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CHUTIMA WANITCHAYAKONKUN : COMPARISON OF STANDING BALANCE PERFORMANCES BETWEEN HEMIPARETIC PATIENTS AND HEALTHY SUBJECTS. THESIS ADVISORS : CHANUT AKAMANON, M.A. (Comm. Dis. And Sp. Sc.), SOPA PICHAIYOUNGWONGDEE, M.Sc. (Physiology). 193 P. ISBN 974-662-521-7

Balance disorder is a common problem among hemiparetic patients. Since the ability to control balance requires a complex interaction of musculoskeletal, sensorimotor, visual, vestibular and related neural systems, clinicians should assess these patients carefully in order to find out the exact component responsible for balance problem. This study focused on the assessment of standing balance performance in fifteen male hemiparetic patients aged 52-74 years, who had relatively normal sensory ability and independent ambulation. The target sway, % of maximum stability and ankle strategy of sensory organization test (SOT) and movement time, path sway and target sway of dynamic balance test were compared with fifteen male healthy subjects having similar age, weight and height. The parameters of the SOT and dynamic test were obtained from the SMART Balance Master. There was a statistically significant differences between these two groups only on the eyes closed condition of SOT ($p < 0.05$) in which the hemiparetic patients showed increased target sway and reduced % of maximum stability and ankle strategy. This implied that hemiparetic patients were unable to effectively use somatosensory feedback for controlling balance when vision was removed. There were also statistically significant differences in movement time, path sway and target sway of dynamic test between the compared groups ($p < 0.05$). The increased in values found in hemiparetic patients may be due to abnormal voluntary weight shifting in all directions especially the front and back directions of the affected side. Hence, this study verified the disordered components responsible for standing balance problems in the hemiparetic patients who have a relatively normal sensory ability and independently ambulation. The results of this study suggested that physiotherapists should assess the patients carefully and find the exact causes of balance disorder in order to plan appropriate treatment for this patient group.