

2018-06-01

The Effect Video Games Have in Therapy to Treat Ailments in Children and Adolescents

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Recommended Citation

Hart, Spencer; LaRocco, Danielle; and Spear, Josh, "The Effect Video Games Have in Therapy to Treat Ailments in Children and Adolescents" (2018). *Academic Excellence Showcase Proceedings*. 113.

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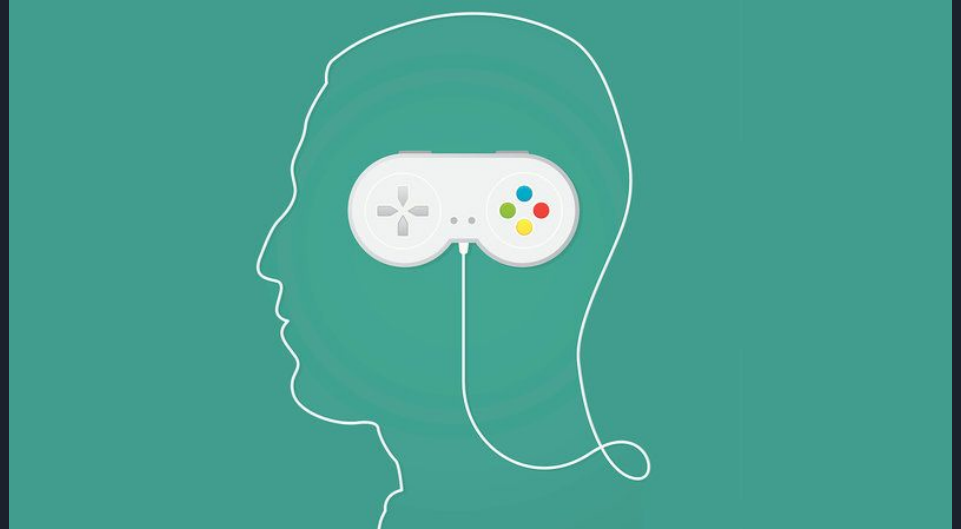


The Effect Video Games Have in Therapy to Treat Ailments in Children and Adolescents

Spencer Hart, Danielle LaRocco, and Josh Spear

Video games can be therapeutic for:

- Cerebral Palsy
- Injuries
- Learning Disabilities



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Cerebral Palsy

- Most common movement disorder that severely impairs motor function in children
- Prevalence ranges between 1.5 and 2.5 per 1000 live births
- Traditional treatment for CP mainly focusing on treating symptoms
 - Physical therapy
 - Braces, casts, and splints
 - Surgery
 - Medicines
 - Botulinum Toxin (Botox)
 - Anticonvulsants



Cerebral Palsy

- Video game systems such as the Xbox Kinect and the ENLAZA Interface have been shown to improve the following in children with CP
 - Head movement
 - Posture
 - Balance
 - Psychomotor status
 - Activities of daily living (“ADL”)
 - Motor Skills

ENLAZA Interface





Cerebral Palsy

- Virtual reality is also being used as a morale booster for children with CP
- Virtual Reality:
 - Helps children attain a sense of inclusion and relatability
 - can provide a changing and new environment without the need of transferring the actual person to a different setting
 - Encourages a fun and motivating experience
 - Has a beneficial effect in children suffering from disorders that cause sedentary behavior like CP



Injuries

- Acquired brain injuries (“ABIs”) are among the most prevalent causes of death and disability in children
- Damaging effects of ABI can include:
 - Impairments in physical, psychological, and psycho-emotional functions
 - Impaired balance
 - Chronic pain



Injuries

- Video games such as Nintendo's *Wii Fit* and Xbox Kinect are more fun and keep children motivated to continue rehabilitation more than traditional physical therapy
- Xbox Kinect and Nintendo's *Wii Fit* balance board has helped children provide a fun and effective way to improve balance
- Video games can also reduce or distract from physical and mental stress that can accompany ABIs



Memory Training

- Video games offered through systems such as Wii, VR, and Xbox Kinect have been shown to aid children with learning disabilities such as ADHD and dyslexia
 - improve overall working memory
 - increased reading performance
 - Engage and hold interest of child more than traditional methods



Memory Training

- The use of Computer Working Memory Training (“CWMT”) has been used to improve the working memory of children with ADHD
- Children with ADHD who have utilized the CWMT have shown
 - Improvements in the ability to initiate, plan, and organize
 - Sustain future-oriented problem solving
 - Improved working memory
 - Improved cognitive flexibility
- The utilization of these new methods had shown more “lasting effects over time and produces improvements in some aspects on which ‘gold standard’ treatments have no clear effectiveness”



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