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CORRELATION BETWEEN BACK MUSCLE STRENGTH AND MOBILITY IN OLDER WOMEN WITH OSTEOPOROSIS

Madeline Luiza Ferreira Pivovarsky^{1,*}, Renata Gonçalves Pinheiro Corrêa¹, Liliana Laura Rossetin¹, Daniela Gallon Correa¹, Heloísa Salomoni de Araújo¹, Gabriela de Almeida Tormes¹, Neiry Ellen Gasperin Arsie¹, Amanda Colombo Peteck Lopes¹, Victoria Zeghibi Cochenski Borba², Ana Carolina Brandt de Macedo¹, Anna Raquel Silveira Gomes¹

1.Universidade Federal do Paraná, Curitiba (PR), Brazil. 2.Universidade do Paraná, Curitiba (PR), Brazil.

*Corresponding author: madeline8497@gmail.com

BACKGROUND

Older women with osteoporosis present high levels of physical inactivity, compression fractures, pain and postural deficits, which lead to disfunctions in the trunk. So, it is important to assess the trunk muscle function of this population. The objective of this study is to verify the correlation between mobility, range of motion (ROM), posture and strength of the trunk in women with osteoporosis.

MATERIALS AND METHODS

This research included older women with osteoporosis over the age of 65. Lumbar mobility was evaluated by Schober's test, hamstring and lower back flexibility (HLBF) by sit and reach test; hamstring flexibility by active-knee extension test; ROM by goniometer; lordosis angle (LA) by flexicurve; trunk flexors and extensors isometric peak of force (IPF) by a hand-held dynamometer. Normality was checked with Shapiro-Wilk test; Pearson or Spearman was used for correlation between variables and linear regression to establish a relationship between dependent and independent variables.

RESULTS

A sample of 19 women (72.36 ± 6.19 years) enrolled the study, with a body mass index of 30.04 ± 6.50 kg/m² - overweight. Lumbar mobility correlates with LA ($r = 0.494$; $p = 0.044$) and HLBF ($r = 0.530$; $p = 0.024$), with 4.7 and 25.8% of interference, respectively. Besides, HLBF is explained in 31.7% by LA ($r = 0.600$; $p = 0.011$) and in 17.3%, by lumbar flexion ROM ($r = 0.470$; $p = 0.049$). The LA is explained in 26.9% by hamstring flexibility ($r = -0.675$; $p = 0.003$) and in 21.9% by lumbar flexion ROM ($r = 0.563$; $p = 0.019$). Also, the trunk muscle flexors IPF is explained in 28.5% by hamstrings flexibility ($r = -0.574$; $p = 0.016$), in 39.0% by lumbar flexion ROM ($r = 0.654$; $p = 0.004$) and in 50.0% by LA ($r = 0.765$; $p = 0.001$). The IPF of trunk muscle extensors is explained in 21.0% by HLBF ($r = 0.513$; $p = 0.042$), in 60.9% by the hamstring flexibility ($r = -0.797$; $p = 0.000$) and in 20.4% by LA ($r = 0.559$; $p = 0.030$).

CONCLUSION

The rehabilitation of this patients should contain interventions aiming to enhance flexibility and strength to ameliorate the postural deficits and to optimize the musculoskeletal function.

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