ORAL PRESENTATIONS

OP6

Comparison of Spatiotemporal Gait Parameters among Individuals with Chronic Low Back Pain and Healthy Subjects: A Cross-Sectional Study

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ABSTRACT

Background and Objectives: Chronic Low Back Pain (CLBP), is characterized by persistent pain in the lower back region, lasting for 12 weeks or longer. CLBP can significantly impair an individual's quality of life, leading to limitations in physical activities, including walking. The primary objective of this study is to analyze the disparities in spatiotemporal gait parameters between individuals with CLBP and healthy subjects. Specifically, the study aims to investigate the differences in step length, single limb support, and walking speed between the two groups. **Methods:** A cross-sectional study was conducted, involving a total of 40 participants; twenty individuals diagnosed with CLBP and 20 healthy subjects. Spatiotemporal gait parameters were assessed using a three-dimensional motion capture system, including step length, single limb support, and walking speed. Each participant completed 10 walking trials at their self-selected walking speed on a 10-meter walking platform. The data obtained from the motion capture system were analyzed using inferential statistics, with an independent t-test employed to compare the means of the two groups. **Results:** The analysis revealed significant differences between CLBP patients and healthy individuals in terms of spatiotemporal gait parameters. Specifically, the differences were observed in step length ($p < 0.002$), single limb support ($p < 0.001$), and walking speed ($p < 0.004$). **Conclusion:** The study findings demonstrate that individuals with CLBP display distinct spatiotemporal gait parameters when compared to healthy individuals. These differences have implications for the rehabilitation outcomes of CLBP, suggesting the need for tailored interventions to address the altered gait patterns in this population.

Keywords: Chronic Low Back Pain; Gait Parameter; Spatiotemporal; Three-dimensional motion capture; Normal walking

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