Research aims at better diagnosis of language issues

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(Medical Xpress) -- Recent studies by a UT Dallas researcher aim at finding better ways to diagnose young children with language impairments.

Dr. Christine Dollaghan, a professor at the Callier Center for Communication Disorders and the School of Behavioral and Brain Sciences, is author of a paper in the *Journal of Speech, Language, and Hearing Research*. The study evaluated data collected from a large sample of about 600 children. Some of the participants had specific language impairments, or SLI. She wanted to deterimine whether SLI should be regarded as a discrete diagnostic category.

"One of the most basic and long-standing questions about SLI is whether children with the disorder have language skills that differ qualitatively and nonarbitrarily from those of other children or whether their language skills simply fall at the lower end of a continuous distribution, below some arbitrary threshold but not otherwise unique," she wrote in the October article titled "Taxometric Analyses of Specific Language Impairment in 6-Year-Old Children."

Dollaghan previously reported on this sample of children when they were 3 and 4 years old. The new study included some test results that were not available at the earlier ages. She focused on four common indicators of SLI - receptive vocabulary, expressive utterance length, expressive vocabulary diversity and nonsense word repetition.

As in the earlier investigation, she found the 6-year-olds with SLI did not represent a distinct group with unique characteristics Instead, they fell at the lower end of a continuous distribution of language skills.

The results of the study could help in developing diagnostic protocols for children with language impairment and tailoring treatments to the characteristics of individual children. Dollaghan said the categorical-continuous question is being examined by investigators interested in many other diagnostic categories, including autism, schizophrenia and ADHD.

Dollaghan also co-authored an article in the November edition of Artificial Intelligence in Medicine with colleagues from UT Dallas' Erik Jonsson School of Engineering and Computer Science, including lead author Keyur Gabani, Yang Liu and Khairun-nisa Hassanali. The team examined the use of automated machine learning and natural language processing methods for diagnosing language impairment in children based on samples of their language.

In "Exploring a corpus-based approach for detecting language impairment in monolingual English-speaking children," the team reported that automated methods performed well. The findings suggested future collaborations between researchers in computer science and communication disorders will likely be useful, Dollaghan said.

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