

International Clinical Phonetics and Linguistics Association

2016 Abstract Proposal

Understanding the relationship between polysyllable accuracy, receptive vocabulary, and phonological awareness in preschool children with speech sound disorders

Preschoolers with a speech sound disorders (SSD) have an increased risk of reading difficulties, with between 30% and 77% of school-age children with SSD finding literacy challenging (Anthony, Aghara, Dunkelberger, et al., 2011). Polysyllables, words of three or more syllables, can be analysed using the Word-Level Analysis of Polysyllables (WAP; Masso, 2015). This analysis tool helps identify the presence of seven different categories of error and the extent of a child's polysyllable maturity. Previous research suggests that the presence of atypical speech sound errors may account for variance in reading outcomes in children with SSD (Preston, Hull & Edwards, 2013; Rvachew, Chiang & Evans, 2007). Polysyllable accuracy, based on a combined measure of children's repetition of polysyllabic real and nonwords, has also been associated with poorer reading outcomes (Larvee & Catts, 1999). The possible link between children's polysyllabic real word accuracy and emergent literacy skills requires further investigation. The aim of the current research was to determine whether preschool children who demonstrated different levels of polysyllable accuracy (based on a statistical, hierarchical cluster analysis) demonstrate significantly different receptive vocabulary and phonological awareness skills. Participants were 93 children (aged 4;0-5;5) with phonologically-based SSD from the Sound Start Study. They completed the Polysyllable Preschool Test (POP; Baker, 2013), the Peabody Picture Vocabulary Test – Fourth Edition (PPVT-4; Dunn & Dunn, 2007) and the Comprehensive Test of Phonological Processing – Second Edition (CTOPP-2; Wagner et al., 2013). Polysyllable analysis was completed using the WAP (Masso, 2015) and a statistical hierarchical cluster analysis was completed based on the frequency of children's deletion, timing and phonotactic errors. ANCOVA analysis (controlling for age and socio-economic status) were conducted to examine whether clusters were significantly different from each other on receptive vocabulary and phonological awareness tasks. Hierarchical cluster analysis using Ward's method was conducted using four polysyllable variables: consonant deletion, vowel deletion, alterations in phonotactics and alterations in timing. The optimal number of clusters for the dataset ($n = 2$) was identified using SAS 9.1 software (SAS Institute, Inc. Cary, NC, 2004). One-way ANCOVA analysis highlighted that there was a significant difference in receptive vocabulary between the two clusters. There was also a significant difference in three of four measures of phonological awareness between the two clusters: elision, blending words, and the composite of all phonological awareness scores. One measure of phonological awareness, sound matching, was not significantly different between the two clusters. Preschool children with lower polysyllable accuracy demonstrated poorer receptive vocabulary, elision, word blending, and overall phonological awareness skills. This analysis demonstrates that a measure of polysyllabic real word accuracy may help identify preschool children with SSD who may be at risk of future literacy difficulties.