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Comparative study on anthropometric variables of spin and fast bowlers, above 16 years and below 22 years cricket players of Goa

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Abstract

The purpose of the present study was to compare the anthropometrical variables of spin bowlers and Fast bowlers in cricket of Goa state. The study was administered on 40 Cricket players in the age group 17-22 years who participated in the 2012-13 BCCI in various age category tournaments. The anthropometric measurement which was used in this study is standing height, arm length, leg length, thigh girth and body composition from biceps, triceps, sub scapular and suprailiac crest. To find out the significance difference t-test was used. The level of significance was chosen as 0.05 levels. Result of this study reveal that there was significant difference exist between the standing height (2.635), arm length (3.739), leg length (4.024), body composition (2.285) and there is no significant difference exist between the thigh girth (1.603) of spin bowlers and medium pace bowlers in cricket as the tabulated 't' (2.021).

Keywords: Anthropometrical, Body composition, Cricket Players, BCCI

Introduction

Cricket is a national sport that connects the people of India in a unique way. Cricket Governed and controlled in Goa by Goa Cricket Association, which is a full member of Board of Control for Cricket in India. In the early years cricket was considered as a battle between bat and ball and obviously fitness and type of Body was not given due importance, With the introduction of One day cricket recently, the game has gone through major changes and the physical demand made on cricketers body have also increased dramatically. Depending upon the version of the game played and role played by the player in the team. (Simpson, Bob.1996). Structure and functions are two inseparable entities with respect to human performance in elite competitive Sports. When all functional factors such as Anthropometrical, Morphological, Physiological, Psychological and Motor fitness variables are equal, structure to a large extent determines the degree of success of an adult elite athlete Nadgir, Anand 1986) ^[1]



Anthropometry in Cricket

Anthropometry is the study of the measurement of the human body in terms of the dimensions of bone, muscle, and adipose (fat) tissue. There are numerous factors which are responsible for

the performance of a sportsman. The physique and body composition, including the size shape and form are known to play a significant role in this regard. At present, sportsman for superior performance in any sports is selected on the basis of physical structure and body size.

structural measurement include anthropometric measurement which consist of objective measurement of structures such as height, weight, width, depth and the circumference of the various part of the body. The anthropometric measurements most commonly used for assessing nutritional status are height, body weight, mid-arm circumference and triceps skin fold thickness (Blackburn *et al.*, 1977). Human beings differ in many ways in their external body form. The variations and the process of modification in physical outlook of humans and the athletes engaged in different sports is an interesting aspect which has tempted the scientists to analyses and classify: them. Athletic populations are characterized by tremendous variability in their morphological and genetically make- up (Malina)

Purpose of the Study

The main purpose of the present study was to describe the Anthropometrical variable which separates Spin and Fast Bowlers of Goa state, who actively participating in state and BCCI Tournaments. Since the term Anthropometry is a broad

concept, Specific Hypothesis involving some of the Anthropometrical Profile was formulated

- Which Anthropometrical Variables contribute most in discriminating Spin Bowler with that of Fast Bowler in cricketers of Goa state who participated in age category tournament of BCCI??

Methodology – Subjects,

To subjects for the present investigation were 40 state cricket players who represented Goa state team in BCCI age category tournaments. The Subjects were N=20 Spin Bowlers and N=20 were Fast Bowlers. Their age was above 16 and below 22 years of age. All necessary permission was taken from the Goa Cricket Association President, Secretary and respective coaches of the teams. The entire test were administered and recorded at BITS, Pilani K.K.Birla Goa campus Gym. The Anthropometric, Body Composition measures were obtained during each testing session. The measurements were all recorded in Metric system

Variables and Criterion Measures: Following anthropometric variables were selected in this study, Measurement of upper extremity and lower extremity parts of the body were measured by anthropometric kit.

Table 1: List of Variables tested and recorded

Sr. No	Variables	Tools	Unit
01	Standing and sitting length	Steadiometer	CM
02	Arm length, leg length and Thigh girth	Gulic tape	CM
03	Body composition (Biceps, triceps, sub scapular and suprailiac crest)	Skin fold caliper	MM

Research Design: For this study static group design was used. In which 15 subjects were in each groups.

Statistical Procedure and Treatment

A descriptive measure was given for all the variables related to different levels of participants of spin bowlers and medium pace bowlers of cricket separately. Significant of the mean difference on all anthropometrical variables were obtained by retaining T-test to find out significant difference and were made according to the requirement of the present study as for statistical technique, simple technique like mean and S.D. were used to find not the nature of difference in the variables as manifested in the response of crickets players.

The investigator proceeded to fulfill the different objectives of the study by analyzing the data with the help of simple techniques like Mean and SD and the significance of difference in the mean scores of all the variables such as anthropometrical measurements were determined between the

spin bowlers and medium pace bowlers of cricket and on the total samples retaining the t-test of significance., First of all the investigator has combined all the Spin bowlers and Fast bowlers of cricket. This was done according to the equivalent status of players as inter- state level participation were put in the same status and categories. Then tabulated the raw data and discussion was made of pertaining to anthropometrical variables between the Spin bowlers and Fast bowlers of cricket which were formed out of state level participation have been discussed. Here in this section comparison was made between the Spin bowlers and Fast bowlers of cricket.

Results

The value of calculated t-test was compared with the tabulated significant value at .05 level of confidence with 99 degree of freedom. The details for comparative mean value and SD values of anthropometrical variables were tabulated and presented below:

Table 2: Result of the study Mean, SD, and T-score of Spin and fast bowlers

Sr. no	Variables	SPIN BOWLERS			FAST BOWLERS			T-Ratio
		MEAN	SD	SE	MEAN	SD	SE	
01	Standing Length	163.81	4.22	0.9	167.4	4.3	1.0	2.635
02	Arm Length	68.81	3.09	0.7	72.7	3.5	0.8	3.739
03	Leg Length	88.81	3.21	0.7	92.1	3.2	0.7	4.024
04	Thigh Length	53.14	2.09	0.5	54.2	1.9	0.4	1.603
05	Body Composition	21.55	2.04	0.5	20.3	1.3	0.3	2.285

Level of significance 0.05, tabulated 't' (2.021)

Table 1 clearly indicate that there is significant difference in standing height, arm length, leg length, body composition and

no significant difference in thigh girth of Spin bowlers and Fast bowlers of cricket at 0.05 level of significance.

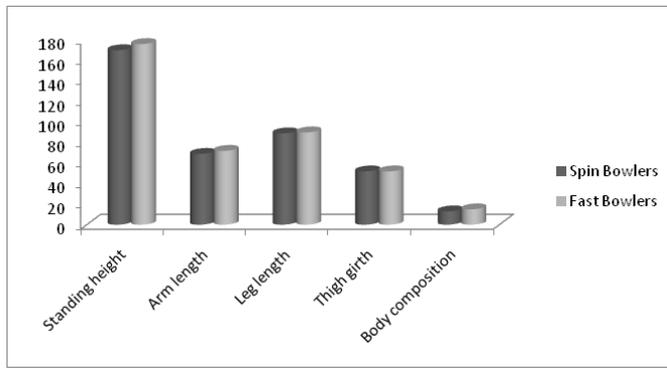


Fig 1: showing the difference among Spin and fast bowler

Discussion

1. The author found that there was difference in Spin and Fast Bowlers state level cricketers of Goa. Most of the game related skills, anthropometrical parameters change during the developmental years of young sportsman.
2. The anthropometric variables of standing height, arm length, leg length, and body composition are significant difference; these changes can be due to the physiological changes a young sportsman under goes during his or her development year (8-18 years).
3. The author statistically found that no significant in thigh girth that has been analyzed on the Spin bowlers and Fast bowlers of cricket at 0.05 level of significance. This changes can be because of level of training is done as player participates in different age category tournaments

Conclusion

The findings reveal that significant difference was found statistically for the Spin bowlers and Fast bowlers of cricket. The anthropometric variables of standing height, arm length, leg length, body composition are significant difference and no significant in thigh girth that has been analyzed on the Spin bowlers and Fast bowlers of cricket at 0.05 level of significance.

- Significant difference was found in Standing Height of Spin bowlers and Fast bowlers of Cricket.
- Significant difference was found in Arm Length of Spin bowlers and Fast bowlers of Cricket.
- Significant difference was found in Leg Length of Spin bowlers and Fast bowlers of Cricket.
- No Significant difference was found in Thigh Girth of Spin bowlers and Fast bowlers of Cricket.
- Significant difference was found in Body Composition of Spin bowlers and Fast bowlers of Cricket.

Recommendation for Future Research work

Extensive research have been undertaken in several sports disciplines to identify anthropometrical characteristics of young cricket players which enables coaches to identify promising talent in their respective sports disciplines. However, no research is traceable which identify Anthropometrical and other characteristics of young cricketers. Therefore it is recommended to undertake research which might identify the anthropometrical, morphological, physiological, psychological profiles of young cricketers from normal population or other sporting population.

- In the present study sample size of young cricketers was very small. Therefore, it is recommended to replicate such an investigation with larger sample size.
- It is recommended to investigate growth pattern of young crickets with either longitudinal or mixed longitudinal or cross section study.

- Within each sports disciplines the demands placed on various specialists differs. Therefore Investigation of morphological, physiological and psychological profiles of cricketers specializing in bowling, batting, wicket keeping is recommended.
- The present investigation involved cricketers at state level. The morphological profile at national and international level may be accentuated for various reasons. Therefore an investigation involving cricketers of national and international repute may be undertaken.

Recommendation for Coaches and Administrators

- Therefore it is recommended that either training regime be made demanding or select candidates with suitable body types.
- Based on the research findings involving young children in sports, identify talented cricketers at early age and coach them right.
- It is recommended that coaches based on their knowledge of anthropometrical, morphological and physiological profile required for various departments of the game of cricket.

References

1. Carter JEL. Somatotype characteristics of champion athletes. In Academia (Eds), Anthropological congress dedicated to Alies Hrdliicka 1971, 241-252.
2. Amrithashish Bagchi. Investigation of anterior deltoid and posterior deltoid during underarm, side arm throw in cricket. International conference 2015 proceedings LNIPE Publications, 2015.
3. Chandu L. a study of Morphological and Motor Fitness of Junior and senior cricket players of Goa- MPed Dissertation, 2010.
4. Chandu L. a comparative study on Physical fitness variables of Bowlers and Batsman of Goa U-22 state cricket team, International Conference on Health fitness wellness 2015, Conference Proceedings LNIPE Gwalior, 2015.
5. Chandu L. a study of Morphological characteristics of Junior and senior cricket Players of Goa, International conference 2015, Proceedings LNIPE Gwalior, 2015.
6. Chandu L. A Comparative study On Motor Fitness variables among Bowler, Batsman, and Wicket keeper of Elite Cricket Players of Goa" International Multi-Disciplinary Research Journal. Golden Research Thoughts- 2015, 5(6) / Dec 2015-ISSN N0: 22315063
7. Chandu L. "Anthropometric Study of Goa U-19 State Cricket team" Academia sports scholar journal, 2015, 4(12)/Dec 2015. ISSN N0: 2277-3665
8. Chandu L. A study of Biomechanical and Anthropometric variables of off spin Bowler of Goa International Journal of Physical Education, sports and Health: 2015, 2016; 3(1):01-03. P. ISSN: 2394-1685, E.ISSN:2394-1693
9. Diwakar LA. Kinanthropometrical Study of elite Nepalese National Cricketers1 Kathmandu Publications, 2003.
10. Malina RM. Maturational consideration in elite young athletes. In J.A.P. Day (Ed.), the 1984 Olympic Scientific Congress Proceedings Volume 1: Perspectives in Kinanthropometry Champaign, IL: Human Kinetics. 1986, 29-43.
11. Nadgir A. Morphological differences between young male gymnasts, young non-gymnasts, and adult elite gymnasts. Eugene, OR: Microform publications, 1986.