117 ESTIMATION OF BODY COMPOSITION USING DIFFERENT EQUATIONS ON A LONGITUDINAL PHYSICAL TRAINING PARADIGM OF EXPERIMENTATION ON NATIONAL LEVEL MALE SPORTSPERSON

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Body composition, the proportion of the lean body mass and depot fat, is one of the most important features characterising human. The assessment of body composition has revealed that athletes generally have physique characteristics unique to their specific sports. Studies have shown that high percentage of body fat not only serves as dead weight but also lessens the relative ability to support oxygen to the working muscles then cutting down on one's cardiovascular endurance. There are debate on the specific uses of different equations for estimating body compositions of Indian population. Hence, the present investigation was conducted with the following objectives: (1) estimation of body composition using different equations; and (2) to study the effect of longitudinal physical training on selected body composition variables of national level male sports person of University of Delhi. The sample size for the study was 90 having three groups of male (namely progressive load or intensive training, constant load or moderate training, no load or sedentary group), each group having 30 samples (the mean age was 20.04 ± 0.49 years). Different equations used to compute the body density included Sloan, Durnin and Womersley, Weltman and Katch, Nagamine and Suzuk, Sloan and Weir and Jackson and Pollock, while both Siri and Brozek's formula were used to compute the fat percentage. The variables included lean body weight, body fat and percentage body fat. Standard landmarks and measurement protocols were followed to measure the selected variables as described by various authors. Mean and SD were computed to describe the data while analysis of covariance was applied to test the variability of covariance as the effect of experimentation (18 weeks of training) on selected groups (progressive load or intensive training, constant load or moderate training, no load or sedentary group); at different stages of testing that is, test-1 (at 0 weeks of training ie, pretest), test-2 (after 6 weeks of training), test-3 (after 12 weeks of training), test-4 (after 18 weeks or completion of training) as well as for intermittent stages of testing in a longitudinal experimental paradigm on selected variables of male. The paired t test comparison for mean difference was done as post-hoc analysis, where the F-ratio was found to be significant at 0.05 level. The level of significance chosen for testing the hypothesis was 0.05. The study concluded that a long term physical training paradigm of experimentation had a significant impact on the body composition variables of male sports person of national level (students of University of Delhi). The estimation of body composition using different equations are comparable.