



Abstract

Auditory Processing Disorders (APD) are often linked to neurodevelopmental conditions like Autism, ADHD, and Specific Language Impairment [1,2,3], but limited research exists on children with Developmental Coordination Disorder (DCD) [4]. This study addresses that gap by investigating whether children with DCD are more likely to exhibit APD than typically developing peers. A series of auditory tests, including speech in noise, temporal analysis, and the dichotic digits test, were administered to twenty four children (12 with DCD and 12 typically developing). Significant differences were found, with children with DCD consistently underperforming, suggesting they are more likely to exhibit auditory processing deficits. The findings highlight the relationship between motor coordination and auditory perception difficulties in school-aged children with DCD.

Objectives

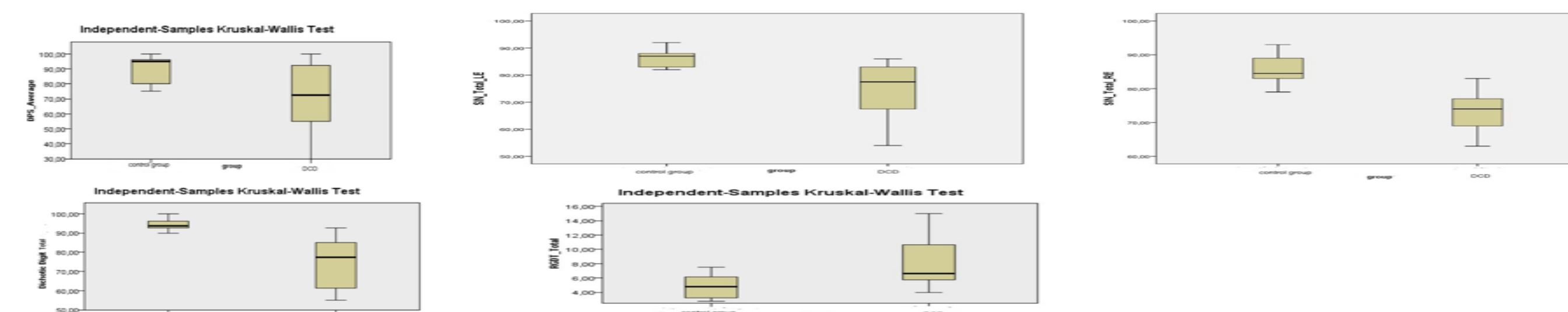
This research aims to analyze the potential correlation between auditory difficulties and motor coordination disorder in children, as well as to examine the possible connections between them.

Methods and Materials

- **Population:** 24 children aged 6-12 years with normal peripheral hearing; 12 with DCD (clinic group) and 12 without (control group).
- **Materials:** The test battery consisted of four tests (Speech in Noise, Random Gap Detection, Duration Pattern Sequence, Dichotic Digits) and a questionnaire for the parents Children's Auditory Performance Scale.
- **Methods:** Randomized order of tests using over-the-ear headphones in a quiet room at 60 dBHL.

Results

Statistically significant differences were observed in all auditory tests between the two groups. Children with Developmental Coordination Disorder (DCD) exhibited lower performance compared to typically developing children in all auditory tasks administered to them. Moreover, in some cases, their performance is characterized as deficient.



Specifically, in the DPS test, a significant difference was noted for both ears ($p=0.016$). In the RGDT temporal analysis test, statistically significant differences were found at 2000 Hz ($p=0.020$) and 4000 Hz ($p=0.048$), with an overall p -value of 0.013. The DD test confirmed statistically significant differences between the groups for both ears ($p=0.000$). Additionally, in the SinB test, statistically significant differences were found for the right ear ($p=0.000$) and the left ear ($p=0.0001$).

Conclusions

Children with DCD at school age appear to have an increased likelihood of presenting deficits in auditory processing and meeting the criteria for APD diagnosis compared to typically developing children of the same age. The research confirms correlations and connections between motor mechanisms and auditory perception.

References

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