552

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EFFECT OF A PELVIC FLOOR MUSCLES TRAINING PROTOCOL ASSOCIATED WITH ABDOMINOPELVIC EXERCISES ON PELVIC FLOOR MUSCLES STRENGTH IN CONTINENT WOMEN: PRELIMINARY RESULTS

Hypothesis / aims of study

Pelvic posture is maintained by a balanced action between abdominal muscles, spinal extensors and hip. Pelvic changes, in turn, can impact pelvic muscle structure and thus predispose occurrence of pelvic floor muscles (PFM) disorders.

Thus, we hypothesized that pelvic rehabilitation exercise protocol promotes an increase of PMF strength. The aim of this study is to investigate the effect of a pelvic rehabilitation exercise protocol on PFM strength in continents women.

Study design, materials and methods

A prospective clinical study was conducted with 15 women continents. Participants were evaluated before and after perform 10 sessions of proposed protocol. Initially, it was performed an analysis of pelvic tilt angle by photogrammetry in which were taken participant photos using swimsuits and marquees on anterior superior iliac spines and on posterior inferior iliac spines. Then, analysis of participants PFM strength through digital palpation was carried out graduated strength according to Modified Oxford Scale.

This proposed exercise protocol was performed under a physiotherapist supervision during 60 minute, totaling 10 sessions twice a week. This protocol was based on stretching and strengthening exercises of abdominopelvic and hip muscles evolving postures lying, sitting and standing. Among the exercises were carried out two series of PFM rapid and three sustained contractions.

Data analysis was performed by a second evaluator, blinded to clinical data. Pelvic tilt angles was assessed by photogrammetry in which an evaluator demarcated the angle between the line of intersection that joins the anterior superior iliac spine to the posterior inferior iliac spine using Corporis Pro® 3.1.3 software. After this pelvic tilt angle analysis, participants was characterized as with anterior pelvic tilt (positive value) or posterior pelvic tilt (negative value).

Vaginal dynamometer data analysis was performed by an equipment software (System Brasil® EMG) obtaining strength average value of three maximum voluntary contractions of the MAP (kgf) (1). Statistical analysis was performed using McNemar-Bowker test with a significance level of 5%.

Results

Most participants were single (86,66%), have white skin color (80%) and have third full/incomplete college (86,66%). Participants had a mean age of 25,33 (± 4,6) years old and body mass index average of 22,16 (± 2,95) kg/cm2.

In pelvic posture photogrammetry analysis, it was found that most of the participants had posterior pelvic tilt (46.66%), while others had anterior pelvic tilt (53.33%). After training, the number of participants with anterior pelvic tilt increased to 60%, despite not having been observed statistically significant differences in pelvic positioning pre and post training. Table 1 shows evaluation of PFM strength before and after PFM training protocol with abdominopelvic exercises, assessed by digital palpation.

Table 1 – PFM Strength analysis by digital palpation, pre and post training.

DIGITAL PALPATION (Oxford Modified Scale)	**Pre-training** (f/%)	**Post-training** (f/%)	**p-value**
2 e 3	7/ 46,7	2/ 13,3	
4	6/ 40	6 / 40	029*
5	2/ 13.3	7/ 46.7	

Data presented in absolute frequency (fi) and relative frequency (%). Kgf = Kilogram force. * P <0.05

Interpretation of results

A good pelvic positioning provides an adequate behavior of PFM, favoring its functions. Other studies (2) applied global postural reeducation (GPR) in women with urinary incontinence and was obtained an improvement of urinary symptoms after surgery.

Preliminary results showed that the PFM training protocol associated with abdominopelvic exercises appear to benefit PFM in continent women. However, due to a small number of participants, it is necessary further study in order to verify that the improved MAP strength also occurs through vaginal dynamometer. In addition, it is suggested the application of this protocol in other populations as well as in women with urinary incontinence, to check the effect of this protocol on urinary symptoms.

Concluding message

In conclusion, preliminary results suggest that pelvic floor muscles training protocol associated with abdominopelvic exercises promotes an increased pelvic floor muscles strength in continent women, evaluated by digital palpation.

References

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