ABSTRACT

The purpose of the study was to find out the relationship between selected anthropometrical measurement and physical variables to the performance of jumpers.

Fifty female athletes of University and National level of Rajasthan studying in Jai Narain Vyas University and Govt. College of Physical Education were selected for this study. The age groups of the subjects were ranged from 18 years to 25 years. Total Seventeen variables i.e. Twelve anthropometric and five Physical variables were selected. Anthropometric measurements included Standing Height, Weight, Shoulder width, Hip Girth, Thigh Girth, Thigh Length Leg length, Foreleg Length, Calf Girth, Foot Length, Ponderal Index, Crural Index and physical variables included speed (50m dash), strength (medicine ball throw), agility (10x4 shuttle run), flexibility (sit & reach) and endurance (9min run/walk). Standing height was measured with the help of wall scale and hard board in centimeters. Weight was measured by weighing machine in kilograms. Leg length, fore leg length, thigh length was measured with the help of flexible steel tape in centimeters. Foot length and shoulder width was measured with the help of spreading caliper in centimeters. Thigh girth, calf girth, hip girth was measured with the help of flexible steel tape in centimeters. Ponderal index and Crural Index was calculated.
Endurance was measured by the performance of 9 m run/walk test on 400m standard track in meters. Speed was measured by the performance of 50 m dash in seconds. Agility was measured by 10 x 4 m shuttle run in seconds. Flexibility of lower back and hamstring muscles was measured by the performance of sit and reach test in centimeters. Arm and shoulder griddle strength was measured by the performance of medicine ball throw in meters. The research scholars personally meet the University and National level players and they were recruited by word of mouth. All subjects were provided complete information about the study and equipments which were used.

Testers, subject’s reliability and reliability of test were established by test-retest method and the reliability co-efficient were found to be satisfactorily high. To find the relationship of anthropometric measurements and physical variables Pearson’s Product Moment Correlation was used.

The level of significance to check the relationship obtained by Pearson’s Product Moment Correlation was set at 0.05 level of significance. In using the Product Moment correlation, a value of 0.273 was needed for significance for forty eight (48) degree of freedom for each group.

Findings indicated that long jump ability is significantly related to weight (0.54781), hip girth (0.38763) and ponderal index (0.609882). Therefore, it is evidence that these anthropometric measurements affected to long jump ability.
Whereas no significant relationship was obtained between standing height (0.166417), leg length (0.213715), foot length (0.2097), foreleg length (0.222619), thigh girth (0.27204), thigh length (0.094196), calf girth (0.04403), shoulder width (0.25029), and crural index (0.164458) which shows that these measurements were not so important measurement for spotting talented long jumpers.

In high jump ability, finding indicated that out of ten anthropometric measurements six anthropometric i.e. height (0.31018), weight (r=0.43052), leg length (0.405117), thigh length (0.301699), Foreleg length (0.340233) and ponderal index (0.598742) were significantly related to high jump ability. Insignificant relationship was found in Foot length (0.08206), hip girth (0.1897), shoulder width (0.14437), calf girth (0.01215), thigh girth (0.23047) and crural index (0.048228). The value of 0.273 was needed for significance for forty eight (48) degree of freedom for high jump.

Finding of physical variables on long jump ability indicated that there was significant relationship was obtained between strength (0.35234), agility (0.29106) with long jump ability. Therefore, it is evident that these physical variables affected to long jump ability. Whereas no significant relationship was obtained between endurance (0.12491), speed (0.24914) & flexibility (0.091665), which shows that these variables were not so important variables for spotting talented high jumpers.
Similarly, findings of physical variables on high jump ability indicated that there was no significant relationship was obtained between speed (0.21597), strength (0.264826), endurance (0.1334), agility (0.14014), flexibility (0.12) with high jump ability, which shows that these variables were not so important variable on which the assessment of high jump depend.

CONCLUSIONS

On the basis of the analysis of data as well as in the view of observation, along with objective and within the limitation of the present study the following conclusions were drawn:

1. In anthropometric measurements of University level and National level female players, weight, hip girth and ponderal index were found highly correlated with long jump ability.

2. In anthropometric measurements of University and National level female players, height, weight, leg length, thigh length, Foreleg length and ponderal index were found highly significant with high jump ability.

3. In Physical variables of University and National level female players, strength and agility were found highly correlated with long jump ability.

4. In Physical variables of University and National level female players there were found no significant variables with high jump ability.
RECOMMENDATIONS

In the light of the result of present study following recommendations are made:

1. This study can be used in selecting any kind of physical training program of females.

2. It is recommended that same study may be repeated on large group of subjects.

3. It is further recommended that similar study may be conducted on males of Rajasthan or males of other state using the different variables.

4. A similar population specific study may be conducted on any other area or states.

5. A similar study may be conducted utilizing the other anthropometrical and physical variables in additional to the variables chosen other than chosen in the present study.

6. A similar study may be conducted with the help of more sophisticated and advance technology of anthropometric measurements and physical variables.