72 COMPARATIVE EFFECTS OF TRAINING, CONCENTRIC TRAINING, ECCENTRIC TRAINING AND THEIR COMBINATION ON STRENGTH OF SELECTED BODY SEGMENTS

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The purpose of the study was to find out the effects of three different types of isotonic training programme, viz. eccentric, concentric and combination of both on strength of selected body segments, and the study was confined to strength variables of leg and arms only. Only female students of age ranging between 14 and 16 years, studying in classes 7, 8 and 9 were randomly selected from Dorins, New Delhi as subjects for the study and they were assigned to three experimental groups (A, B and C) and a control group 'D', on the basis of initial test performance of standing broad jump for the leg strength and pull ups and modified push ups for the arm strength. The subjects selected were day scholars and were not undergoing any physical training; the health records of the institution revealed that all the subjects were healthy and fit to undergo the training programme. The random group design was chosen for the study. The explosive strength of leg, which was measured by administering test of standing broad jump, was horizontal. The leg strength score was the distance covered by the subject to the nearest centimetres, while arm strength is calculated by the formula, that is (pull ups + modified push ups) ($w/10 + H-60$), for which pull ups and modified push ups test were conducted, which is the maximum number of pull ups and modified push ups completed by the subjects, for computing the formula height and weight were also found in feet and pound, respectively. The training was carried out for a period of 10 weeks excluding the time required for conducting pretest and post-test. The subjects were trained thrice in a week that is, on Monday, Wednesday and Friday. On the basis of finding from three experimental groups and one control group, pre-test and post-test were examined by applying of co-variance (F-ratio) with regard to the three experimental groups and also for difference between pretest and post-test means, the t test was applied. All the three experimental treatments, concentric, eccentric and combination of both the training were significantly effective in improving the leg and arm strength. No significant difference was observed among the experimental group (eccentric, concentric and combination) of both types of training when compared with one another. No significant improvement was noticed in the control group which may be a reflection of inactivity, which showed that all the types of training were equally effective.