

Sex Differences in Lower Limb Measurements among Jats of Haryana

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Abstract

An attempt has been made in the present study to observe the developmental sequence of growth sex differences in stature and measures of the lower limb among Jats of Haryana. A total of 1035 Jats (502 males and 533 females) ranging in age from 9 to 17 years were measured for stature, total lower extremity length, thigh length, lower leg length and foot length in accordance with the standard measurement techniques. Analysis of the data reveals that the female Jats are not only taller than their male counterparts in stature but also have longer total lower extremity length, thigh length and lower leg length from 9 to 13 years. However males have longer feet than the females at all ages. Notwithstanding the variations in all the measurements of lower limb and stature between the sexes the differential trends reveal significant variations between 14 and 17 years for stature, lower extremity length and lower leg length while in case of thigh length and foot length the differences are significant from 12 to 17 years.

Key Words: Hawkin's Test, Isometric Abduction, Isometric External Rotation, Injury

Introduction

Human growth is an incessant process while the pace at which it proceeds is inconsistent for every growing individual. The individual development generally occurs in spurts, with different body components growing at a variable rate, time and intensity.

It is a known fact that trunk and leg segments have equal proportion within the body by about 14 years where after the legs outgrows the trunk and remains longer for the remaining period of growth. Similarly the arms are longer than the legs only during prenatal period, with regards to the growth of different body segments.

Krogman (1973) emphasized that during postnatal period the hand and neck segment increases twice in size, trunk three times, arms four times and the legs five times in their respective proportions.

These main body segments are further divided into certain sub segments or components, for example, the arm segment

comprises of upper arm, fore arm and hand, while the leg segment comprises of thigh, calf and the foot. Most of the studies conducted by Indian researchers pertain to the general patterns of growth among different communities. However, pattern of change in the components of the upper or the lower extremities has not attracted attention of researchers, due to which only a few studies covered this aspect. The present study has been attempted to observe the sex and age changes in components of the leg segment among the Jats of Haryana.

Materials and Methods

Data for the present study comprises of 1035 Jats (502 males and 533 females), ranging in age from 9 to 17 years. All the subjects were measured cross sectionally for the following dimensions: stature, total leg length, thigh length, lower leg length, and foot length as per standard measurement techniques recommended by Martin and Saller (1959), Weiner and Lourie (1969).