DEVELOPMENT OF A MANDARIN EXPRESSIVE AND RECEPTIVE VOCABULARY TEST FOR CHILDREN USING COCHLEAR IMPLANTS

Lena L. N. Wong, Lu Xiaopan, Anita M. Y. Wong, Xin Xi

University of Hong Kong

Hongkong

Introduction: Cochlear implants provide children with profound hearing loss access to sounds and improve their speech perception, speech production and language skills. Outcomes on language development are useful for counseling and in planning habilitation programs. However, such research in Mainland China is scarce due to a lack of standardized language measurement materials. This study aims at developing a Mandarin Expressive and Receptive Vocabulary Test (MERVT) for Mandarin-speaking children aged 1;6 to 3;11 years.

Methodology: In phase 1, items were selected from corpus, story books and TV programs for Mandarin-speaking preschool children. In phase 2, items were rated for age-appropriateness by kindergarten teachers. In phase 3, responses from 102 normal-hearing preschool children were used for item analysis and identifying items with appropriate difficulty and discriminatory ability. In phase 4, 245 normal-hearing children were recruited to establish norms and evaluate psychometric properties of the test.

Results: 161 items with difficulty from 0.15 to 0.851 and item discrimination greater than 0.251 were ranked in ascending difficulty to form the final test. The results of 245 normal-hearing children show that expressive and receptive vocabulary abilities grow with age. Test-retest reliabilities in the expressive and receptive vocabulary test are 0.911 and 0.886 respectively, measured using Pearson correlation coefficient between administrations of the MERVT two weeks apart. Scores from the expressive and receptive subtests in the MERVT correlate with scores obtained on the Putonghua version of the language subtest of the Gesell Developmental Scale (0.38–0.59 and 0.45–0.62 respectively), suggesting good concurrent validity.

Discussion: Items with a good range of difficulty and sufficient discrimination power were identified. Item selection from language materials for preschool children, rating by kindergarten teachers and item analysis based on response of target children provided evidence of content validity. The gradual increase in mean subtest scores with age and the correlation with the language subtest of the Gesell Developmental Scale provided evidence of construct validity. With strong content validity and construct validity, the test could be used for evaluating vocabulary development in young children, including those with cochlear implants.