Dyslexic children do not detect stressed syllables well while listening to words

Dyslexia is not only a problem related to reading; dyslexic children also display impaired prosodic processing—in other words, they struggle to detect stressed syllables. A team of Spanish researchers has shown this feature to be lacking in dyslexia for the first time in Spanish (it has already been demonstrated in English) and highlights the importance of including oral expression activities, as well as reading, to differentiate tone, word stress and intonation.

Regardless of the school level or intelligence of the individual, dyslexia can generate difficulties in correctly and fluently recognising words, writing without making spelling mistakes and decoding words. The immediate consequences are an effect on written work and reading, which stops dyslexics from naturally developing the necessary vocabulary and memory.

Experts currently attribute this disorder to a phonological impairment which translates into difficulty in suitably representing phonemes to automate the rules of grapheme-phoneme conversion and maintain the phonological information in the working memory.

A new study, published in *Research in Developmental Disabilities*, demonstrates for the first time in Spanish that dyslexia is not only a problem with learning to read (evidence for this already exists in English). Children with this difficulty also display impaired prosodic processing (also known as supra-segmental phonology).

More errors for dyslexic children

To demonstrate this, the team of scientists lead by the University of Granada (UGR), performed a series of experiments with 31 Spanish children: "We designed a task which consisted of the participants having to detect and use the keyboard to point out the stressed syllable from a series of spoken stimuli," explains Gracia Jiménez-Fernández to SINC. Jiménez-Fernández is a researcher in the department of Developmental Psychology and Education at UGR and the lead author of this study.

In the first task, the stimuli were words with three syllables which could carry the stress on the last syllable (with or without an accent), the penultimate syllable (again with or without an accent) or the antepenultimate syllable. The second task had the same structure but the stimuli presented were pseudowords (nonsensical words that respect graphotactical rules of Spanish, for example 'cátupos').

"It is worth pointing out that the words and pseudowords were presented in spoken form, meaning that at no point did the child have to read them, they just had to listen to them and indicate the stressed syllable using the keyboard," says Jiménez-Fernández.

According to the results, the group with dyslexia showed a significantly greater number of errors in detecting the stressed syllable and also took longer to respond. It was also revealed by comparing the performances with the words and pseudowords that the participants in the control group (without dyslexia) employed different strategies in each case, using the lexical knowledge they possessed about the words.

However, the dyslexic participants tended to apply a single strategy to process the words and pseudowords without being able to use their lexical knowledge. "What we still do not know is whether the dyslexic group does not possess such lexical knowledge or, despite possessing it, cannot use it in this type of task," notes the researcher.

The authors consider it "essential" to include tasks with pseudowords to study this type of dyslexia and for children to learn to differentiate tones, word stress and intonation. Therefore, "Dyslexia intervention must not only include reading and segmental phonology activities (phonological awareness) but also pay special attention to supra-

segmental or prosodic processing," warns the researcher.

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