

THE CORRELATIONS BETWEEN RECENT HISTORIES OF LOW BACK PAIN AND TRUNK STRENGTHS IN COLLEGIATE JUDOISTS

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KEY WORDS: trunk strength, low back pain, judo

INTRODUCTION: High occurrence of low back pain (LBP) in competitive judoists has been well documented. Since spine stability deficits could be associated with an incidence of low back injury, sufficient trunk strength is required for LBP prevention. Some studies have indicated that trunk strength weakness may be one of the risk factor for LBP in non-athlete population, yet there is little consensus on the correlation between LBP and trunk strength in competitive judoists. Therefore, the purpose of this study is to demonstrate the correlations between LBP experience and isometric strength of trunk flexion, extension and lateral flexion in collegiate judoists.

METHOD: Nine collegiate judoists were recruited as LBP group in this study (4 males and 5 females, mean age 20.9 ± 0.9 y, mean judo grade: 1.9 ± 0.3). In order to be included as the LBP group, subjects had to experience LBP within six months before the experiment with persistent or recurrent symptoms over twelve weeks. Subjects in the LBP group also had to stop regular practice session for certain periods or visit medical institutions due to the symptoms of LBP. Eleven judoists who had no histories of LBP were identified as the control group (5 males and 6 females, mean age: 19.8 ± 1.1 y, mean judo grade: 1.6 ± 0.5). Isometric strengths of trunk flexion and extension were measured in the seated position at maximum effort. Lateral trunk strength was tested bilaterally with a hand held dynamometer in the side-lying position. The mean values of repeated measurements were used for the data analysis. Mann-Whitney U test was performed to compare the differences in trunk strengths, flexion-extension ratio, and the side-to-side ratio of lateral trunk strength between the LBP and control groups. Statistical significance was defined as the alpha level of 0.05.

RESULTS: The isometric strength of trunk extension was greater in the LBP group (mean \pm SD 6.3 ± 1.0 Nm/kg) than in the control group (7.1 ± 1.6 Nm/kg). The lower flexion-to-extension ratio was also observed in the LBP group. However, those differences were not statistically significant. No significant correlations were found in the lateral trunk strength and the side-to-side ratio between the two groups.

DISCUSSION: Our current findings did not show any significant correlations in trunk strength between the LBP and control groups. Some studies have suggested that weak trunk extension strength could be a risk factor for LBP. Our results could not support the previous results. In addition, a classic experiment showed approximately 60% of trunk strength including lateral trunk strength in LBP subjects when compared to healthy subjects (Mcneill et al, 1980). It is difficult to compare between the previous result and the current findings because of the differences in the measurement protocols. However, there may be little association between lateral trunk strength and recent histories of LBP in collegiate judoists. In future studies, the other factors associated with LBP need to be investigated.

REFERENCES:

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