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Normative Data of Chopsticks Manipulation of Aged 6-15 Years in Hong Kong

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Introduction

Chopsticks are the primary tools used for eating and the physical movements of control are familiar to Chinese population. Chopsticks manipulation is one of the major fine motor achievements of children to accomplish in the Chinese culture. Children normally begin using chopsticks at about the age of 4.6 years and completely master it at age of 6.7 years old. Occupational therapists, and parents, often regard the use of chopsticks as a developmental milestone during a developmental hand function evaluation. However, no developmental test batteries adopted this manipulation skill into the assessment. In Taiwan, Chang, Chien and Lin (1993) developed a chopsticks manipulation test for adult to determine their functional performance after severe hand injuries. Li-Tsang, Lee and Hung (2006) had demonstrated good test-retest reliability and discriminate children with and without fine motor delay. However, there has been no study report the developmental progression of children aged 6 years old or above in this specific skill by using a standardized assessment.

Objectives

The objective of this study was to establish local normative data assessed by the Test of Chopsticks Manipulation (TCM) in subjects aged 6-15years living in Hong Kong.

Methodology

Subjects without any known developmental disabilities were recruited in the study between June and August 2015 after obtained written consent by their parents. The Test of Chopsticks Manipulation (TCM) was chosen to assess their chopsticks skills. Total time used was recorded after completion. They were asked to perform TCM and two hand strength tests (i.e. Jamar Handgrip Dynamometer test and Pinchometer test) in a random fashion. Questions covering chronological age, hand dominance were also recorded in the one session. Data were then stratified into 20 groups by different ages and gender.

Result

477 subjects (boy = 238; girl = 239) were recruited in this study. The mean seconds to complete the Test of Chopsticks Manipulation (TCM) was 94.32, 66.65, 59.04, 53.95, 51.85, 48.36, 45.80, 42.14, 40.75 and 39.94 for boys aged 6 to 15 years old respectively. The average seconds to complete this task was 80.93, 49.57, 48.13, 47.74, 42.14,, 42.39, 35.79, 35.0, 32.77 and 32.4 for girls aged 6 to 15 years old respectively. The study provides updated reference norms of the Test of Chopsticks Manipulation (TCM) for the children between 6-15 years old in Hong Kong. Finding in this study was also proven that age and gender seemed to affect the performance of chopsticks manipulation of children.