EVALUATING SPEECH RECOGNITION THRESHOLD (SRTn) OF THE MALAY DIGIT TRIPLET TEST (MDTT) IN DOMESTIC USAGE

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ABSTRACT

Introduction: Online self-screening test using speech audiometry in noise offers a new approach to screen for hearing disability from homes and facilitate in creating hearing awareness to the general public. Therefore, the purpose of this study is to evaluate the speech recognition threshold (SRTn) of the Malay Digit Triplet Test (MDTT) in domestic usage.

Method: Thirty normal hearing participants (PTA Average (0.25-8 KHz) of 5.22 ± 3.63 dB HL) aged below 30 years-old were tested using the MDTT in controlled and uncontrolled settings. Each participant was tested monaurally in two test environments (sound treated (*ST*) and regular room (*RR*)) using headphones (*HP*) and earphones (*EP*); and with a known external (*ES*) and unknown internal sound cards (*IS*). This gave each participant eight different listening variations in which the SRTn were measured.

Results: Average SRTn for the eight listening settings were -11.03 ± 0.79 dB SNR for *ST-I-HP-I-IS*; -10.89 ± 0.80 dB SNR for *ST-I-EP-I-IS*; -10.79 ± 0.55 dB SNR for *ST-I-HP-I-ES*; -10.81 ± 0.74 dB SNR for *ST-I-EP-I-ES*; -11.28 ± 0.65 dB SNR for *RR-I-HP-I-IS*; -10.94 ± 0.86 dB SNR for *RR-I-EP-I-IS*; -10.91 ± 0.67dB SNR for *RR-I-HP-I-ES*; and -10.89 ± 0.72 dB SNR for *RR-I-EP-I-ES*. Repeated Measure ANOVA revealed no significant differences in SRTn for all eight MDTT listening variations where, [$F(7, 203) = 1.64$, $p > 0.05$].

Conclusions: The monaural presentation of signal and noise, and presentation of masking noise level higher than most domestic background noise at 65 dB SPL allowed the MDTT to be robust against external factors. This shows MDTT's potential as a self-administered internet hearing screening test.

Keywords: Malay digit triplet test (MDTT), Monaural, Speech Reception Threshold in Noise (SRTn), Transducer, Sound card, Test environment

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