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Two approaches of transferring technique of scapular hold – ‘neck hold’ and ‘back hold’ were commonly used in The Spastics Association of Hong Kong. From biomechanical viewpoint the two approaches may have different loading on the helper’s lumbar spine. Repeated transfers increase the risk of back injury which may result in accelerating the degeneration process of the lumbar spine. It was therefore, our objective to determine which transferring technique should be preferred. The study was conducted by investigating and comparing EMG activities of the trunk muscles of the helpers during transfer under the two approaches. Muscle activities were studied because the action of muscles was a source of compression and shearing force on spine. It also revealed how much effort the trunk has to pay in order to transfer the client. In this study, 15 subjects were recruited from the staff of the Association who did not report to have injuries of the back or other body parts in the last 2 years. One client with Cerebral Palsy from the Association was selected to be transferred. An EMG system (TELEMG, BTS, Italy), was used to measure the EMG activities of muscles including erector spinae, external and internal oblique muscles, and rectus abdominis from both sides. Isometric maximum voluntary contraction (MVC) test of each muscle was conducted prior the experiment. The subjects were instructed to contract muscles to 200/o, 400/o, 600/o, 80% and 100% of the MVC and the corresponding EMG signals were collected. During the experiment each subject performed 6 transfers: 3 times with ‘back hold’ and 3 times with ‘neck hold’. The sequence of the types of transfer was randomly assigned. EMG signals of each muscle in each transfer were recorded and corrected to an approximated force level using the relationships obtained in the isometric maximum voluntary contraction test. The results were averaged and compared using student t-test.



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