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Frequency of Consonant Production Errors in Children with Speech Sound Disorder: A Retrospective-Descriptive Study

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Abstract : Speech sound disorders (SSD) encompass the major concern in younger population of India with highest prevalence rate among the speech disorders. Children with SSD if not identified and rehabilitated at the earliest, are at risk for academic difficulties. This necessitates early identification using screening tools assessing the frequently misarticulated speech sounds. The literature on frequently misarticulated speech sounds is ample in English and other western languages targeting individuals with various communication disorders. Articulation is language specific, and there are limited studies reporting the same in Kannada, a Dravidian Language. Hence, the present study aimed to identify the frequently misarticulated consonants in Kannada and also to examine the error type. A retrospective, descriptive study was carried out using secondary data analysis of 41 participants (34-phonetic type and 7-phonemic type) with SSD in the age range 3-to 12-years. All the consonants of Kannada were analyzed by considering three words for each speech sound from the Kannada Diagnostic Photo Articulation test (KDPAT). Picture naming task was carried out, and responses were audio recorded. The recorded data were transcribed using IPA 2018 broad transcription. A criterion of 2/3 or 3/3 error productions was set to consider the speech sound to be an error. Number of error productions was calculated for each consonant in each participant. Then, the percentage of participants meeting the criteria were documented for each consonant to identify the frequently misarticulated speech sound. Overall results indicated that velar /k/ (48.78%) and /g/ (43.90%) were frequently misarticulated followed by voiced retroflex /ɖ/ (36.58%) and trill /r/ (36.58%). The lateral retroflex /ɭ/ was misarticulated by 31.70% of the children with SSD. Dentals (/t/, /n/), bilabials (/p/, /b/, /m/) and labiodental /v/ were produced correctly by all the participants. The highly misarticulated velars /k/ and /g/ were frequently substituted by dentals /t/ and /d/ respectively or omitted. Participants with SSD-phonemic type had multiple substitutions for one speech sound whereas, SSD-phonetic type had consistent single sound substitutions. Intra- and inter-judge reliability for 10% of the data using Cronbach's Alpha revealed good reliability ($0.8 \leq \alpha < 0.9$). Analyzing a larger sample by replicating such studies will validate the present study results.

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