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FINLAND

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Developmental language disorder in Finland

One of the earliest references in the Finnish literature to language difficulties in children was in 1959 by Forsius and her colleagues (1959). They described the condition and intervention for eight 5-12 year-old children with aphasia or an aphasia-like disorder treated at Lapinlahti hospital, Helsinki. In the 1970s–1980s the terms (developmental) dysphasia, delayed or deviant language development and language impairment were used. The first linguistically oriented doctoral dissertation on grammatical difficulties in Finnish children was published in 1977 and used the term delayed language development (Leiwo, 1977). The term specific language impairment (SLI) was not adopted until the 1990s. It was introduced more widely in 2010 when the Finnish Current Care Guidelines for SLI were published (The Finnish Medical Society Duodecim, 2010). Currently, researchers also in Finland prefer to use the term developmental language disorder (DLD) to refer to the fact that these children may also have other co-morbid difficulties besides language (Bishop et al., 2016).

Education for speech and language therapists (SLTs, logopedics) has always been highly multidisciplinary. Informal training of SLTs began in 1940 when Antti Sovijärvi was appointed as a professor of phonetics (Sovijärvi, 1991). More formal education began in 1947 at the University of Helsinki when Sovijärvi established two different programs at the Department of Phonetics; a linguistic-acoustic program and a speech and voice therapy program (formerly speech and voice physiology line). At first the program was at Bachelor level with a few months clinical training (Launonen & Klippi, 2008). In the 1970s, the Ministry of Health established a more systematically organised clinical course. The education programme was restructured to Masters level in 1980 in Helsinki and in 1981 in Oulu. This structure remains in all five universities where SLTs are currently educated (Helsinki, Oulu, Tampere, Turku, Åbo), although these programmes and degrees were reformed in 2005 as part of the Bologna process.

The medical speciality of phoniatics focusing on voice, speech, language, hearing and swallowing disorders, began in the early 20th century. At that time Finnish medical doctors who were interested in phoniatics were mainly looking for influences from German, Austrian, Swiss, French, Danish and Swedish colleagues (Siirala, 1982). Interest for

intervention in speech and language difficulties in children began in 1945 just after the Continuation War of Finland (Sovijärvi, 1991). The Government appointed a committee on the care of disabled children and one of the committee's task was to develop speech and language therapy services. In 1948, phoniatics became an official medical speciality in Finland and the first clinic of phoniatics was established in Turku hospital at the Department of Ear, Nose and Throat Diseases (Siirala, 1982). A few years later, in 1951, the second clinic was opened in Helsinki hospital and a small ward for children with speech and language difficulties was opened in 1961.

Prevalence

To date there have been only a few attempts to carry out prevalence studies of DLD in Finland. In 1983–1986 a project concerning rehabilitation guidance for children with DLD was carried out (Matikainen, 1987). In this project a prevalence estimate of 0.04–0.06% was presented. A few years later, Helminen and Vilkmann (1990) evaluated the prevalence of DLD based on hospital data in Tampere and provided a prevalence rate of 0.5% in 3–6-year-old children. In a retrospective study by Hannus and colleagues (2009) data from primary health care was collected including annual statistics of SLTs in Vantaa. They found that within an 11-year period (1989–1999), prevalence rates ranged from 0.03% to 0.69% in the age group of 0–15-year-olds and from 0.08% to 0.91% in the age group of 0–6-year-olds. In all of these Finnish studies the prevalence estimates are very low when compared to international figures (e.g., Law, 2000; Tomblin et al., 1997). Lower prevalence rates may arise, for example, from the diagnostic procedures used in clinical practice in the 1980s and 1990s (e.g. requirement for large discrepancy between verbal and nonverbal abilities). Furthermore, lack of standardised language tests made diagnosing difficult.

Current Care Guidelines

In Finland, in terms of intervention no clinical trials have been conducted with children with DLD. The national Current Care Guidelines were drawn up in 2010 based on international studies (Specific Language Impairment: Current Care Guidelines, 2010) and a revision is expected in 2018, after the release of ICD-11. This evidence-based clinical practice guideline provides a basis for terminology, assessment and intervention decisions for healthcare professionals in Finland. As an addition to current care guidelines, the Finnish association for speech and language therapists has drawn up guidelines for good speech and language therapy practice in DLD. This recommendation is a synthesis of research studies addressing the different aspects of DLD drawing on literature at different levels of evidence.

Population and cohort studies

There are no large-scale population studies on DLD in Finland. However, there is one ongoing cohort study where over 200 children aged 3–6 years with suspected DLD have been investigated (Laasonen et al., 2018). Etiological, neural, cognitive, behavioural and psychosocial levels of analysis have been used to increase the understanding of multiple interactive risk and protective factors affecting the profile of DLD.

Policy and legislation

The professional body

The Finnish Association of Speech and Language Therapists (Suomen Puheterapeuttiliitto, <http://www.puheterapeuttiliitto.fi>) is the recognised professional association of SLTs in Finland. The Finnish association promotes the members' educational, professional and economic interests, establishes and maintains professional standards, and draws up

recommendations and statements. It also supervises the principles of professional ethics. SLTs are licensed health care professionals and the occupational title is protected by law. The National Supervisory Authority for Welfare and Health (Valvira) grants the permission required to practice the profession and maintains the open nationwide register of health care professionals (i.e. Terhikki register, http://www.valvira.fi/web/en/healthcare/professional_practice_rights/terhikki_register).

The National Health and Education Service

According to the Constitution of Finland, everyone is entitled to adequate health services (Ministry of Social Affairs and Health, 2013). Municipal health care services, implemented with Finnish government-subsidised support, form the basis of the health care system. Speech and language therapy in Finland is part of medical rehabilitation and it is a municipal responsibility to organise this service. Health services, including speech and language therapy, are divided into primary health care and specialised medical care. Primary health care services are provided at municipal health centres and most of the specialised medical care in hospitals. If the primary health care system is for some reason unable to produce enough of these services, the municipality can buy the service from the private sector or other non-governmental health care services. Currently there is on-going reform of the health, social services and regional government (the Sote reform) to establish new regional governments, overhaul the funding, services and structure of social and health services and transfer new responsibilities to the regional governments. The aim of the reform is to offer the population more equal access to services, to reduce disparities in health and wellbeing and to contain costs. The reform is planned to begin in 2021.

The Constitution also ensures that everyone is entitled to receive sufficient support services in education (European Agency for Special Needs and Inclusive Education, 2018). The philosophy of integration has been promoted in education since the early 1970s. However, the inclusion rate of children with special needs started to increase considerably only after a steering group was appointed in 2006 by the Ministry of Education and Culture. Its aim was to prepare a long-term strategy for the development of special needs and inclusive education in pre-primary and basic education. The strategy was implemented in 2010. According to this new systematic way of organising support a learner has the possibility to receive sufficient support once the need arises. The support is divided into three categories: general, intensified and special support.

Screening

Screening children for developmental delay before school age is a long-standing practice in the Finnish health care system (Valtonen et al., 2009). From 1972 onwards, legislation has required comprehensive developmental surveillance. Currently, at least 15 follow-ups are organised for children before they enter school at age 7, first being just after birth (Mäki, 2017). All the follow-ups are free of charge, within easy reach and voluntary. The services are taken up by almost every families regardless of socio-economic status. The basic working team in developmental surveillance includes a trained nurse and a medical doctor. Also other professionals (e.g. SLTs, psychologists, physiotherapists, social workers) may work in the team if necessary. Speech and language skills are screened as part of this surveillance by trained nurses. Under 2 years of age the 'Vane-psy' assessment method can be used to screen children's neuropsychological development (Mustonen, 2017). For children aged 2–6 the comprehensive neurodevelopmental screening test 'Lene' can be used (Valtonen, 2017). The developmental areas examined are, for example, interactional and attentional skills, speech production and comprehension, auditory and visual perception and discrimination,

visuomotor skills, and reading readiness. At the age of 5 a specific screening test for speech and language skills, called Snowman, can also be administered (Korpilahti, 2017).

Who delivers services and where?

In addition to child welfare clinics, the main support (i.e. general, intensified and special support) for children with language needs comes through support services in education. The support levels are evaluated individually for each child. Parents or teachers usually notice the need for general support (e.g. arrangements such as modifying teaching groups and differentiating instructions) (European Agency for Special Needs and Inclusive Education, 2018). Initiation of intensified support is based on pedagogical assessment by a multi-disciplinary welfare team. Special support is provided for children who cannot achieve their growth, development or learning objectives through other forms of support. If the support provided by education professionals is not sufficient, other forms of service (e.g. medical rehabilitation) are considered. Access to medical assessment is based on referral from professionals or on parental or teacher's concern.

SLTs in primary health care are responsible for providing preventative activities (e.g. counselling of parents, training of other professionals) as well as assessment and intervention services. In specialised medical care the diagnostic work and planning of interventions as part of the multidisciplinary teams (i.e. a medical doctor specialised in language disorders, psychology or neuropsychology, a SLT and an occupational therapist when required) is emphasised. Children coming to be assessed in these teams are considered the most severe cases and are referred by primary health care medical doctors, mostly based on a recommendation from a municipal SLT. Intervention for children with severe speech and language disorders is organised by the Finnish Social Insurance Institution (Kela, <http://www.kela.fi/web/en>). Kela is an independent institution, with its own administration and finances, supervised by the Finnish Parliament. A child is eligible for intervention organised by Kela if his/her impairment significantly limits his/her functioning and complicates daily life. The speech and language therapy available through Kela is usually provided by SLTs working in the private sector or other non-governmental health care companies.

Although intervention for children with language needs is delivered primarily by SLTs, some other professional groups may also be involved. These include Psychologists (MPsyc) in particular those specialized in neuropsychology (LicPsyc), who mainly contribute to assessment but can also be involved in intervention. Based on the current care guidelines psychological assessment is required for a DLD diagnosis, in order to establish the level of nonverbal intellectual functioning, for differential diagnostics and to diagnose various often comorbid conditions. In municipal health care services, psychologists often conduct a general assessment of cognition with, for example, the Wechsler scales of intelligence (Wechsler, 2009). In specialised medical care, the neurocognitive functioning is assessed in more detail as described above in the current care guidelines. The role of psychologists and neuropsychologists is emphasised in intervention if the child has psychological or neurocognitive challenges beyond speech and language and with school-aged children (e.g. children with neuropsychiatric symptoms or learning difficulties). The form of support is then neuropsychological rehabilitation that is based on careful neuropsychological assessment and a rehabilitation plan.

Apart from support in the form of school arrangements and rehabilitation, additional support is provided by several public health organisations. The Finnish Brain Association (<https://www.aivoliitto.fi/>) represents and supports children and adolescents with DLD and their families by organising rehabilitation, adaptation training and recreational activities. The association also ensures that the special needs are taken into consideration in decision-making. Furthermore, the Communication and Technology Centre Tikoteekki of The Finnish Association on Intellectual and Developmental Disabilities (<https://www.kehitysvammaliitto.fi/in-english/complex-communication-needs/>), and its local centres, offer information and material for individuals with communicative impairments and promotes inclusion, the right of self-determination and opportunities to communicate in their communities and society.

What do people do with children with DLD

Interventions for children with DLD include a variety of practices. SLTs commonly use techniques such as modelling, focused stimulation, milieu teaching and conversational recasting. It has become increasingly important to apply alternative and augmentative communication (AAC) methods to intervention with children with DLD. Depending on severity of communication difficulty, low-tech or high-tech means can be used. Mostly signs and symbols are used. Currently, it is a well-established way of helping these children in their communication and compensating for their difficulties. The role of the SLT in designing and guiding the use of these methods is essential. Children with DLD can additionally get guidance for using AAC from an educated AAC guide.

Interventions may be carried out directly or indirectly, and in various settings, somewhat depending on the severity and type of DLD, but also depending on the source of financing. In recent years, parents and caregivers have been given a bigger role in intervention and therapy often takes place in the child's daily environment such as at home, a day care centre or school. When intervention takes place in the day care centre other children may also take part in an intervention session as support children. Moreover, guidance sessions for adults communicating with children with DLD as well as multidisciplinary approaches have become common. In addition, different forms of telemedicine are becoming usual practice due to long distances, financial constraints and a lack of therapists in certain areas.

The duration, frequency and intensity of intervention vary depending on the needs of the child, the resources available and the source of finance. Early support is provided as soon as there is any suspicion of DLD. In primary health care, the amount and frequency of intervention varies greatly depending on the district of residence. It can vary from 5 sessions in six months to weekly therapy during a one or two year period. Sometimes intervention may be realised in blocks (e.g. 2–3 times a week for a ten-week period). If the child receives intensive medical rehabilitation funded by Kela, they usually grant access to intervention for one to three years at a time. According to the recent national survey of speech and language interventions provided by Kela, the average amount of sessions per year was ~28 sessions (Kunnari et al., in press).

If neuropsychological rehabilitation is scheduled, it may target the impaired skills, focus on compensating strategies or modification of the environment, and often includes neuropsychotherapeutic elements and consultation with various stakeholders (e.g. parents and other professionals working with the child; Virta, Klenberg, Laasonen & Hokkanen, 2018).

Looking to the future

Care pathway

Preventative and early intervention services for children with language difficulties are very well organised in Finland. However, there are some practical challenges in the current care pathway concerning school-aged children. Many SLTs have argued that it is quite common that speech and language therapy organised by either municipalities or Kela ends when children with DLD move to the basic education system at the age of 7. In basic education these children will primarily get support for their language difficulties from special education teachers. In many cases this support is insufficient. Therefore, there is a clear need for better integration of health and education services for school-aged children.

Evidence based practice

Given the large number of different intervention approaches that might be adopted to assist children with DLD to improve their language skills, more efficacy research is needed from typologically different languages. Many linguistic phenomena cannot be studied, for example, in the widely studied Germanic languages. Thus, a lot of groundwork is needed to conduct language-specific intervention studies that meet at least minimal standards of evidence. With the help of these studies the most appropriate information will be available for clinical decision-making and for families with children with DLD in Finland.

Health, social services and regional government reform

It has been claimed that there are significant differences in the availability and range of health services in different municipalities in Finland. With the on-going reform the country will be divided into 18 counties instead of the current nearly 190 designated authorities. Although the aim of the reform is to increase the freedom of choice in services, to offer the population more equal access to services and to reduce disparities in health and wellbeing, we do not yet know the possible effects of this reform for children with DLD. Hopefully it will lead to more coherent services enabling these children to become effective contributors to society.

Conclusions

Probably the biggest challenge that faces clinicians in Finland is the identification of developmental language disorder in children who are multilingual and multicultural. The importance of valid and reliable clinical tools when assessing the language skills of these children cannot be over emphasised. Furthermore, more focused intervention programmes and increased dissemination of intervention research is needed to build evidence for effective speech and language interventions.

References

- Bishop, D. V. M., Snowling, M. J., Thompson, P. A., Greenhalgh, T., & The CATALISE Consortium. (2016) 'CATALISE: a multinational and multidisciplinary Delphi consensus study. Identifying language impairments in children' *PLOS One*, vol. 11, no. 7, Available at <http://dx.doi.org/10.1371/journal.pone.0158753> (Accessed 11 July 2018).
- European Agency for Special Needs and Inclusive Education (2018) *Country information for Finland* [Online]. Available at www.european-agency.org/country-information/finland

- The Finnish Medical Society Duodecim, 2010 *Specific Language Impairment. Current Care Guidelines* [Online]. Available at www.kaypahoito.fi (Accessed 11 July 2018).
- Forsius, H., Torma, S., & Viitamäki, O. (1959) *Aphasic and aphasia-like disorders in children: Part I*, Helsinki, Mercatorin kirjapaino.
- Hannus, S., Kauppila, T. and Launonen, K. (2009) 'Increasing prevalence of specific language impairment (SLI) in primary healthcare of a Finnish town, 1989-99' *International Journal of Language and Communication Disorders*, vol. 44, pp. 79–97.
- Helminen, E., & Vilkmann, E. (1990) *Kun puhe viipyy – kuntoutusohjaus ja dysfaattisen lapsen perhe*, Turku, Afasia- ja aivohalvauksyhdistysten liitto.
- Ministry of Social Affairs and Health (2013) *Health care in Finland* [Online]. Available at <http://julkaisut.valtioneuvosto.fi/handle/10024/69930> (Accessed 11 July 2018).
- Korpilahti, P. (2017) 'Puheen- ja kielenkehityksen arviointimenetelmä, Lumiukko-testi' in Mäki, P., Wikström, K, Hakulinen, T. and Laatikainen, T. (eds), *Terveystarkastukset lastenneuvolassa ja kouluterveydenhuollossa*, Helsinki, Terveyden ja hyvinvoinnin laitos, pp. 95–96.
- Kunnari, S., Heikkinen, E., Loukusa, S., Savinainen-Makkonen, T., Martikainen, A-L. and Smolander, S. (in press) *Lasten vaativan lääkinällisen puheterapiakuntoutuksen valtakunnallinen selvitys* [Online], Available at <https://www.kela.fi/tutkimusraportit>
- Laasonen, M., Smolander, S., Lahti-Nuutila, P., Leminen, M., Lajunen, H-R., Heinonen, K., Pesonen, A-K., Bailey, T. M., Pothos, E. M., Kujala, T., Leppänen, P. H. T., Bartlett, C. W., Geneid, A., Lauronen, L., Service, E., Kunnari, S. and Arkkila, E., (2018) 'Understanding developmental language disorder - the Helsinki longitudinal SLI study (HelSLI): a study protocol' *BMC Psychology*, vol. 6, no.24, Available at <https://bmcp psychology.biomedcentral.com/articles/10.1186/s40359-018-0222-7>
- Launonen, K. and Klippi, A. (2008) 'Challenges to logopedics and speech-language therapy in Finland' in Klippi, A. and Launonen, K. (eds.), *Research in Logopedics: Speech and Language Therapy in Finland*, Clevedon, Multilingual Matters, pp. 3–8.
- Law, J., Boyle, J., Harris, F., Harkness, A. and Nye, C. (2000) 'Prevalence and natural history of primary speech and language delay: Findings from a systematic review of the literature' *International Journal of Language and Communication Disorders*, vol. 35, pp. 165–188.
- Leiwo, M. (1977) *Kielitieteellisiä näkökohtia viivästyneestä kielenkehityksestä*, PhD thesis, Jyväskylä, University of Jyväskylä.
- Matikainen, M-L. (1987) *Dysfasialasten kuntoutusohjausprojekti 01.05.1983–30.04.1986*, Jyväskylä, Afasialasten tuki.
- Mustonen, K. (2017) 'Vauvan neurologisen ja psyykkisen kehityksen arviointimenetelmä Vane-psy' in Mäki, P., Wikström, K., Hakulinen, T. and Laatikainen, T. (eds.), *Terveystarkastukset lastenneuvolassa ja kouluterveydenhuollossa*, Helsinki, Terveyden ja hyvinvoinnin laitos, pp. 86–88.
- Mäki, P. (2017) 'Lastenneuvolan ja kouluterveydenhuollon terveystarkastukset' in P. Mäki, K. Wikström, T. Hakulinen & T. Laatikainen (eds.), *Terveystarkastukset lastenneuvolassa ja kouluterveydenhuollossa*, Helsinki, Terveyden ja hyvinvoinnin laitos, pp. 13–15.
- Siirala, S. (1982) 'Foniatrian kehitys Suomessa' *Suomen logopedis-foniatriinen aikakauslehti*, vol. 1, pp. 8–12.
- Sovijärvi, A. (1991) 'Piirteitä maamme logopedisen opetuksen vanhemmista kehitysvaiheista' in Kiesiläinen, A., Korpjaakko-Huuhka, A-M. and Salonen, L. (eds.), *Puheterapiakäytäntöjen juuret ja kehitys*, Puheterapian vuosikirja 7, Helsinki, Suomen Puheterapeuttiliitto, pp. 31–35.
- Tomblin, J. B., Records, N., Buckwalter, P., Zhang, X., Smith, E. and O'Brien, M. (1997) 'Prevalence of specific language impairment in kindergarten children' *Journal of Speech, Language, and Hearing Research*, vol. 40, pp. 1245–1260.

- Valtonen, R. (2017) 'Leikki-ikäisen lapsen neurologisen kehityksen arviointimenetelmä Lene' in P. Mäki, K. Wikström, T. Hakulinen & T. Laatikainen (eds.), *Terveystarkastukset lastenneuvolassa ja kouluterveydenhuollossa*, Helsinki, Terveyden ja hyvinvoinnin laitos, pp. 89–94.
- Valtonen, R., Ahonen, T., Lyytinen, P. and Tolvanen, A. (2009) 'Screening for developmental risks at 4 years of age: predicting development two years later' *Nordic Psychology*, vol. 59, pp. 95–108.
- Virta, M., Klenberg., L., Laasonen, M. and Hokkanen, L. (2018) 'Uudistunut neuropsykologian erikoispsykologikoulutus: näkökulmia kuntoutuksen opiskeluun ja osaamistavoitteisiin' *Kuntoutus*, vol. 1, pp. 47–52.
- Wechsler, D. (2009) *WPPSI-III - Wechsler Preschool And Primary Scale Of Intelligence*, 3rd edn, Helsinki, Psykologien Kustannus Oy.