

Hip and Knee Muscle Strength in Male and Female with CLBP Compared to Healthy Individuals

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Background

Chronic Low back pain (CLBP) is one of the most common musculoskeletal disorders, so that affecting more than 80% of people in their lives (1). Previous studies found a link between LBP and hip muscle strength (2). Lumbopelvic-hip- knee complex is an important biomechanical chain which its muscle strength may vary by LBP (3-5). Therefore, the aim of this study is to examine the associations of lower Extremity strength and chronic low back pain (CLBP) and whether this association is modified by sex.

Material and Method

Participants included 20 patients with chronic LBP (10 men, age 38.25 ± 8.7 years), height (168.1 ± 8.6 cm) and weight 67.8 ± 9.3 kg) and 20 healthy (10 men, age 36.35 ± 4.5 height 170.15 ± 8.4 cm) and weight 62.5 ± 7.8 kg). Hip and knee muscle strength were measured using a handheld dynamometer. Data analysis was conducted by multivariate analysis of variance (MANOVA) to compare the muscle strength of hip flexor, extensor, abductor, and knee flexor and extensor between CLBP and healthy in males and females.

Result

In the most of subjects with CLBP, muscle strength of lower extremity was less than healthy subject. But only in female subjects weakness was significant statistically.

In female group right hip extensor ($P=0.005$), right hip flexor ($P=0.001$), left hip extensor ($P=0.021$) and right knee extensor ($P=0.008$) muscle strength of LBP were less in comparison with healthy females.

Conclusion

Females with CLBP showed more weakness of hip and knee muscle strength than healthy females, while there are not any significant differences between muscle strength in male with and without LBP. Therefore, gender specific design of strengthening exercises interventions for hip and knee to improve CLBP should be explored.

Reference

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Article Information

Conference Proceedings: Global Congress on Physiotherapy, Physical Rehabilitation and Sports Medicine (Paris)

Conference date: 18-19 November, 2019

[Inovineconferences.com](http://inovineconferences.com)

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Citation: Rahimi A (2019) Hip and Knee Muscle Strength in Male and Female with CLBP Compared to Healthy Individuals. J Health Sci Dev.

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