

Vowel error patterns in individuals with dysarthria secondary to ALS

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The current study examines vowel error patterns (perceptual data) in individuals with dysarthria secondary to ALS. Previous studies on vowel error patterns among individuals with ALS either examine few vowel pairs (target vowel-perceived vowel) or do not control for consonant context. These findings suggest potential articulatory dysfunction that impacts speech intelligibility, as well as listener trainings. This study examined vowel error patterns using 10 monophthongs within a controlled consonant context. To obtain a comprehensive view, 88 misperceived vowel pairs were examined based on the target and perceived vowel characteristics, as well as the direction of the errors. Twenty-two individuals with ALS and 22 controls produced 10 monophthongs in an /h/-vowel-/d/ context. One hundred and thirty five listeners completed a forced-choice vowel intelligibility test. The results showed different error patterns by severity of dysarthria. Individuals with severe-to-profound dysarthria showed a vowel error pattern of vowels misclassified to the lower vowel category, as well as misperception to front vowels. Individuals with mild-to-moderate dysarthria showed frequent misperception to noncorner vowels. The findings indicate that the nature of vowel error changes across the severity of dysarthria as the error patterns are different by the groups. Clinical implications will be discussed.