Do children choose to play active video games when given the choice between seated and ambulatory video game play? A study of children’s play choice

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BACKGROUND

• Childhood obesity is increasing worldwide
• Conventional activity interventions have been largely unsuccessful
• Active video games (exergaming) combine video game technology and physical activity
• “Can Exergaming Contribute to Improving Physical Activity Levels and Health Outcomes in Children?”¹

Development

Walking Gaming Station
When given choice will children choose active over seated alternatives and will this choice be sustained over time?
METHODS

27 Children 9-13y

Baseline test: Anthropometric & Walking & Gaming Habituation

Physical Activity Monitoring System (PAMS) and Observation

4 Free choice video gaming 1-hour sessions

Ambulatory & Seated video gaming
METHODS

Ambulatory video game condition

Sedentary video gaming condition
RESULTS

- No significant effect across 4 VG sessions
- More time per session was spent playing seated than playing ambulatory
- Large variation in the time spent seated and active whilst video gaming suggest that choice may vary between individuals
RESULTS

100% time Seated

17
18
17
17

Session 1
Session 2
Session 3
Session 4

100% time Ambulatory

7
5
4
3

Session 1
Session 2
Session 3
Session 4
OBSERVATIONAL RESULTS

• Postural changes were apparent in all 4 sessions
• In session 1-4 the number of children changing from ambulatory to seated was 2, 6, 5, 3
• Four children made postural changes in 2 of the four sessions and 1 child changed posture in 3 of the four sessions
• Once seated children did not return to ambulatory video game play
EXPLANATIONS

• Feedback interface requiring video game play to be contingent on being active\(^3\)
• Children perceived the motor task to be contrary to their intended goal “beat the game”
• Attentional resources for cognitive and motor function are overloaded disrupts skill and “flow”

LIMITATIONS

• Disconnect between the game and the motor task
• Study design prohibited social interaction
  – social isolation contributed to lack of sustained Dance Dance Revolution video gaming
• Examined short-term game play
• Small sample size limited the exploration of large variation
• Failure to record video game titles

4Madsen, K.A. et al., (2007). Archives of Pediatric and Adolescent Medicine, 161, 105-107
FUTURE DIRECTIONS

• Investigate group participation
• Investigating preferences for games that incorporate bodily movements, levels of exercise intensity and the demands on cognition
• Examine sustainability of active gaming
REFERENCES


THANK YOU

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Questions ?