

## Development of a Polish Virtual Reality–Based Therapeutic Application for ADHD

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### Abstract:

Adequate recognition and treatment of attention deficit and hyperactivity disorder (ADHD) during childhood can prevent poor outcomes in adulthood. Unfortunately, with an ADHD prevalence rate of approximately 5%, the resources available through mental health services in Poland are disproportionate to the number of affected youth.

To address limited availability of services, innovative digital solutions, including virtual reality, have been explored. However, there is still a scarcity of data regarding children and adolescents, particularly from non-English-speaking populations.

In this study, the Focus&Calm application was designed and developed. Virtual reality sessions are aimed to alleviate behavioral and neurocognitive symptoms of ADHD, with the game's narrative centered around spells training at a magic academy. The application operates in Polish and presents tasks that are culturally relevant and engaging for Polish participants.

Children aged 6-14 years with the ADHD diagnosis were recruited for the study. Participants were randomized to either an active intervention group or a control group. The intervention group underwent eight VR Focus&Calm sessions, while the control group participated in eight sessions applying a cognitive-behavioral treatment protocol adapted for the study.

Assessments were conducted at the baseline at the end of the study. At both timepoints Conners 3 questionnaire, D-2 test and Situational Motivation Scale were utilized. Additionally, the Client Satisfaction Questionnaire was administered at the end of the study.