Validation of a Chopsticks Manipulation Test for Screening Chinese Children with Fine Motor Dysfunction

CWP Li-Tsang, HCY Lee, LK Hung

Abstract

Purpose: To study the test-retest reliability, concurrent and discriminant validity of a Chopsticks Manipulation Test for assessing children with fine motor delay. Method: Chopsticks Manipulation Test and Peabody Developmental Motor Scale-Fine Motor scale were administered on 190 children (120 without developmental disabilities and 70 with developmental disabilities). Another 40 children were selected to test for test-retest reliability. Results: (1) Test-retest reliability of the two tests mentioned above was found to be satisfactory (ICC ranged from 0.89 to 0.99). (2) There was a moderate correlation between the two tests (r=0.39, p<0.01). (3) There was significant difference between children with and without developmental disabilities in the Chopsticks Manipulation Test (t-value=-4.71, df=180, p<0.05). (4) Age and gender are factors affecting the Chopsticks Manipulation Test performance. Conclusion: The Chopsticks Manipulation Test was found to have good test-retest reliability. It is easy to administer in different clinical settings and the children are familiar with the equipment used in the test. It can also discriminate children with and without fine motor delay. Age and gender seemed to affect the performance of chopsticks manipulation of children.

Key words Child; Developmental disabilities; Eating utensils; Motor skills

Introduction

The dexterous grasps of hands enable mankind to master their living environments through effective manipulation of objects in different shapes and tools for various functions. Chopsticks manipulation is one of the major fine motor achievements of children to accomplish in the Chinese culture. Using a pair of chopsticks in dining is also regarded as an important part of social life within a family or a social context. It also represented the users’ manner and respect towards the others. Children are encouraged to use chopsticks to feed themselves as early as three to four years of age. A child’s ability to use a pair of chopsticks skillfully is affected by many factors such as age, sex and surrounding environment like family and social expectations. The hand development of children may be hindered by developmental disabilities such as developmental co-ordination disorders, cerebral palsy, congenital anomalies, mental handicap or developmental delay. Parents often regard the use of chopsticks as a developmental milestone for their children though no developmental test batteries adopted this task into the assessment. Being the major and primary eating utensil in the Asian population, its manipulation does have an impact on the development of eating skills. Early screening and assessment of children with functional disabilities are essential such that children and parents could start the