

Psychometrically Equivalent Fante Speech Recognition Threshold Materials by a Female Talker

Abstract

Purpose:

This study aimed to create and evaluate digitally recorded speech materials for speech recognition threshold (SRT) testing among children and adults in Fante. Fifty-one (51) familiar trisyllabic words were chosen from a list of 107 widely used trisyllabic Fante words. They were digitally captured and edited to create the same root mean square as a 1-kHz calibration tone.

Method:

The study used a three-phase cross-sectional study method. Twenty native Fante speakers with normal hearing thresholds were selected at random for listener evaluation. For each of the words, the researchers used logistic regression to measure the slope, intercepts, and psychometric function slope at 50% and from 20% to 80%. In the study, the intensity of each word was modified digitally, so that the threshold at 50% of each word was equal to the mean pure-tone average (PTA) of the participants to increase the homogeneity of the thresholds of the selected words.

Results:

A final list of 25 familiar homogenous words with the same tone patterns of slopes greater than 7%/dB was finally selected and recorded for speech audiometry in Fante.

Conclusions:

Psychometrically equivalent trisyllabic words in Fante were successfully developed and evaluated for SRT testing in Ghana. There is a need for the development of speech audiometry materials in other Ghanaian languages.