

The Helsinki Longitudinal SLI study (HelSLI)

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Background

Developmental language disorder (DLD, formerly called also specific language impairment, SLI) is a common developmental disorder comprising the largest disability group in pre-school children. Diminishing its long-term negative effects would have both individual as well as marked socio-economic benefits.

Aims

The main question of the Helsinki Longitudinal SLI Study (HelSLI) was: What biological, cognitive, and psychosocial aspects associate with the heterogenous profile, response to rehabilitation, and developmental changes of language difficulties. Cross-sectional questions investigate how language difficulties cluster at the biological (i.e., genetic and neurophysiological) and cognitive (i.e., neuropsychological and speech and language) levels of analysis and how various risk factors, such as, comorbidity, bilingualism, and psychosocial characteristics moderate the profile. All these questions are also investigated longitudinally, in order to inspect the roles of development and rehabilitation (i.e., interventions).

Material and methods

The HelSLI study consists of five sub-projects: 1) HelSLI-EEG concentrates on the EEG in developmental language difficulties. 2) HelSLI-bilingual investigates the characteristics of DLD in bilingual children. 3) HelSLI-psychosocial investigates how the child's psychological characteristics and environment modulate developmental language difficulties and how DLD affects the well-being of a child. 4) HelSLI-cognitive focuses on the non-linguistic correlates of developmental language difficulties with experimental methods. A later fifth subproject, HelSLI-genetic, targets the genetic underpinnings of DLD. Participants with developmental language difficulties were the consecutive children admitted to the Audiophoniatic Ward for Children, Helsinki University Hospital, Finland, during years 2013-2015 (n = 227, aged 3 to 6 years). 80 bilingual and 80 monolingual control children have been recruited from kindergartens of the metropolitan area of Helsinki during 2014-2019.

Results and discussion

Together, the results of the HelSLI study will enable early identification of difficulties, before the school age, and better targeted rehabilitation (i.e., service systems) for the disadvantaged DLD children and for the possibly double disadvantaged bilingual DLD children. This kind of early intervention in the promotion of health and equality and prevention of marginalization is pivotal, since it has been shown that funding targeted at supporting learning during the early years of education results in better outcome than that provided during the later years.

The most common way to provide speech-language therapy in this sample was once a week for 45 minutes. Before entering the study, the children with DLD had received an average of 20 therapy sessions per year in primary healthcare with multiple goals for the intervention. Achieving these was monitored by observing the child and discussions with the parents. In most cases, the goals were achieved. Results in bilingual children with immigrant background acquiring Finnish as a second language early on are referring to the need for longitudinal perspective for more reliable diagnosis of DLD when comparing the performance to monolinguals. However, when comparing second language performance in children whose development is alarming and who are sent to assessments in the secondary health care to typically developing bilinguals, these two groups can be differentiated in cross-sectional analysis if exposure and age are taken into account to make the groups comparable. Results suggest also that parent interviews/questionnaires can be used to probe the risk for DLD based on first language acquisition.

Key words: SLI, DLD, language, rehabilitation, development, EEG, MMN, bilingual, monolingual, comorbidity, psychosocial, temperament, mother-child, questionnaires, non-linguistic, cognitive, experimental.

References

- Hentilä, H. (2017). Suomennetun ALDeQ-kyselylomakkeen toimivuus peräkkäisesti kaksikielisten lasten kielellisen vaikeuden tunnistamisessa. Master's thesis, University of Oulu. <http://jultika.oulu.fi/Record/nbnfioulu-201709212910>
- Kärjä, S. (2016). Kuntoutuskäytännöt kielellisessä erityisvaikeudessa. Master's thesis, University of Oulu. <http://jultika.oulu.fi/Search/Results?lookfor=kärjä+suvi&limit=20&sort=relevance>
- Laasonen, M., Smolander, S., Lahti-Nuuttila, P., Leminen, M., Lajunen, H. R., Heinonen, K., ... & Leppänen, P. H. (2018). Understanding developmental language disorder-the Helsinki longitudinal SLI study (HelSLI): a study protocol. *BMC psychology*, 6(1), 24.
- Smolander, S., Laasonen, M., Arkkila, E., Lahti-Nuuttila, P., & Kunnari, S. (2020). L2 vocabulary acquisition of early sequentially bilingual children with TD and DLD affected differently by exposure and age of onset. *International Journal of Language & Communication Disorders*. In press.