

Variability of Covariance of Selected Skeletal Diameters of Female in a Longitudinal Physical Training Programme

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Abstract : Anthropometry helps in associating the physical properties of an individual with their racial, cultural, and psychological attributes. Numerous research studies have included different skeletal diameters as a variable. However, most of the studies suggest their inclusion describing specific characteristics/traits of the body. However, there seems to be a scarcity of literature related to the effect of any kind of longitudinal physical training on human skeletal diameters. Hence, the present investigation was conducted to study the variability of covariance of selected skeletal diameters of females in a longitudinal physical training programme. The sample for the study was 78 college going students of the University of Delhi, classified equally in three groups, i.e. viz. (a) Progressive load of training or conditioning group coded as PLT; (b) Constant load of training or non-conditioning group coded as CLT; and (c) No-load or control or sedentary group coded as NL. Collectively, mean age of the sample was 19.54±1.79 years. The randomly selected samples were given maximum consideration to maintain their homogeneity. The variables included biacromial diameter, biiliocrystal diameter, bitrochantæron diameter, humeral bicondylar, femoral bicondylar, wrist diameter, ankle diameter, and foot breadth. Multi-group repeated measure design was adopted for the experimentation. Each group was measured four times after completion of each of the three mesocycles of six-weeks duration. The measurements were taken following the standard landmarks and procedures. Mean, standard deviation, analysis of co-variance and its post-hoc analysis were computed to analyze the data statistically. The study concluded that both the progressive and constant load of physical training bring changes in the selected skeletal diameters of females. It also reflected the increase due to growth also along with training.

Keywords : longitudinal, physical training, skeletal diameters, step progression load

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