ABSTRACT

Purpose: The present study is part of a larger longitudinal study about metalinguistic and working memory interventions for Hong Kong dyslexic children. For this study, the post-test data (T2) and the follow-up test data (T3) were used to examine which cognitive measures could predict reading gains – the score differences between T2 and T3 in Chinese word reading accuracy and fluency, and those of English word reading fluency across a 2-year interval in primary school children with Developmental Dyslexia in Hong Kong.

Method: 31 participants (19 boys and 12 girls; 9 to 11 years old) completed an intelligence test, word reading accuracy and fluency tests in Chinese, and word reading fluency test in English. For the cognitive measures, they completed, in both Chinese and English, the orthographic tests, phonological tests, working memory tests and rapid naming tests. Pearson's correlations and hierarchical multiple regressions were conducted to test the hypotheses using reading gains and to explore prediction of reading skills at T3.

Results: There was a significant difference regarding the correlations between rapid digit naming and word reading fluency improvement in Chinese (r=.393) and English (r=-.402). It means that faster naming speed at T2 was related to larger gains in reading fluency in English, but slower naming speed at T2 was related to larger gains in reading fluency in Chinese. The reading gains in English word reading fluency was significantly correlated with non-word working memory (r_s=.449) and phonological awareness (r_s=.458). For the regression analyses, the measure of rapid digit naming in English significantly predicted the reading gains in English word reading fluency (R^2 change =.122) and the performance in English word reading fluency at T3 (R^2 change = .335) after controlling the effects of training, age and IQ.

Conclusion: The results demonstrated that the non-word working memory, phonological awareness skills, and rapid digit naming were related to the improvement in English word reading fluency, though the results were not significant after controlling the effects of training, age and IQ. Further studies could study the role of rapid digit naming, which could predict the reading gains and performance in English word reading fluency at T3, as the underlying mechanism of this measure has not been determined.