

## THE DEVELOPMENT OF RECORDED TEST ITEMS FOR MANDARIN SPEECH PERCEPTION TEST MATERIALS IN MALAYSIA

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### ABSTRACT

**Introduction:** Speech perception test is widely used by audiologists to evaluate auditory processing skills and as a tool to document the habilitation program outcome. Speech perception tests developed in China may not suit the local needs due to the presence of unsuitable test items resulted from cultural differences. In Malaysia, the scarcity of speech perception test in the Mandarin language has prompted researchers to begin developing such tests. This research is a continuum from a previous study that developed a Mandarin paediatric speech perception test materials based on the Malaysian norms. The aim of this study was to develop digitally recorded items for the test.

**Methods:** A total of 480 words (240 words X 2 talkers) were digitally recorded from two native Mandarin talkers of different gender with Malaysian Mandarin accent. These words consisted of 57 monosyllabic, 20 disyllabic, and 3 trisyllabic words; each word was repeated three times during the recording. These words were subjected to offline acoustic analysis by using the Audacity and PRAAT software. Visual and auditory inspections were conducted on the waveform and spectrogram of each word to identify any deviation of pitch contour and the presence of unintended noise or click. This was followed by a sound quality rating of the selected tokens by two native Mandarin-speaking clinicians. Tokens that received “good” ratings were selected for further validation.

**Results:** The preliminary results revealed that 94 out of the 480 words were excluded after acoustic analysis. From the remaining words, 384 words received good quality ratings and were subjected for validation by normal-hearing participants.

**Conclusions:** Digitally recorded test items were created to develop a Malaysian Mandarin speech perception test for the paediatric population. Ongoing research includes validating the test items among normal hearing subjects. A future research will take place for collecting normative data on this test.

**Keywords:** Mandarin, Speech perception test, Digitally recorded test, Acoustic analysis

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