

Internationally adopted children with unilateral cleft lip and palate

– longitudinal perspectives on speech production and language ability

Akademisk avhandling

Som för avläggande av medicine doktorsexamen vid Sahlgrenska akademien, Göteborgs universitet kommer att offentligen försvaras i hörsal Arvid Carlsson, Academicum, Medicinaregatan 3, fredag den 5 juni 2020, klockan 13.00

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Avhandlingen baseras på följande delarbeten

- I. Larsson, AK., Schölin, J., Mark, H., Jönsson, R., & Persson, C. Speech production in 3-year-old internationally adopted children with unilateral cleft lip and palate. *International Journal of Language and Communication Disorders* 2017; 52: 626–636.
- II. Larsson, AK., Miniscalco, C., Mark, H., Sahlsten Schölin, J., Jönsson, R., & Persson, C. Internationally adopted children with unilateral cleft lip and palate – consonant proficiency and perceived velopharyngeal competence at the age of 5. *Cleft Palate Craniofacial Journal* 2020; 17 Jan. E-pub ahead of print.
- III. Larsson, AK., Miniscalco, C., Mark, H., Jönsson, R., & Persson, C. Persisting speech errors and poor expressive language ability at school age – a longitudinal study of internationally adopted children with cleft lip and palate. *Manuscript*.
- IV. Larsson, AK., Persson, C., Klintö, K., & Miniscalco, C. Internationally adopted children with and without a cleft lip and palate showed no differences in language ability at school-age. *Acta Paediatrica* 2020; 11 April. E-pub ahead of print.

**SAHLGRENKA AKADEMIN
INSTITUTIONEN FÖR NEUROVETENSKAP OCH
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Abstract

Many children with cleft lip and palate have been adopted to Sweden. Most had had no palatal closure performed in their native countries and received their first palatal surgery in Sweden while acquiring a new first language. The main aim of this thesis was to investigate speech production (i.e. consonant proficiency, consonant errors and velopharyngeal competence) and language ability at school age in internationally adopted children from China with unilateral cleft lip and palate. The thesis included data based on phonetic transcriptions and perceptual ratings of audio-recorded standardised routine speech assessments analysed by blinded raters (Studies I–III), standardised speech and language assessments (Study IV) and parental ratings (Studies III and IV). In *Study I*, speech production was investigated in 14 children at age 3 years and compared with a group of non-adopted children with the same cleft type. Results showed that the internationally adopted children performed significantly lower than the non-adopted children on consonant proficiency and on perceived velopharyngeal competence. In *Study II*, 25 internationally adopted children were assessed at age 5 years and compared with non-adopted children with the same cleft type. Results showed that the internationally adopted children had significantly fewer correct consonants and more restricted consonant inventories than the non-adopted children. A high proportion (52%) had an incompetent velopharyngeal function, although they did not differ significantly from their non-adopted peers. *Study III* longitudinally investigated speech production in 17 children between the ages of 3 and 7–8 years. Additionally, relationships between speech production and expressive language at age 7–8 years were studied. Significant progress in consonant proficiency and velopharyngeal competence from age 3 years onwards was found. However, at age 7–8 years more than 80% of the children had a consonant proficiency score at least 2 SD below the age-specific norms. Additionally, the children exhibited difficulties on measures of expressive language. In *Study IV*, receptive and expressive language ability was investigated in 27 internationally adopted children at age 7–8 years. Comparisons were made with a group of internationally adopted children without cleft lip and palate. The only variable that significantly differed between groups was speech ability, where the children with cleft lip and palate scored lower according to both tests and parental ratings. However, both groups scored low on expressive language ability compared with test norms. In conclusion, internationally adopted children with cleft lip and palate develop their speech-production ability considerably despite having later palatal repair than non-adopted peers. However, many still have speech difficulties at school age. Many of the internationally adopted children, regardless of whether they had a cleft lip and palate, presented with poor expressive language ability at age 7–8 years, and a risk of delayed language development many years after adoption was found in many children.

Keywords: Internationally adopted, cleft lip and palate, speech production, language ability