

## **ABSTRACT**

### **Effectiveness of Lumbar Manipulation on Weight Distribution and Pain in Subjects with Low Back Pain versus a Control Group**

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#### **Purpose**

The purpose of this study was to determine the effect of manipulation of hypomobile lumbar vertebrae on weight distribution in human subjects with low back pain when compared to a control group of subjects without low back pain.

#### **Methodology**

The research design employed to test the first hypothesis was a simple two groups experimental design with repeated measures.

The research design utilized to test the remainder of the hypotheses was a single group experimental design with repeated measures.

Subjects were selected and assigned to their respective groups based on the presence or absence of low back pain and on their compatibility with other inclusion/exclusion criteria.

Median balance scores associated with hypothesis 1 were analyzed statistically using the Mann Whitney Test, while the median balance scores associated with hypotheses 2 and 3 were analyzed statistically utilizing the Wilcoxin signed ranks test. The Wilcoxin signed ranks test was also used to analyze differences in verbal reports of low back pain in hypothesis 4.

#### **Results**

Analysis of the median weight distribution differences between the two groups (hypothesis 1) revealed that they were not statistically significant.

Analysis of the median weight distribution differences prior to and following manipulation for the low back pain group (hypothesis 2) revealed that they were not statistically significant.

Analysis of the median weight distribution differences initially and subsequently for the no pain group (hypothesis 3) revealed that they were not statistically significant.

Analysis of the differences in verbal response pain scores for the low back pain group (hypothesis 4) revealed that they were statistically significant.

## **Conclusions**

The findings of this study were generally consistent with the literature cited, but recommendations for further research focus on the need for more validity/reliability studies on the clinical uses of manipulation, more inter-rater reliability studies on segmental mobility testing, and more studies on the control center(s) of weight distribution and posture.