Effect of LENA (Language ENvironment Analysis) for children with hearing loss in Denmark including a pilot validation for the Danish Language

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Aim: To investigate whether daylong recordings with Language Environment Analysis (LENA) can be utilized in a hospital-based Auditory Verbal Therapy (AVT)-program in Denmark and to conduct a pilot validation for the Danish language. Methods and materials: A license for the LENA system (LENA SP), wearable devices (DLP), and clothing was purchased, and trials were offered to three families enrolled in the AVT program. Each family made two daylong recordings with 3-4 months in between and received feedback during the therapy sessions. From 18 x 10-minute clips randomly pulled out of the recordings, a comparison of Adult Word Counts (AWC) between the LENA algorithm counts and the counts made by two human transcribers was made and used for the pilot validation. Results: LENA proved to be valuable as a guiding tool for Danish parents. Pilot validation showed good correlations and an acceptable Limit of Agreement (LoA). LENA holds the potential for Danish validation. Discussion: When used in clinical practice, parents must be informed of the biases and limitations, and possible ethical issues must be considered. Because of the GDPR rules, there is a need to discuss the possibility of implementing this tool clinically in Denmark and the EU.