Acquisition profiles of syllable-initial consonants in Mandarin-speaking children with cochlear implants

林永松

Lin YS;Peng SC

摘要

Abstract

Objectives—To examine the production and discrimination skills of Mandarin initial-consonant syllables in children with cochlear implants (CIs), as a function of both age at implantation and length of CI experience. In addition, we also aimed to evaluate the relationship between these children's perception and production profiles. Material and Methods—Thirty prelingually deaf children aged between 6 years 0 months and 12 years 6 months who received their implants between the ages of 2 years 3 months and 10 years 3 months participated. The ability of the children to produce the 21 Mandarin initial-consonant syllables were elicited using a set of 105 pictures. In addition, the 21 consonants were arranged into 16 minimal pairs to determine the children's discrimination skills by asking them to accurately identify the target consonants. Results—The children's mean accurate consonant production score was 57.9% (SD 19.5%) and the average correct consonant discrimination score was 76.67% (SD 11.18%), which was significantly higher than the 50% chance level [$t(29)=13.07$; $p<0.001$]. There were significant negative correlations between the performance level of consonant production and both age at implantation and length of CI experience. Children who received their implants at a younger age (<6 years) tended to demonstrate an acquisition profile similar to that of children with normal hearing, i.e. the production and perception skills tended toward near-synchronization, and the mastery of production slightly preceded that of perception. Conclusion—This report demonstrates that early implantation is associated with a near-synchronous acquisition profile of the production and discrimination of Mandarin consonants, which is similar to that of normal-hearing children at a younger age. Specifically, early implantation can promote children's production skills of Mandarin initial-consonant syllables.