

Research Paper :

Study on differences in ponderal index, hip widths-stature index and shoulder widths-stature index of elite male Indian throwers of different throwing events

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Accepted : June, 2010

ABSTRACT

The purpose of the study was to compare the body proportionality of Indian elite male throwers. The data from 25 subjects each of shot put, discus, javelin and hammer throws was collected from national and international tournaments, India Camp, SAI and State hostels. The variables of the study were Ponderal index, hip breadth- stature index and shoulder breadth- stature index. Analysis of variance (ANOVA) was used to find out the significant difference in the said variables of the study among four types of throwers. Where significant differences were observed, the L.S.D. test was used to compare mean difference. The results of the analysis had shown that javelin throwers were having greater mean Ponderal index than other three groups. Hammer throwers were having greater shoulder breadth- stature index than other three groups and shot putters having greater mean hip width- stature index of all.

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Key words : Ponderal index, Hip breadth, Stature index and shoulder breadth, Stature index

In ancient time throws were used in hunting and warfare. In modern time throws are used for achieving awards or medals in national and international level competitions. The "throws" (shot put, discus, javelin, and hammer) are field events in athletics. They are measures for explosive strength (power) in a human being from ancient time to modern time (Behke and Royce, 1996). The throwers of shot put, discus, javelin and hammer differ greatly in physique from the other athletes (Carter, 1970, 1986). As a group, they are taller and heavier, with longer arms in relation to their legs. They had broader shoulders and broader hips even for their trunk size, and are somewhat fatter than the track athletes. Their proportions of leg to the trunk is similar to those of middle distance runners.

The relationship of length to breadth, height to thickness, length-to-length etc. of various parts of body represents proportions (Johnston, 1982). This importance of proportion becomes evident, when we want to compare particular body parts of two persons who are otherwise different in over all size. The proportions or ratio keeps one measurement constant in all subjects compared and evaluate the differences in the other measurements. The body proportion can be studied in various ways, but indices method is best for determining body proportions (McLean and Parker, 1989).

The purpose of this research work was to assess the differences existing in various segmental proportions of Indian elite male shot put, discus, javelin and hammer throwers.

METHODOLOGY

For the purpose of this study, 25 elite male throwers for each javelin, shot put, discus and hammer throws were selected from various national and international tournaments, State and SAI hostels and India camp.

Anthropometrical measurement from 25 elite male shot putters were collected from:

- Eight shot putters from All India Police Athletic Championship, Kolkata date. 20-11-2004
- Two shot putters from SAI Hostel Kolkata, dated- 23-11-2004.
- Five shot putters from Delhi SAI Hostel, dated 11-03-2005.
- Two shot putters from SAI Hostel Patiala, dated 27-01-2005.
- Three shot putters from India Camp, dated- 05-02-2005.
- Two shot putters from State Hostel Allahabad, dated-27-12-2004.
- One shot putter from Indo-Pak Punjab Competition, dated -18-02-2005.
- Two shot putters from State Hostel Lucknow, dated- 30-12-2004.

Anthropometrical measurement from 25 elite male discus thrower were collected from:

- Seven discus throwers from All India Police Athletic Championship, Kolkata, dated- 20-11-2004