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Keywords: Physical fitness; Chronic pain; Disease; self-reported flexibility; Self-administered scale; Comparison

Objectives. To examine the validity of self-reported flexibility with International Fitness Scale (IFIS) against upper and lower flexibility in fibromyalgia and healthy women. To study the test-retest reliability of the IFIS flexibility item in female fibromyalgia patients.

Methods. For validity purpose, the final sample comprised 413 fibromyalgia and 195 control women. For the test-retest (one-week interval) reliability purpose, 101 fibromyalgia women participated. Flexibility level was both self-reported (i.e. IFIS) and performance-based using standard fitness tests (i.e. "chair sit and reach" and "back scratch"). One-way analysis of variance (ANOVA) was used to examine the associations of self-reported flexibility (very poor, poor, average and good/very good) and performance-based flexibility. Post hoc group comparisons were used to assess the differences across categories of self-reported fitness. The test-retest reliability of the IFIS was tested with weighted Kappa *(k)* coefficients.

Results. Fibromyalgia women reporting a "poor", "average" or "good/very good" flexibility on IFIS had better performance-based test results on flexibility compared with those reporting "very poor" flexibility level (all $p < 0.05$). Likewise, control women reporting a "good/very good" flexibility on IFIS obtained better performance-based test results on flexibility compared with those reporting "average", "poor" or "very poor" flexibility level (all $p < 0.05$). The weighted Kappa was 0.63 which represent a substantial test-retest agreement.

Conclusions. The IFIS is a moderately valid and reliable tool for ranking fibromyalgia patients and controls according to their flexibility level. These results extend the current knowledge on the validity and reliability of the IFIS to measure flexibility in diverse populations.

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Effectiveness of an exercise intervention on body composition and physical fitness in midlife women: the FLAMENCO project

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Keywords: Menopause; Physical fitness; Fat mass; Muscle mass; Aerobic capacity; Strength

Aims. To determine the effects of an exercise intervention in perimenopausal women on body composition, cardiovascular response and physical fitness.

Methods. A total of 27 women from a healthcare centre of Granada with an age ranged 45-60 years participated in this pilot project. Fourteen (mean age 53.9 ± 4 years old) were randomly enrolled in a 9 weeks (60 min/session, 3 days/week) moderate-intensity exercise intervention based on aerobic and strength training completed with flexibility, balance-oriented, coordination and relaxation activities. We used standardized field-based fitness tests to assess cardiorespiratory fitness, upper and lower muscular strength, upper and lower flexibility and static and dynamic balance. Fatness was assessed by impedanciometry and anthropometry. We also measured resting heart rate and blood pressure. Non-parametric Wilcoxon test for paired samples was used.

Results. The exercise program performed decreased a 5% the body mass index, a 9% the waist circumference and an 8% the body fat percentage (all, $P < 0.01$). Despite we have observed an improved tendency in systolic (6.5%) as well as diastolic (3.5%) blood pressure after exercise; we cannot confirm this approach significantly ($P = 0.08$ and $P = 0.05$, respectively). Women improved a 7% their cardiorespiratory fitness ($P < 0.05$) and a 10% their lower-body muscular strength ($P < 0.01$). We have observed an improved tendency in static balance (15%) but it was not statistically significant ($P = 0.08$). Further research is needed in order to determine whether programmes of longer duration (>9 weeks) or higher frequency (>3 sessions/week) induce major improvements on upper muscular strength, dynamic balance and flexibility.

Conclusion. Overall, an exercise program for 9 weeks (3 sessions/week) significantly improved body composition, aerobic capacity and lower-body muscle strength in perimenopausal women. This is a pilot study that must be replicated and confirmed in higher sample size.

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Effects of an exercise intervention on health-related quality of life and optimism in middle aged women: The FLAMENCO project

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Keywords: Menopause; mental health; physical health; physical fitness

Objective. Menopause is characterized by the presence of emotional instability and greater dissatisfaction with life. Therefore, we aimed to analyze the effects of an exercise intervention on quality of life and optimism in perimenopausal women.

Method. Fourteen perimenopausal women (54.1 ± 3.2 years) participated in a 9 weeks (60 minutes/session, 3 days/week) moderate-vigorous intensity (12-16 rating of perceived effort) exercise intervention (aerobic and resistance exercise mainly). Health-related quality of life and general optimism and pessimism were evaluated by means of the Short-Form Health Survey (SF-36) and the Revised Life Orientation Test, respectively. Non-parametric Wilcoxon signed ranks test for paired samples was used.

Results. The exercise program improved physical function by 12% (P < 0.05) and emotional role by 18% (P = 0.05). No statistically significant differences were found for the remaining SF-36 dimensions. After the exercise intervention participants' general optimism improved 21% (P < 0.05).

Conclusion. An exercise intervention program is successful by improving the physical functioning and general optimism of perimenopausal women. Because of the small sample size, the results must be taken cautiously. Future studies with greater sample sizes should confirm the present results.

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High intensity strength training in overweight adults at workplace: a pilot study

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Keywords: Resistance training; Health; Hypertension; Physical fitness

Objective. The purpose of this pilot study was to determine (a) the effects of high intensity strength training at workplace on blood pressure, fat percentage and physical fitness in overweight adults, and (b) the influence of this intervention on the blood pressure in a subsample of hypertensive subjects.

Methods. Overweight adults ($n = 15$) aged 42,8 years underwent anthropometric assessment (weight, fat percentage, waist circumference, and triceps skinfold), physical fitness assessment (leg extensor power, upper body endurance, hand grip strength and Vo2max) and blood pressure assessment before and after 8 weeks of high intensity resistance training at workplace. Each training session consist of 16 sets of 45 repetitions performed at 1 repetition per second decreasing load at muscular failure starting at 60% of repetition maximum (RM).

Results. Weight, body fat percentage, and triceps skinfold decreased significantly with the high intensity resistance training protocol at workplace (all $p < 0.05$). Performance in physical fitness tests increased significantly with training (all $p < 0.05$), except for handgrip strength. Both systolic and diastolic blood pressure decreased significantly with R-HIRT at workplace (all $p < 0.05$) in hypertensive subjects.

Conclusion. This protocol performed at workplace in this pilot study produces health and fitness benefits in overweight and hypertensive people.

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Reliability of an adaptation of the 20m shuttle run test to be use in preschool children: The PREFIT 20m shuttle run test

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Keywords: Preschoolers; Cardiorespiratory fitness; Aerobic capacity; Physical fitness; Reliable

Aim. To examine the reliability of the PREFIT 20m shuttle run test (modified version of the original 20m shuttle run test) in preschool children from 3 to 5 years group.

Methods. A total of 130 students (4.91 ± 0.89 years; 77 boys) participated in the study. The PREFIT 20m shuttle run test consisted in run back and forth between 2 lines 20m apart with an audio signal. The initial running speed is 6.5 km/h and it is increased by 0.5 km/h/min. The test finishes when the preschool children fail to reach the end lines concurrent with the audio signals on 2 consecutive occasions. On the other hand, the test ends when the child stops because of exhaustion. Bearing in mind the young age of the children, two evaluators ran with a reduced group of children (e.g. 4-8 preschoolers) in order to provide an adequate pace. All the participants performed the test twice, two weeks apart.

Results. Mean test-retest difference (systematic error) in the number of laps achieved was 2 laps (test = 25 laps, re-test = 27 laps) for all the participants. According to the sex, the systematic error was 1 lap for boys and 3.4 laps for girls. Mean difference were 1.8, 3.3 and 1.6 laps in 3, 4 and 5 years groups, respectively. Nevertheless, no significant differences were found between sex (P = 0.360) or age groups (P = 804).

Conclusions. Our results suggest the PREFIT 20m shuttle run test is reliable in preschool children. Future longitudinal or intervention studies using this test should take into account that changes in the test performance of 2 laps may be due to the variability of the measure, while wider changes would be attributable to the intervention or changes associated with age.

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Effectiveness of an exercise intervention on fatigue and sleep quality in midlife women: the FLAMENCO project

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