The Influence of Methylphenidate on Hyperactivity and Attention Deficits in Children With ADHD - A Virtual Classroom Test

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Abstract

Objective:
This study compares the performance in a continuous performance test within a virtual reality classroom (CPT-VRC) between medicated children with ADHD, unmedicated children with ADHD, and healthy children.

Method:
N = 94 children with ADHD (n = 26 of them received methylphenidate and n = 68 were unmedicated) and n = 34 healthy children performed the CPT-VRC. Omission errors, reaction time/variability, commission errors, and body movements were assessed. Furthermore, ADHD questionnaires were administered and compared with the CPT-VRC measures.

Results:
The unmedicated ADHD group exhibited more omission errors and showed slower reaction times than the healthy group. Reaction time variability was higher in the unmedicated ADHD group compared with both the healthy and the medicated ADHD group. Omission errors and reaction time variability were associated with inattentiveness ratings of experimenters. Head movements were correlated with hyperactivity ratings of parents and experimenters.

Conclusion:
Virtual reality is a promising technology to assess ADHD symptoms in an ecologically valid environment.