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participants (age = 7.3 ± 0.2 years, height = 126.9 ± 4.4 cm, weight = 25.34 ± 3.68, BMI = 22.9 kg) with different backpack weights (0%, 10%, 20%, and 30%) walking on the treadmill at speed of 3 km/h for 20 minutes duration, 5 minutes for each backpack weights. In this study for comparing the different backpack weights, ANOVA with repeated measures and Pearson correlation analysis were utilized.

Results. Based on the questionnaire, 55.3% of the students walk by foot in which 45.70% walk a distance more than 1 km from their house door to the school. In addition, the average weight of the students’ backpacks is 16.7% of their body weight. The majority 65.7% of children answered that they were active 7 days a week and only 1.3% of children answered that they were active just 2 days in the week. The findings showed that there is a significant positive relationship between load conditions and trunk inclination angle and the same relationship between load conditions and the step length on the other hand this relationship was negative compared with the distance from the floor to the earlobe joint. The results of this study demonstrate that with the increase of the backpack weight, the distance from the floor to the earlobe joint have been decreased, simultaneously step length and trunk inclination angle have been increased.

Conclusions. This study showed that with the increase of the backpack weight; the distance from the floor to the earlobe joint has been decreased for different load conditions. And no significant changes were found in step length between the 0% and 10% BW and the 20% and 30% load conditions. Further, the trunk inclination angle was highly significantly increased of different loads when compared to the 0% body weight load conditions.

Key words: Biomechanics. Schoolchildren. Load carrying.

THE EFFECT OF 8 WEEK EXERCISE PROGRAM ON PHYSICAL FITNESS AND SOME BODY COMPONENT PARAMETERS FOR MIDDLE AGE SEDENTARY WOMEN

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Introduction. Correctly regulated physical activities play an important role to protect many illnesses and provide quality life. Further more physical activities provide better and economic working of organic system (Noder et. al. 1998). Within this study we aim to investigate the effect of 8 week aerobic and step exercise program on physical fitness and some body component parameters for middle age sedentary women.

Method. Fifteen sedentary women volunteer participated this study. Participants’ mean age was 30.90±8.41 years, the average height was 161.30±7.00 cm, weight average was 66.34±8.55 kg. Eight week step and aerobic exercise program was applied to this working group three days per week. The intensity of the exercises sessions was %50-60 intensity of heart rate and the duration of the exercises were 45-55 minutes per day. All measurements and tests were taken twice, first was taken two days before and two days after the 8 week training session. Research group was measured by Tanita BC-418 MA Body Composition Analyzer. Wilcoxon Signed-Rank Test was conducted for comparison of before and after exercises values. Statically significant level was set at 0.05 and 0.01.

Result. In this study according to the results of Wilcoxon Signed Ranks test there have significant decrease in total fat percentile, total fat mass and trunk fat mass after the exercise program (p<0.01). Additionally, the decreases of right leg fat percentile, right leg fat mass, left leg fat percentile, left leg fat mass and trunk fat mass was statically significant (p<0.05). Changes in other parameters were not statistically significant.

Discussion. At the study, there have significant decrease in total fat percentile, total fat mass and trunk fat mass level after the exercise program. On the other hand the decreases of right leg fat percentile, right leg fat mass, left leg fat percentile, left leg fat mass and trunk fat mass was statistically significant. But changes in weight, BMI, BMR, free fat mass, visceral fat rates, right-left leg free fat mass and trunk free fat mass were statistically insignificant.

There are huge amount of researches about the aerobic exercise and step exercise related with different age groups and in different combinations. Aerobic exercise has been reported positive effects on physical fitness parameters (Babayigit, et. al. 2002; Colakoglu et. al. 2006; Imamoglu et. al.2002; Akdur et. al. 2007). As a result, the usage of body fat in the metabolism as an energy source in the moderate intensity and long duration aerobic exercises may be the reason of the positive decrease in physical fitness parameters and body components of women subjects.