Waist to height ratio (WHR) was 0.42, when fathers and mothers had the highest level of education and 0.45 when they had the lowest level. The same inversely association was observed in European girls between FAS and WHR, (p = 0.0112) that showed 0.43 when they had the highest level of FAS and, 0.44 when the level was the lowest. However, this association was not observed between FAS and WC. Similarly, the inverse association was observed in European girls, when evaluating the relationship between parental education and WC. On the highest level of mother’s education, WC was 69.3 cm (p = 0.0099) and for father’s education was 69.2 cm (p = 0.0014). There was not any association in boys and when considering parent’s occupation.

Conclusions. In European adolescent girls, abdominal obesity (WC and WHR) was associated with the education levels of the parents. Health promotion programs aiming to reduce abdominal obesity should give special consideration to low education level families.

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Effects of different types of exercise physical aerobic with intervention nutritional in the tension arterial, mass and composition corporal and cardiorespiratory condition in persons with obesity and hypertension primary: preliminary study


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Keywords: Hypertension arterial; Intensity; Interval; Intensity moderated; Diet hipocaloric; Consumption of oxygen pico

Objective. To compare the effects of two programs of exercise physical (EF) aerobic (continuous intensity moderated and high volume vs. interval of high intensity and low volume) in the mass and composition corporal, arterial tension (PA) and condition cardiorespiratory in patients adults with obesity and hypertension primary treated with diet hipocaloric; with the effects of treatment with aerobic exercise with diet hipocaloric.

Methods. The design of the study was a prospective longitudinal study with a sample of 31 participants (ages 36-9 years) before and after 16 weeks of intervention. The participants were divided into three groups: GC (n = 11), group control with treatment unique with diet hipocaloric (25% restriction energetic) and recommendations of lifestyle healthy; GEC (n = 10), group EF supervised (2 days/week) in mode continuous intensity moderated (60-80% FCPico), high volume (45 min) and diet hipocaloric; and GEI (n = 10), group EF supervised (2 days/week) in mode interval to intensity high (85-95% FCPico), low volume (20 min) and diet hipocaloric.

Results. Comparing before and after the intervention, the body mass index was 29.8 ± 5.4 kg/m² in GC, 27.1 ± 4.6 kg/m² in GEC, and 27.3 ± 4.5 kg/m² in GEI. At the end of the intervention, the following changes were observed: WC in GC (35 cm) and GEC (33 cm) significantly lower than baseline, and no significant changes in GEI (17 cm). Similarly, systolic blood pressure was significantly lower in GC (14 mmHg) and GEC (13 mmHg), and no changes in GEI (15 mmHg). Similarly, the VO2peak was significantly higher in GC (8.4 METS, p = 0.005) and GEC (7.3 vs. 8.4 METS, p = 0.005), but no changes were observed in GEI (6.2 vs. 7.7 METS, p = 0.02).

Conclusions. A treatment unique with diet hipocaloric as combined with EF aerobic consign reducing mass and body mass index, and the PA. The treatment with diet + EF consign better results in reducing the condition cardiorespiratory, which is associated with a reduction of cardiovascular risk. The protocol of aerobic exercise of high intensity and low volume would be more effective in increments superior to the variables cardiorespiratory, concluding that “less” may be “more.” These results are preliminary confirming with a larger sample.

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Associations between patterns of active commuting and socioeconomic factors in women with fibromyalgia: the al-Andalus Project


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Keywords: Active transportation; Chronic pain; Social-economic factors

Background. Fibromyalgia is associated with a debilitated physical function, which limits activities of daily living. Active commuting might be a way of increasing physical activity levels. Understanding potential social-economic factors associated to active commuting are necessary to promote strategies aiming at increasing physical activity behaviours.

Objective. The aims were: to compare the patterns of commuting between fibromyalgia women and healthy women; and to examine the associations between active commuting and socio-economic factors in fibromyalgia women.

Method. This cross-sectional study included a total of 459 women satisfying the 1990 American College of Rheumatology criteria and 214 healthy women from Andalusia. Active commuting to local shops, supermarket, local facilities and work/study place were assessed by mode of commuting questionnaire. Active commuter and active worker commuter dichotomous variables were created. Civil status, accommodation at home, living with, educational level, current occupational status and professional status were assessed by socioeconomic factors questionnaire. Differences between fibromyalgia and healthy women on the patterns of commuting were performed using the Chi-square test. Associations between active commuting and social-economic factors were performed using binary logistic regression.

Results. No differences in the percentage of active commuters were observed between fibromyalgia and control women (69 vs. 73%). The percentage of active workers commuters did not vary between the fibromyalgia and control groups (71 vs. 67%). Differences in the percentage of active commuting to supermarket were observed between fibromyalgia and controls (46 vs. 56%, p = 0.020,
The influence of different playing surfaces on bone mineral density in pubertal soccer players

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Keywords: Soccer; Pitch; Artificial turf; Natural grass; Bone mass

Introduction. Soccer is one of the most practiced sports in the world. It is characterized by different actions such as changes of direction, starts, stops, jumps and kicks, so it has been defined as an osteogenic sport. Previous studies have demonstrated that soccer participation improves bone mineral density (BMD) in male children. However, the influence that different playing surfaces could have on bone properties has not been studied in depth. Therefore, the aim of this study was to evaluate BMD differences between male soccer players who train on different playing surfaces.

Methods. A total of 76 male soccer players (12.7 ± 0.6 y) participated in this study. They were divided into 4 groups depending on the type of surface they played on as follows: 18 soccer players who trained in natural turf (NT), 13 in natural non-grass turf (NGT), 27 in 2nd generation artificial turf (2AT) and 18 in 3rd generation artificial turf (3AT). BMD and lean mass were measured with Dual-energy X-ray absorptiometry. Multivariate analysis of covariance (MANCOVA) test using age, height, Tanner stage and subtotal body lean mass (whole body less the head) as covariates was used to analyze differences in BMD variables by playing surface.

Results. BMD was related to playing surface. Specifically, for NT, the BMD of the left leg was 1.9% higher than for 2AT. This difference was not significant (p < 0.05). For NGT, no differences were found compared to NT. However, BMD of the right leg was 1.3% higher than for 3AT. Other groups did not show differences between them (p > 0.05).

Conclusions. Soccer participation in 3AT might affect positively bone development during puberty. Despite these results, it would be necessary to analyze other variables, which could modify bone properties as calcium intake and the volume and type of soccer training.

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Relationship between overall physical fitness and cardiovascular disease risk factors in Spanish pubertal soccer players

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Objective. To assess the extent of under reporting (UR) in a group of adolescent swimmers (SWI) compared to normo-active adolescents (CON) and investigate associated variables for each group.

Methods. A total of 80 SWI (37 females; 14.3 ± 1.8 y) and 60 CON (23 females; 14.4 ± 2.7 y) were evaluated. Weight, height and waist circumference (WC) were measured and body mass index (BMI) was calculated. Percentage of body fat (BF%) was calculated with Slaughter equation. Socioeconomic status was registered with a questionnaire. Contribution of macronutrients to energy intake (EI) was estimated using two 24hour dietary recalls. UR was identified according to the Goldberg criterion adapted to adolescents. Pearson correlations between UR and the mentioned variables were performed. Multiple linear regressions investigated the association between UR and the correlated variables (BMI, %BF and WC separately included to avoid collinearity).

Results. Rates of UR were 19.6% and 2.9% in male and female CON respectively; and 24% and 23.3% in male and female SWI respectively, with significant differences between males and females CON and between SWI and CON females (p < 0.05). In male CON, BMI (0.37; CI 0.01, 0.11) and BF% (0.34; CI 0.00, 0.04) were positively related to UR and contribution of lipids to EI was negatively related to UR in BMI (-0.50; CI -0.05, -0.01), WC (-0.48; CI -0.05, -0.00) and BF% (-0.44; CI -0.05, 0.00) independent models. In male SWI, BMI (0.33; CI 0.00, 0.10) and WC (0.30; CI 0.00, 0.05) were positively related to UR. In female SWI, contribution of proteins to EI (0.41; CI 0.01, 0.06) was positively related to UR.

Conclusion. In female CON, the low percentage of UR makes difficult to draw conclusions. High BMI shows to be related to UR in males independently of physical activity level. However, athletes and CON show different dietary patterns when UR.

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