

PR5: The Development of Mandarin Fricative-Affricate Nonsense Word Test: Part I. Quality Judgement and Acoustic Analysis

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ABSTRACT

Introduction: Individuals with hearing loss often have difficulty perceiving high-frequency sounds such as fricatives and affricates. Fortunately, this problem can be restored with today's new hearing technology known as frequency lowering. To validate this technology, a speech test that emphasizes the fricatives and affricates is recommended. As of yet, there have been no other studies of using Mandarin which is rich in fricatives and affricates as speech materials in Malaysia. Therefore, the aim of this study was to select the best exemplar for the development of Mandarin Fricative-Affricate Nonsense Word Test. **Method:** Subjective quality ratings and spectrographic analysis were performed on recordings of 180 vowel-consonants-vowel (VCV) syllables spoken by two native Mandarin speakers. Subjective quality ratings were performed by two phonetically-trained native Mandarin listeners using a 5-point rating scale. Spectrographic analysis was performed to determine VCV syllables that are free of idiosyncrasies, abnormal pronunciation, and intonation. **Results:** A total of 115 (63.9%) VCV syllables (61 of female speaker; 54 of male speaker) received a "good" or "very good" subjective ratings. Of these syllables, 105 (91.3%) fulfilled at least one of the acoustic analysis criteria. For each of the 6 consonants presented with 3 vowel contexts, at least one exemplar fulfilled both subjective & objective criteria. **Conclusion:** Objective and subjective evaluations of the recorded speech samples are important to select the best exemplars for developing a speech test. Future directions include identification testing to select one best exemplar for each consonant and measuring performance-intensity function of normal-hearing individuals for normative data.

KEY WORDS:

Mandarin, acoustic analysis, fricatives, affricates, speech test

PR6: Preliminary Study-Is Postural Instability in Type 2 Diabetes Related to Vestibular (Dys) Function?

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ABSTRACT

Introduction: Diabetes mellitus (DM) can lead to complications including postural instability that may be related to impaired function of vestibular system. This study aims to measure vestibular function in adults diagnosed with Type 2 DM for < 5 years and to compare their findings with healthy age-matched group. **Method:** This experimental cross-sectional study, using purposive sampling method, involved eight patients, aged 36.8±11.4 years and normal subjects, aged 34.6±11.0 years. Vestibular-end organs i.e. saccule and utricle were assessed using cervical and ocular vestibular evoked myogenic potential (cVEMP and oVEMP) respectively and video head impulse test (vHIT) to assess the three semi-circular canals (SCCs). Static postural stability was assessed using force plate in four conditions: stand on firm or foam surface with eyes opened or closed. Dynamic stability was examined using Time Up and Go (TUG) and Functional Gait Assessment (FGA). **Results:** All vestibular tests were not significantly different between groups. However descriptively reduced amplitudes for both VEMPs were noted in DM patients. For postural stability tests, the mean TUG score was significantly higher (i.e. walked slower) and the mean FGA score was poorer in patients (p<0.05). **Conclusion:** Functionally, patients walked significantly slower and less stable, which may be related to poor otolith functions. These may have explained the observed trends of abnormal VEMPs' amplitudes in DM patients. However, this study is underpowered, and bigger number of patients needs to be assessed to confirm these findings.

KEY WORDS:

Diabetes mellitus, postural stability, vestibular assessments