

## S05-2: The Role of Movement in Adolescence: The Impact of Short-Term Dance Exergaming on Cognitive Functions and Wellbeing

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**Purpose:** The growing prevalence of sedentary lifestyles among adolescents, coupled with excessive screen time and declining levels of physical activity (PA), has become a significant public health concern (Guthold et al., 2020; WHO, 2021). These trends are often associated with cognitive decline, reduced attention spans, and increasing symptoms of psychological distress (Lukoševičiūtė & Šmigelskas, 2022; Twenge & Campbell, 2018). Simultaneously, research suggests that integrating PA with digital engagement – such as through exergaming – can yield cognitive and emotional benefits for youth (Bediou et al., 2018; Serrano et al., 2021). Dance-oriented exergames, such as *Just Dance*, provide an opportunity to combine physical movement with cognitive stimulation, potentially enhancing adolescents’ executive functions, memory, and psychological resilience. This study **aimed** to investigate the impact of a short-term intervention combining traditional functional training with dance-based exergaming on adolescents’ cognitive abilities and psychological wellbeing.

**Methods:** A four-week experimental programme was conducted involving 63 physically active adolescents aged 13–15 years. Participants were randomly assigned to either a functional training group (FT) or a functional training plus *Just Dance* group (FT + JD), engaging in structured sessions three times per week. Cognitive performance was assessed pre- and post-intervention using the Trail-Making Test, Stroop Test, and Visual Digit Span Test. Psychological wellbeing was measured using the WHO-5 index.

**Results:** Both research groups improved reaction time, while only the FT + JD group exhibited significant improvement in working memory ( $p < 0.05$ ). No significant change in psychological wellbeing was observed in either group, although gender differences in wellbeing scores were present throughout the study.

**Conclusions:** The findings indicate that supplementing traditional training with dance-based exergaming can selectively enhance cognitive functions, such as reaction speed and working memory, without necessarily influencing broader psychological wellbeing. These results highlight the potential of exergaming as an engaging, youth-friendly tool in physical education and extracurricular programmes, particularly for enhancing cognitive engagement. Further longitudinal research is needed to assess the long-term psychological impact and scalability of such interventions in educational settings.

**Keywords:** cognitive abilities, adolescents, *Just Dance*, wellbeing, extracurricular activities

