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Game-based Digital Therapy for Visual Motor Integration in Developmental Disability: A Case Report

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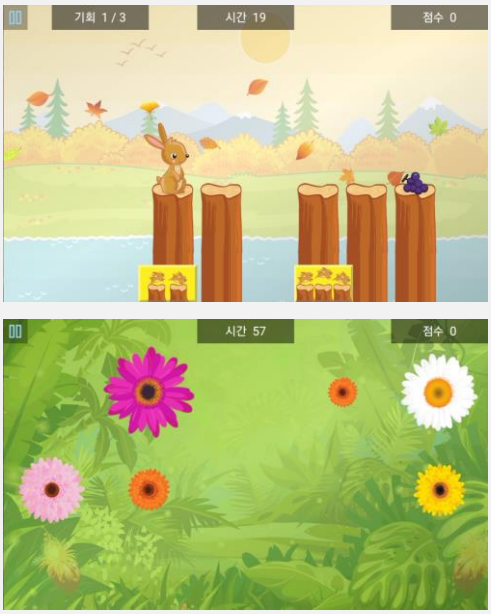
Introduction

- **Visual-motor integration (VMI)**
  - The ability to use input from the visual perceptive system to coordinate fine motor skills
  - Critical for participation in meaningful activities:necessary to complete early education activities that later influence success in kindergarten and primary school
- Children with developmental disabilities: at an increased risk for VMI deficits
- The aim of this study: to evaluate the effect of the game-based digital therapy for VMI in a child with developmental disability

Case Presentation

- **A 13-year-old patient** diagnosed with Neurofibromatosis type 1 with delayed intellectual development
- **Game-based digital therapy**
  - Doctor Brain Program® (Brain Academy, Seoul)
  - For 30 minutes every day for 4 weeks

Figure 1. The program of game-based digital therapeutics in this study

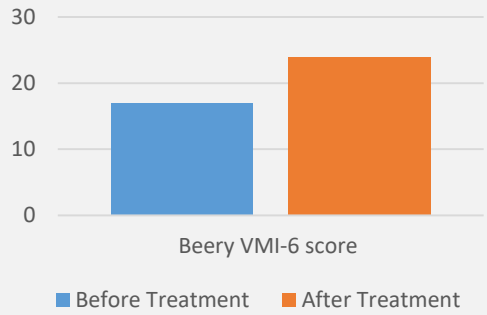


- **Evaluation**
  - Beery VMI: to measure visual perception ability
  - The child smartphone addiction observer scale: to confirm the degree of digital media addiction

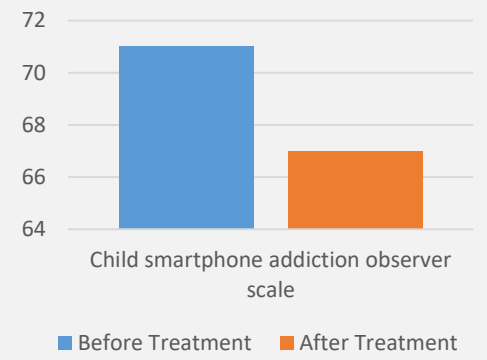
- **Result**
  - The initial full scale IQ (FSIQ) scores: 66 using Wechsler Intelligence Scale for Children - Fifth edition
  - The Beery VMI-6 score: improved from 17 to 24
  - The child smartphone addiction observer scale: improved from 71 to 67

Figure 2. (A) The Beery VMI-6 score and (B) the child smartphone addiction observer scale were improved after game-based digital therapy

(A)



(B)



Discussion

- This case study showed that 4 weeks of game-based digital therapy could improved the visuomotor function without digital media addiction
- This case study showed that the game based digital therapeutics could improve the visual motor integration in children with developmental disabilities