

Phonological inconsistency in typically developing and phonologically disordered bidialectal Cypriot-Greek speaking children

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Abstract

Background: Phonological Inconsistency (PI) refers to variable productions of the same word- target across repeated production attempts. PI is a clinical marker underlying differential diagnosis thus informing phonological taxonomy. While extensively studied in languages such as English, examination remains sparse in understudied dialects, including Cypriot Greek. Within a cross-linguistic framework, sparsity of empirical data limits theoretical understanding and compromises clinical assessment procedures.

Aims: The aim of the study was to: (a) measure the presence of inconsistency in phonologically disordered populations, (b) compare performances between the typical and disorder groups and (c) map error patterns. Given that phonological inconsistency in disordered populations stems from unstable or underspecified phonological representations as opposed to solely articulatory deficits, it was hypothesized that children with phonological disorders would exhibit significantly greater variability, thus greater inconsistency measures in repeated word productions as compared to their typically developing peers.

Method: Participants included 11 children with a diagnosis of SSD and 10 typically developing peers ages 4;0-7;0 years. All subjects were recruited from local kindergarten and primary schools across different geographical locations in Cyprus. Forty experimental stimuli included disyllabic, trisyllabic and multisyllabic words depicted on pictures were implemented. Participants were prompted to name each stimulus three times non-consecutively during a 60- minute experimental session.

Results: Responses were scored on the basis of a binary system with 0 indicating no-inconsistency and 1 corresponding to the presence of inconsistency. An independent-samples Welch's t-test was conducted to examine and compare group performance. The analysis revealed a statistically significant difference between the experimental group (Mean = 70%; SD= 18) versus the control group (M = 3%; SD = 1.2%), $t(df17)=12.0, p<.001$. The mean difference between groups was 0.698 (SE = 0.0583). The effect size was large, $d=5.51$. Within the SSD group, error patterns included variable misarticulations, segmental and unstressed syllable omissions, prosodic and stress shifts and regressive assimilations.

Conclusion: Inconsistency as a clinical measure provides insight into the typology of errors and speech production difficulties associated with speech sound disorder (SSD) profiles and successfully differentiated the two groups examined. The findings are consistent with patterns reported in English-speaking children with SSD, thereby underscoring the cross-linguistic relevance of phonological inconsistency. Nevertheless, several limitations may have influenced the results, including group heterogeneity in terms of age and gender, which may have favored the stronger performance observed in the typically developing (TD) group, as it consisted of older children and included a higher proportion of female participants. Overall, the present findings should be considered preliminary and interpreted with caution.