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Comparison of Hong Kong Version of Functional Test for the Hemiplegic Upper Extremity (FTHUE-HK) and Chedoke Arm and Hand Activity Inventory (CAHAI) in Upper Extremity Assessment for Stroke Patients

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Introduction

Stroke affects thousands of people worldwide leaving sufferers with severe disabilities affecting their daily activities. The upper extremity motor deficit is one of the functional challenges in post stroke patients (R.K.Garg, Sharma, Monika, G.G.,2012). In order to have a clear picture on the current and also progressing function of hemiplegic upper limb, standardized upper limb functional assessment is essential (Dromerick et al., 2006). Among various upper limb functional assessments, Hong Kong Version of Functional Test for the Hemiplegic Upper Extremity (FTHUE-HK) is a commonly used in local settings. Psychometric properties of FTHUE-HK had also been established with local subjects in 2004 (Fong et al., 2004). The Chedoke Arm and Hand Activity Inventory (CAHAI) is a validated, upper-limb measure that uses a 7-point quantitative scale in order to assess functional recovery of the arm and hand after a stroke. The purpose of this measure is to evaluate the functional ability of the paretic arm and hand to perform tasks that have been identified as important by individuals following a stroke. It consists of 13 real-life functional tasks that reflect (1) the domains deemed important by survivors of stroke; (2) bilateral activities; (3) non-gender-specific items; (4) the full range of normative movements, pinches, and grasps; and (5) the various stages of motor recovery poststroke. In order to have a preliminary picture on comparing the sensitivity of the two assessments, a pilot investigation was conducted.

Objectives

To compare sensitivity of FTHUE-HK and Chedoke Arm and Hand Activity Inventory on function of hemiplegic upper-extremity resulting from stroke.

Methodology

7 subjects suffered from stroke were recruited. All subjects underwent 3-4 weeks' standard multidisciplinary stroke rehabilitation in Rehabilitation Block of TuenMun Hospital in Hong Kong. Pre and post assessments using FTHUE-HK and Chedoke Arm and Hand Activity Inventory were conducted to each subject. Paired

t-test was adopted to compare sensitivity of both assessments in measuring change in upper limb function.

Result

Results: Amongst the 7 subjects, all demonstrated changes in CAHAI but only 3 in FTHUE-HK. Comparison of pre and post scores showed significant difference in CAHAI ($p < 0.001$) but not for FTHUE-HK ($p > 0.01$). Besides, by looking at the descriptive statistics, subjects with level 7 in FTHUE-HK failed to demonstrate further improvement in upper limb function as a result of ceiling effect whilst Chedoke Arm and Hand Activity Inventory is able to detect further improvement beyond the level indicated by FTHUE-HK. Discussion: This preliminary study echoes the postulates of literature review that Chedoke Arm and Hand Activity Inventory provides a larger scoring scale. Besides, it is more sensitive than FTHUE-HK in detecting changes, especially patients with more advanced upper extremity functioning. Therefore, it supplements the use of FTHUE-HK in upper extremity function assessment. Further studies with more subjects or on other psychometric properties are needed.