

RELATIONSHIP BETWEEN KYPHOSIS AND PHYSICAL FUNCTION IN ELDERLY

A. Ota, M. Yano, K. Fukuroku, M. Kimura

Department of Biomedical Engineering, Osaka Electro-Communication University; Graduate School of Medicine Osaka University, Osaka; Kyoto Prefectural University of Medicine School of Nursing, Kyoto, Japan

Kyphosis is frequently seen elderly people, it is considered to effect on physical function. The purpose of this study is to clarify the effect of sagittal spinal alignment in elderly to physical function. one hundred eighty-five elderly persons (mean age: 73.2 ± 6.8 years; 31 men, 154 women) participated in this study. Thoracic kyphosis and lunber lordosis angles were measured using a non- invasive skin surface measurement device, a spinal mouse. Subjects were divided into three groups according to spinal deformities: normal alignment, round back deformity, whole kyphosis deformity, and were compared about following parameters. Subjects were assessed on one-leg standing time, center of pressure in static standing, maximal strength of hand grip and knee extension, walking speed and body composition. As a result, there were significant correlations between thoracic kyphosis and muscle mass in men, between lunber lordosis and walking speed in women. There were no significant correlations in other physical parameters. In regard to the spinal deformity groups, only one person belonged to whole kyphosis deformity in men, and muscle mass and lower limb strength in round back deformity were lower than normal alignment. In female whole kyphosis deformity, lower limb strength, balance ability and walking speed were lower compared to other all groups. This result suggests the possibility that female whole kyphosis deformity with lunber lordosis is associate with low functional capacity, and muscle mass is related to the spinal deformity in men.