Measuring Attention of ADHD Patients by means of a Computer Game featuring Biometrical Data Gathering

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Abstract

ADHD is a neurodevelopmental disorder diagnosed mainly in children, marked by inattention and hyperactivity-impulsivity. The symptoms are highly variable, such as different ages of onset and potential comorbidities, contributing to frequent misdiagnoses. Professionals note a gap in modern diagnostic tools, making accurate identification challenging. To address this, recent studies recommend gamification for better ADHD diagnosis and treatment, though further research is essential to confirm its efficacy. This work aims to create a serious game, namely "Attention Slackline", to assess attention levels. The game, designed with expert input, requires players to concentrate on a specific point to recognize specific patterns while managing distractions. A controlled experiment tested its precision, and results were compared with established attention tests by a correlation analysis. Statistical analysis confirmed the game's validity, especially in tracking attention through correct responses and errors. Preliminary evidence suggests that "Attention Slackline" may serve as a credible instrument for the assessment of attentional capacities in individuals with ADHD, given that its outcomes have been empirically shown to correlate with those derived from a well-established attention assessment methodology.

Keywords: ADHD, Serious game, Attention, Assessment, Neuropsychology, Experiment, Children

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