Abstract

Differential Diagnosis of Speech Sound Disorders in Danish-speaking Children

Children with speech sound disorders (SSD) are a heterogeneous group in terms of severity, underlying causes, speech characteristics and response to intervention. The correct identification and remediation of SSD is of particular importance since children with persisting SSD are placed at risk socially, academically and vocationally (McCormack et al., 2009). Thus, speech analysis should accurately detect whether a child has SSD or not, and should furthermore provide information about the type of disorder present. The classification into distinct subgroups of SSD should support clinicians in selecting the right intervention approach to resolve the SSD.

Different quantitative and qualitative measurements are currently used to subgroup children with SSD. A quantitative method of classifying children is by accuracy of their productions. According to this approach, the severity of children's SSD is classified by calculating the percentage of correctly produced consonants (i.e. percentage consonants correct, PCC-A) (Shriberg et al., 1997). Alternatively, a qualitative approach seeks to ascertain which types of phonological processes are present in children's speech, i.e. developmental or idiosyncratic processes, which aids in deciding whether children are typical, delayed or deviant in their speech development (Dodd, 2005). To date very little is known about SSD in Danish-speaking children, both regarding accuracy of productions, as well as phonological processes and differential diagnosis. Therefor, the aim of the study was to investigate the speech of children with SSD by means of accuracy of phoneme production as well as types of the phonological processes in a Danish-speaking population. Further, the applicability of the two different classification approaches was investigated.

A total of 211 Danish-speaking children aged 2;6-6;7 years with suspected SSD participated in the study. The children were assessed with a picture-naming test (Clausen, 2014). An inconsistency test was administered in case a child did not exhibit a consistent pattern profile. On the basis of the children's transcripts, phonological process and PCC-A, as well as inconsistency of productions measures were administered and compared to a normative sample (Clausen & Fox-Boyer, in preparation).

Based on a qualitative measure (phonological processes), results indicated that all children differed from the normative sample by means of age and types of processes. Additionally, all children could be classified according to the subgroups of Dodd's differential diagnosis model. The different subgroups showed distinct different speech profiles in terms of phonetic and phonological error patterns as well as inconsistency of productions. In contrast, when applying a quantitative analysis, 33.65 % of the children did not differ in their PCC-A scores from typically developing children matched on age. Only those children with severe forms of SSD could be identified with the quantitative measure. Hence, differential diagnosis of children with SSD and clinical decision-making about the need for intervention should not be based on the quantitative approach only. A qualitative classification approach is needed for a distinct subgrouping of children with SSD whereas PCC-A can be used as additional information about the severity of the SSD.

Keywords: speech disorders, Danish, classification

Abstract

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