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Submitting author: Miss Wing Ki POON

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Development of Hong Kong Version of Chedoke Arm and Hand Activity Inventory-9 (CAHAI-9-HK)

Poon WK(1), Poon WF(1), Lau M(1), Yue SY(1), Mok CTV(2), Hui E(3)

(1)Department of Occupational Therapy, Shatin Hospital, (2)Department of Medicine and Therapeutics, The Chinese University of Hong Kong, (3)Department of Medicine & Geriatrics, Shatin Hospital

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Introduction

Impairment of upper extremity function post-stroke contributes to functional disability. The Chedoke Arm and Hand Activity Inventory (CAHAI) is a functional outcome measure of the recovering paretic upper limb established in Canada. A shortened version with 9 test items (CAHAI-9) was available to allow more efficient data collection. All items are scored using a 7-point quantitative scale, from total assistance to complete independence.

Objectives

This study is to develop the Hong Kong version of CAHAI-9 (CAHAI-9-HK) and examine its validity and reliability in local context.

Methodology

Cross-cultural adaptation procedures consisting of four stages were applied to construct the CAHAI-9-HK. Forward and backward translations were done. Items relevant to local context were adapted and reviewed by expert committee. The pre-final version was pretested and CAHAI-9-HK was finalized. 30 stroke survivors were recruited by convenient sampling to establish the psychometric properties of CAHAI-9-HK. Its inter-rater reliability, test-retest reliability, internal consistency as well as the cross-sectional validity were examined.

Result

Implementation of CAHAI-9-HK took only 10 minutes. Excellent inter-rater reliability (Intraclass correlation coefficient ICC is 0.999, $p < 0.001$), test-retest reliability (ICC=0.996, $p < 0.001$) with high internal consistency ($\alpha = 0.98$) were obtained. CAHAI-9-HK was well correlated with the Hong Kong Version of the Functional Test for the Hemiplegic Upper extremity (FTHUE-HK) ($p = 0.89$, $p < 0.001$) and negatively correlated with Nine Hole Peg Test (NHPT) ($r = -0.95$, $p < 0.001$). CAHAI-9-HK was constructed and it is a highly reliable and valid outcome measure for assessing

paretic upper limb function for stroke survivors in Hong Kong. It is an efficient and feasible assessment for bedside use in ward, rehabilitation department or at home.