

Speech accuracy and intelligibility of bilingual children with cochlear implants

Pauline van der Straten Waillet, Kathryn Crowe, Brigitte Charlier & Cécile Colin

Université Libre de Bruxelles; Centre Comprendre et Parler ; University of Iceland ; Charles Sturt University.

A growing proportion of children with hearing loss are acquiring more than one spoken language (Cannon et al., 2016). However, the speech and language outcomes of children with cochlear implants (CI) who use two or more spoken languages are poorly documented (Crowe, 2018). Moreover, available evidence mostly describes speech skills of bilingual children with CI who speak English in addition to their home language. This study aimed to describe the speech accuracy and intelligibility of bilingual children with CI in a context with French as the societal language.

Four groups of participants aged 4-11 years were matched on their receptive lexical level in French: 15 bilinguals with CI, 14 monolinguals with CI, 20 bilinguals with normal hearing (NH), 20 monolinguals with NH. All children were attending a French-speaking school. Children in the monolingual groups were exposed to only French at home and children in the bilingual groups were exposed to at least one language other than French at home (CI group: ten home languages; NH group: 15 home languages). Using a picture-naming task in French, the percentage of consonant correct (PCC) and the percentage of vowel correct (PVC) children produced were calculated. Parents rated their child's intelligibility in French and in their home language with the Intelligibility in Context Scale (McLeod et al., 2012).

Bayesian regressions showed that bilingual and monolingual children with CI seemed to have comparable speech accuracy (PCC and PVC) and intelligibility in French. In addition, children with CI showed a different pattern of speech accuracy when they were bilingual (impact on PCC) and monolingual (impact on PVC). Overall, most children with CI had accurate and intelligible speech in French, but few bilingual children with CI were highly intelligible in their home language. This work contributes to the evidence on spoken bilingualism in children with CI by showing that using two or more spoken languages does not negatively impact children's speech production outcomes in the language of the wider community. Due to high heterogeneity in the sample, most comparisons were associated with inconclusive evidence. More research is needed to find stronger evidence.

References

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