level cricketers. Thus anthropometrics characteristics additionally upgrade performance level in cricket.

Keywords: Anthropometrics, Characteristics, Cricketer, Players

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INTRODUCTION

Sport is as old as human society and it has achieved a universal fallowing in the modern times. It has enjoyed a popularity, which outstrips any other form of social activity. It has become an integral part of educational process. Many participate in sports activities for the fun or for health, strength and fitness. It is taking the shape of profession, to some with high skills with ample financial benefits linked with high degree of popularity. The promotion of Sports and Physical education is no longer a matter of dispute. Their importance has been recognized at international level by all the countries of the world. Today, sports and physical education are considered as international disciplines because they develop international understanding and universal brotherhood. In the present politically conflicting times, the sports are also considered as one of the major adhesive forces for developing world peace.

Sports hold a prominent place in modern life. Millions of people participate in sport, watch and hear about them and spend billions, of dollars on sports related activities and equipments. This has led to the competitive element in sports, as now sportsmen participate to win and achieve laurels for them as well as for their country. In today's ever advancing and professionally competitiveness best performance in sports can be made only through a systematic planned, executed and controlled training system, base on scientific system of sports training. Sports in today's life plays very important role in bringing about physical, mental and social growth of nations. The sports scientists and the physiologists have been of the view that human capacity of performances among athletes had its limits in the method of standards of efficiency. But, this belief has been proved false and the barriers of performance have been surpassed by the athletes as result of continued improvement in the techniques, method of training andcoaching.

Physical fitness has been of great significance in the lives of human beings from times immemorial. In the pre historic times, physical fineness was the key element for the survival of a human being. People during those times were confronted with hostile environment and only fit individuals could survive. Hence survival of the fittest was the dictum. Even the civilization of Sparta, Athens and Rome in the history of the world has stressed physical fitness or physical training as an important objective of the educational programmed. Physical fitness is a matter of fundamental importance to individual well-being and to the progress and security of nation. It is the basis for all other forms of excellence. With increased mechanization there has been a corresponding decrease in the number of tasks that require an expenditure of energy, sufficient vigorous exercise are not done to develop and maintain adequate level of fitness. Various

individual depends upon various form of exercise to attain an acceptable level of physicalfitness.

In order for one to be considered physically fit, the heart, lungs, and muscles have to perform at a certain level for the individual to continue feeling capable of performing an activity.

At the same time, since what humans do with their bodies directly affects the state of mind, fitness influences to some degree qualities such as mental alertness and emotional expression. Physical fitness is often divided into the following categories in order for people to be able examine its components or parts. Particularly, physical fitness is judged by:

- **Cardiovascular perseverance:** This is the capacity of the body to convey oxygen and supplements to tissues and to expel burns through over supported timeframes.

- **Muscular quality and perseverance:** Strength manages the capacity of the muscle to apply power for a limited timeframe period, while continuance is the capacity of a muscle, or gathering of muscles, to support rehashed constrictions or to keep on applying power against an idle item.

- **Flexibility:** This means the capacity to move joints and use muscles through their full scope of movement.

- **Body composition:** Considered as one of the segments of fitness, composition alludes to the body as far as fit mass (muscle, bone, crucial tissue, and organs) and fat mass. As a matter of fact, the ideal proportion of fat to lean mass means that fitness. Playing out the correct arrangement of activities can assist individuals with getting free off muscle to fat ratio and increment or keep up bulk.

As far as the aggressive parts of sports likewise, there has, throughout the years, been an ocean change, regarding the way where they are played, drilled and saw at the national and universal levels. The measures and levels of perseverance, fitness and performance showed by sportspersons have improved exponentially; the quantity of focused sports disciplines has expanded with the consideration of numerous games indigenous to different locales of the world and, with the huge development and refinement in the circles of media and interchanges. The perceivability of focused sports has developed tremendously. Couple with these patterns, there has been expanding accentuation on the formation of excellent foundation and work of complex innovation in the lead of sports occasions, with a lot of consideration being given to the improvement of cutting edge logical and specialized emotionally supportive networks for sportspersons. With this, sports as a zone of action, has procured immense new measurements, with multi-faceted ramifications of a financial nature and business potential too. Progressively, facilitating of global occasions is likewise observed by nations and urban communities as a methods for situating and show packaging themselves in the worldwide field as the travel industry, business and speculation goals; essentially, numerous nations/urban communities are utilizing these occasions as a chance to rejuvenate the more unfortunate territories of the urban areas. The remarkable development of satellite TV has not just brought universal sports occasions into the rooms of billions of watchers over the world, however in the process opened the entryways for enormous income age through clearance of broadcasting rights, publicizing, and so forth. Similarly critically, these advancements significantly affect the discernments and articulations of national goals and pride, mass interest, and uniting networks.

DEFINITION AND EXPLANATION OF THE TERMS

Anthropometric Measurements:

- An anthropometric measurement is defined as dimensions of the structure of the human body taken at specific sites to give measures of length, girth and width.

Standing height:

- It is defined as the maximum height of the individual when standing erect on a horizontal surface with his head and face in Frankfurt horizontal plane or it is the straight height of the subject (bare-footed) up to the pointvertex.

Body weight:

- Weight of the nude human body with empty bowels is known as body weight.

Leg length:

- The leg length has been measured from the greater trochanter (head of the femur) to the outside edge of the center of thefoot

Upper leg length:

- It is measured from the Iliacspinale to Tibiae.

Lower leg length:

- It is measured from the Tibiae to thefloor.

Arm length:

- The arm length was taken from the acromion process above the shoulder joint to the tip of the middlefinger.

Upper arm length:

- It is measured at the upper edge of the head of acromiale to the tip of the top of the point ofradial.

Lower arm length:

- It is measured at the upper edge of the head of the radius to the tip of the middle finger.

REVIEW OF LITERATURE

Ahsan A. at al (2015), evaluated the particular physical fitness test battery for bowlers, this paper intend to develop the Specific Physical Fitness Test of Bowlers in Cricket. A 16 experimental test things indicated to quantify Speed, Strength, Endurance, Agility, Adaptability, coordination and Balance were Administered to 25 Players of North-Zone level intervarsity cricket players. The age went from between 18 to 25 years old.

Deba S. (2015), had read an intriguing angle for human beguilement and a social wonder at incredible greatness. Logical examination concerning the performance of sportsman has been assuming an undeniably significant job to achieve greatness of performance in various sports. Presently the sportsman has had the option to give remarkable performance in light of the fact that of association of new logically validated training strategies and methods for execution of sports exercise, for example, sports procedures and strategies. The motivation behind the study was to explore the distinction on body fragments and BMI between cricket players and hockey players.

Sathsih A. (2014), had examined Anthropometric variables among bury college level ladies cricket players. One hundred and fifty ladies collegecricket Players were chosen from ten colleges (Veer Narmod South Gujarat University, Rajasthan University, Andhra University, Kakatiya University, Annamalai University, Thirurvaluvar University, Pune University, Pondicherry University, Kerala University and Mumbai University) taken an interest in south west bury college ladies cricket competition composed by Pondicherry University, Pondicherry during the year 2011-2012.

Rajendra (2013), discovered the relationship of the chose anthropometric variables adding to achievement in cricket viz; batting, bowling and wicket keeping. Thirty male cricket players who spoke to their between region in the cricket rivalry were arbitrarily chosen for the study. They were additionally ordered in three equivalent gatherings according to their playing position for example 10-batsmen, 10 bowlers and 10 wicket attendants.

Kevin T. et al. (2012), directed a study to decide if contrasts existed for anthropometric and performance characteristics among provincial and national selection in elite UK junior Rugby League players, and to recognize variables that separated between these selection levels. Provincial delegate (n = 1172) chose junior players (matured 13–16 years) attempted an anthropometric and fitness testing battery with players split by selection level (i.e., national, provincial).

OBJECTIVES OF THE STUDY

1. To discover the significant contrast of anthropometric characteristics among cricketers and non-cricketers.
2. To discover the significant contrast of body composition among cricketers and non-cricketers.
3. To discover the significant contrast of physical fitness among cricketers and non-cricketers.
4. To discover the significant contrast of body composition among cricketers of local, state and national level.

RESEARCH METHODOLOGY

This section comprises of strategy embraced with selection of subjects, selection of variables, selection of tests, direction to the subjects, assortment of information, organization of the tests and statistical technique utilized for dissecting the information are examined.

SELECTION OF SUBJECTS

The motivation behind the study was to think about the anthropometric characteristics, body composition and physical fitness among cricketers and non-cricketers. For this reason, 330 male subjects containing 165 cricketers and 165 non cricketers were chosen. The reason for this study was clarified to the subjects by clarification so as to discover that there was no uncertainty among the subjects with respect to the endeavors, which they needed to place in the fruitful finish of examination.

SELECTION OF VARIABLES

A practicality examination concerning which of the variables could be taken up for the examination, keeping in see the accessibility of gear, agreeableness to the subjects and the genuine time that could be given for tests and to keep the whole study unitary and coordinated was made in

discussion with specialists. In light of the over criteria's, the accompanying anthropometric characteristics, body composition and physical fitness parameters were chosen.

SELECTION OF TESTS

As per the available literature, the following standardized tests were used to collect relevant data for the purpose of the study.

Table 1 Anthropometric Characteristics:

Variables	Test Items	Unit of Measurement
Standing Height	Stadiometer	in centimeters
Weight	Weighing machine	in kilogram
Leg Length	Flexible steel tape	in centimeters
Upper Leg Length	Flexible steel tape	in centimeters
Lower Leg Length	Flexible steel tape	in centimeters
Arm Length	Flexible steel tape	in centimeters
Upper Arm Length	Flexible steel tape	in centimeters
Lower Arm Length	Flexible steel tape	in centimeters
Hip Width	Sliding calipers	in centimeters
Shoulder Width	Sliding calipers	in centimeters
Chest Width	Sliding calipers	in centimeters
Calf Girth	Flexible steel tapes	in centimeters
Thigh Girth	Flexible steel tapes	in centimeters
Chest Girth	Flexible steel tapes	in centimeters
Upper Arm Girth	Flexible steel tapes	in centimeters
Body Composition	Skinfold calipers	in millimeters

COLLECTION OF DATA

For the purpose of the study, the necessary data was collected by administering various tests for the chosen variables.

1. The mean of standing tallness of cricketer and non-cricketer was 174.5939 and 172.8667 separately, while the standard deviation (SD) of standing stature of cricketer and non-cricketer was 4.8312 and 5.8305 individually. The basic estimation of t at 95% likelihood level is a lot of lower (1.645) than the watched estimation of t (2.930*). The information suggests that the contrasts among cricketer and non-cricketer as to standing stature are significant.

2. The mean of weigh of cricketer and non-cricketer was 71.6545 and 70.2848 separately, though the standard deviation (SD) of weigh of cricketer and noncricketer was 3.2622 and 5.2100 individually. The basic estimation of t at 95% likelihood level is a lot of lower (1.645) than the watched estimation of t (2.862*). The information suggests that the contrasts among cricketer and non-cricketer as to weigh are significant.

3. The mean of weigh of cricketer and non-cricketer was 71.6545 and 70.2848 separately, though the standard deviation (SD) of weigh of cricketer and noncricketer was 3.2622 and 5.2100 individually. The basic estimation of t at 95% likelihood level is a lot of lower (1.645) than the watched estimation of t (2.862*). The information suggests that the contrasts among cricketer and non-cricketer with respect to weigh are significant.

4. The mean of weigh of cricketer and non-cricketer was 71.6545 and 70.2848 separately, while the standard deviation (SD) of weigh of cricketer and noncricketer was 3.2622 and 5.2100 individually. The basic estimation of t at 95% likelihood level is a lot of lower (1.645) than the watched estimation of t (2.862*). The information suggests that the contrasts among cricketer and non-cricketer with respect to weigh are significant.

5. The mean of weigh of cricketer and non-cricketer was 71.6545 and 70.2848 separately, while the standard deviation (SD) of weigh of cricketer and noncricketer was 3.2622 and 5.2100 individually. The basic estimation of t at 95% likelihood level is a lot of lower (1.645) than the watched estimation of t (2.862*). The information suggests that the contrasts among cricketer and non-cricketer with respect to weigh are significant.

CONCLUSION

In this paper, the profoundly created degrees of handling in the cutting edge times require a player to have solid shoulders and arms to make direct hits at the stumps. The cutting edge player is more slender, more grounded and undeniably more athletic. For cricket fans there is nothing to coordinate the important challenges and fervor produced by the game's unpretentious moves in play. Then again, immense swathes of the total populace discover cricket the darkest and bafflingly invulnerable of sports. The changing substance of cricket endeavors to represent this Catch. Generally, cricket has been seen as a moderately gentle game from a physiological perspective. The discontinuous idea of the game with its long rest interims gives a lot of recuperation time between any short spells of higher power action.

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