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ANALYSIS OF SELECTED ANTHROPOMETRIC MEASUREMENTS AMONG THROWERS AND JUMPERS OF WESTERN RAJASTHAN

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ABSTRACT

Athletic sports comprise various competitive athletic contests based on running, jumping, and throwing. Each sport requires specific physique or morphological features which plays a major, arguably critical role in competition success. Present Study was conducted on 60 Atheletes by taking their skinfold measurement (Triceps, Chest, Abdoman & Calf), biceps & calf girth. Throwers shown highly significant value in most of the parameters except calf girth. The Jumpers have greater calf girths than the throwers. The study may helpful to find out relationship between body structure and performance level.

Keywords: Triceps, chest, calf girth, biceps, skinfold

INTRODUCTION

An athlete possesses the natural or acquired traits, such as strength, agility, and endurance that are necessary for physical exercise or sports, especially those performed in competitive contexts. Specific physique is must for success in specific sport. The size, shape and proportions of athletes are important considerations in player performance and better the performance more critical the relationship. [1] Elite and world class athletes have different physiques than individuals in the non-athletic population. [3]

To evaluate these physical abilities, the anthropometric measurements are often used. Sodhi noticed in his study that the athletes who were very lean but heavy because of well-developed musculature were superior in performance in certain competitive sports such as football, weightlifters and shot put. [2]

The present study is therefore aimed at evaluating the anthropometric measurements of throwers and jumpers from Western Rajasthan, and eventual differences in regard to their specific event.

MATERIAL AND METHOD

The present study was conducted at the department of anatomy, Dr. S. N. Medical College & associated group of hospitals, Jodhpur (Rajasthan), to determine the anthropometric measurements of university level athletes of Western Rajasthan. The data were collected from M.P.Ed. College, Physical Education department of Jai Narayan Vyas University, Jodhpur (Raj.). A total of 66 male subjects aged of 20-30 year included in this study. The study includes 33 runners and 33 throwers. four skin fold were taken at the following sites by using skin fold caliper:

Triceps - on the back of arm.

Chest - the juxta-nipple skin fold site, between the axilla and nipple as high as possible on the anterior axillary fold.

Abdomen- 5 cm adjacent to the umbilicus (belly-button), to the right side.

Calf - a vertical skin fold on the medial side of the leg, at the
level of maximum girth of the calf.

Girth (cm) - taken with the help of measuring tape.

Biceps -2 inches below the armpit.

Calf - 2 inches below the bottom of the knee cap.

RESULT & DISCUSSION

Anthropometric parameters are an essential part of the evaluation and selection of sportsperson for diverse field of sports therefore the present study was conducted on 66 athletes of 20 – 30 age group including 33 runners & 33 throwers for following anthropometric parameters:

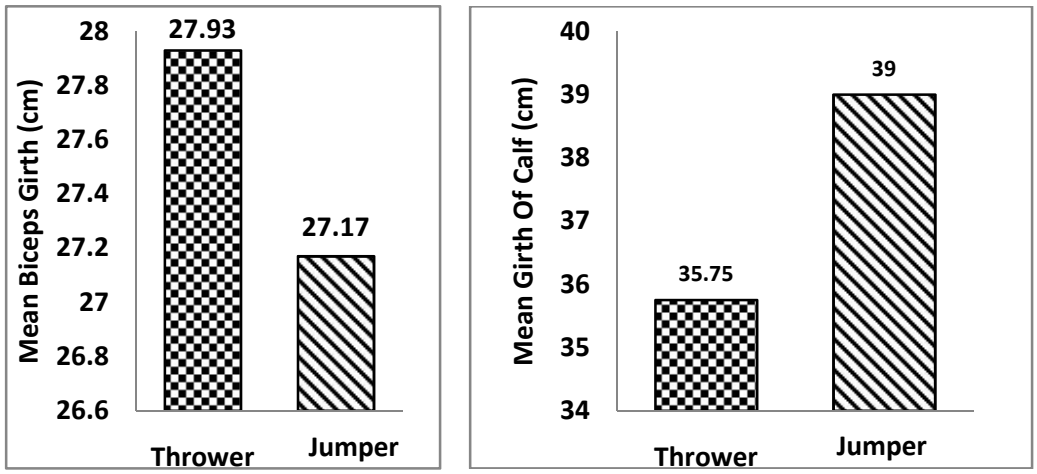
1. **Biceps & Calf girth (cm) of subjects**

Mean biceps of Jumper was 27.17±1.50, which shows non- significant relationship with thrower (p=.0831; t=1.761) (Table no.-1) Mean calf girth of Jumper was 39.00±1.96, which shows highly significant relation with thrower (p<.0001; t = 4.572) & Runner. (p<.0001; t=6.561)

Table-1

Group	Girth of Biceps (cm) Mean ± S.D.	Girth of Calf (cm) Mean ± S.D.
Thrower	27.93 ± 1.95	35.75 ± 3.57
Jumper	27.17 ± 1.50	39.00 ± 1.96
p value	(0.0831) NS	(<.0001) HS
t value	1.761	4.572

Bar chart showing Biceps & Calf girth (cm) of subject

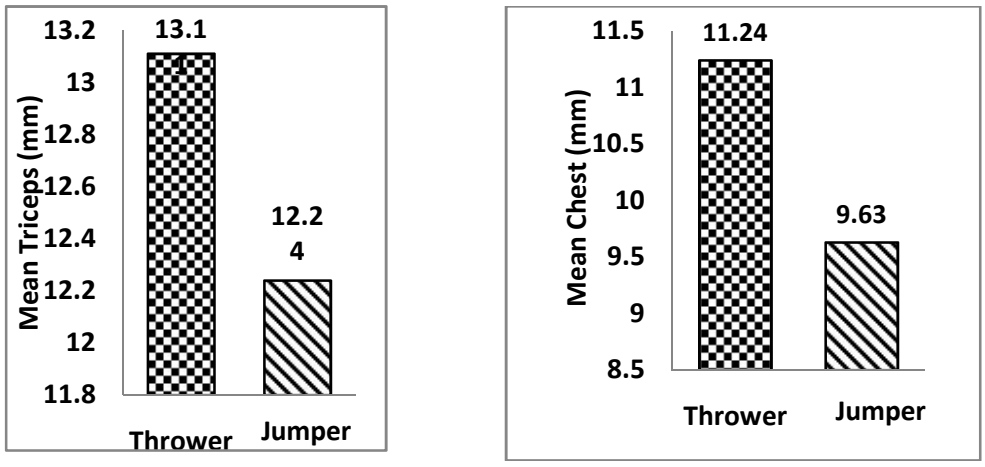


2. Mean skinfold thickness (mm) at Triceps (TRI) & Chest fold (CHE) of subjects

The mean triceps skin fold of Jumper & Thrower in this study was 12.24 ± 1.90, 13.11±1.76 respectively was observed. The mean chest skin fold of Jumper & Thrower was 8.56±.98 & 11.24±1.51 found respectively. The highly significant relationship of triceps and chest skinfold found between Thrower & Jumper (p=.0001 t =6.39) (p<.0001; t=8.451) respectively

Table-2

Group	TRI (mm) Mean ± S.D.	CHE (mm) Mean ± S.D.
Thrower	13.11 ± 1.76	11.24 ± 1.56
Jumper	12.24 ± 1.90	9.63 ± 1.11
p value	(0.0218)S	(<.0001) HS
t value	2.352	4.828



Above Bar chart showing mean skinfold thickness (mm) at Triceps (TRI) & Chest (CHE) of subjects

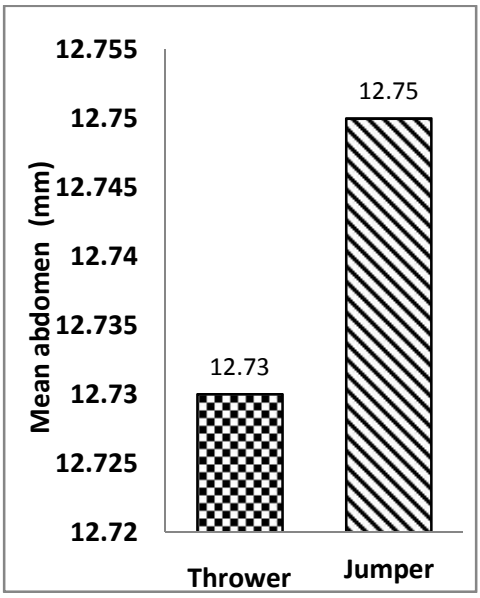
3. **Mean skinfold thickness (mm) at Abdomen & Calf of subjects**

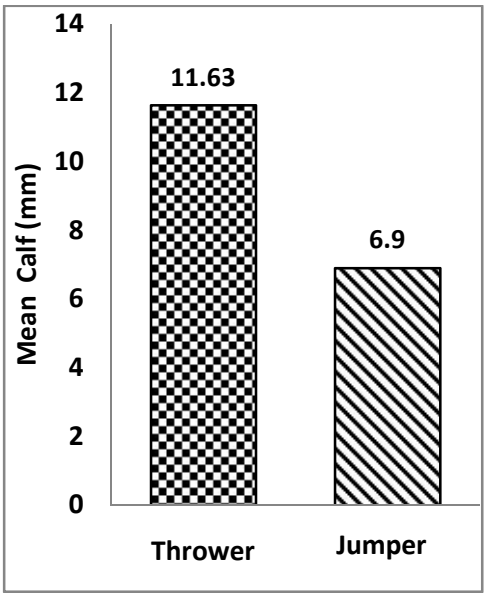
The non significant relation found between Thrower & jumper (p=.3133; t=1.016) for abdominal skinfold. Whereas highly significant value found for calf (Table- 3)

Table No.-3

Group	ABD (mm) Mean ± S.D.	CALF (mm) Mean ± S.D.
Thrower	12.73 ± 1.62	11.63 ± 2.00
Jumper	12.75 ± 1.93	6.9 ± 1.19
p value	(0.9562) NS	(<.0001) HS
t value	0.0551	11.660

Bar charts showing mean skinfold thickness (mm) at Abdomen (ABD) & Calf of subjects





CONCLUSION

All the anthropometric parameter (triceps skin fold, chest, calf skin fold) have significant relationship for Jumper & Thrower (except abdomen skin fold).The study shows that the throwers shows higher mean value of skinfold thickness than the Jumper but biceps girth value was higher for thrower whereas Jumper shows higher value of calf girth. The present study is an attempt to understand the anthropometric characteristics and body composition of athletes of western Rajasthan which would help the coaches to adjust the training program for athletes.

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