NORMATIVE SPEECH RECOGNITION THRESHOLD IN NOISE (SRTn) FOR MALAY MATRIX SENTENCE TEST (MMST) IN OPEN-SET FORMAT

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ABSTRACT

Introduction: Speech perception ability in noise is a realistic key indicator of a person's potential to communicate in real-world situations. The Malay Matrix Sentence Test (MMST) is able to provide information about a listener's speech perception ability in noise. It can also be implemented in either open or closed-set test format. The main purpose of this study was to obtain normative speech recognition threshold in noise (SRTn) for MMST in the open-set test format.

Methods: Fifteen lists including 1 training list containing 20 sentences in each list were presented to 22 normal hearing listeners (Mean: 6.58 ± 6.61dB HL) aged below 25 years old. The MMST were presented monaurally at a fixed noise level of 65dB SPL. An open-set presentation mode was used in which the participants were requested to repeat the sentences verbally.

Results: Mean SRTn for MMST in open-set format was -8.34 ± 0.87dB SNR with slope function of 17.20 ± 9.62%/dB. A significant training effect of 2.37dB was observed between the training and initial test list. Repeated measures ANOVA showed no significant differences between lists where, $F(14, 8) = 0.41$, $p = 0.93$.

Conclusion: This study indicated that homogeneity between lists was comparable which is appropriate for use of repeated measurements. The SRTn of open-set format is 1.77 dB higher than the closed-set test format (Mean: -10.1 ± 0.2dB SNR) which is consistent with previous studies. This is expected as the listener's option to respond are limited in the open-set test compared to the closed-set test format.

Keywords: matrix sentence test, Malay matrix sentence test, speech recognition threshold, speech-in-noise test, open-set

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