

Older Adults' Perception of the Benefits Associated with Intervention-Based Video Game Play

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INTRODUCTION

- There is growing evidence for the use of video games as cognitive interventions for older adults (e.g. Basak, Boot, Voss, & Kramer, 2008) as well as promise in their use as tools for physical therapy (e.g. Harley et al., 2011)
- Success will depend in on the willingness of older adults to both learn a new technology and to devote time to a game-based therapy.
- Older adults are willing to overcome the costs of technology use, such as usability issues, when the perceived benefit from the technology is high (Melenhorst, Rogers, & Bouwhuis, 2006).
- Older adults are motivated to play by the desire for physical and mental fitness, competition and winning, filling time in a satisfying way, and a sense of belonging (Hoppes, Wilcox, & Graham, 2001).
- A model (Figure 1) was previously proposed to explain adherence or non-adherence to an at-home video game-based cognitive intervention (Whitlock, McLaughlin, & Allaire, 2010).
- Model was based on the unified model of technology acceptance (Venkatesh, Morris, Davis, & Davis, 2003).

- The current study incorporated two video game-based cognitive interventions for older adults to examine perceptions of the costs and benefits of video game play.

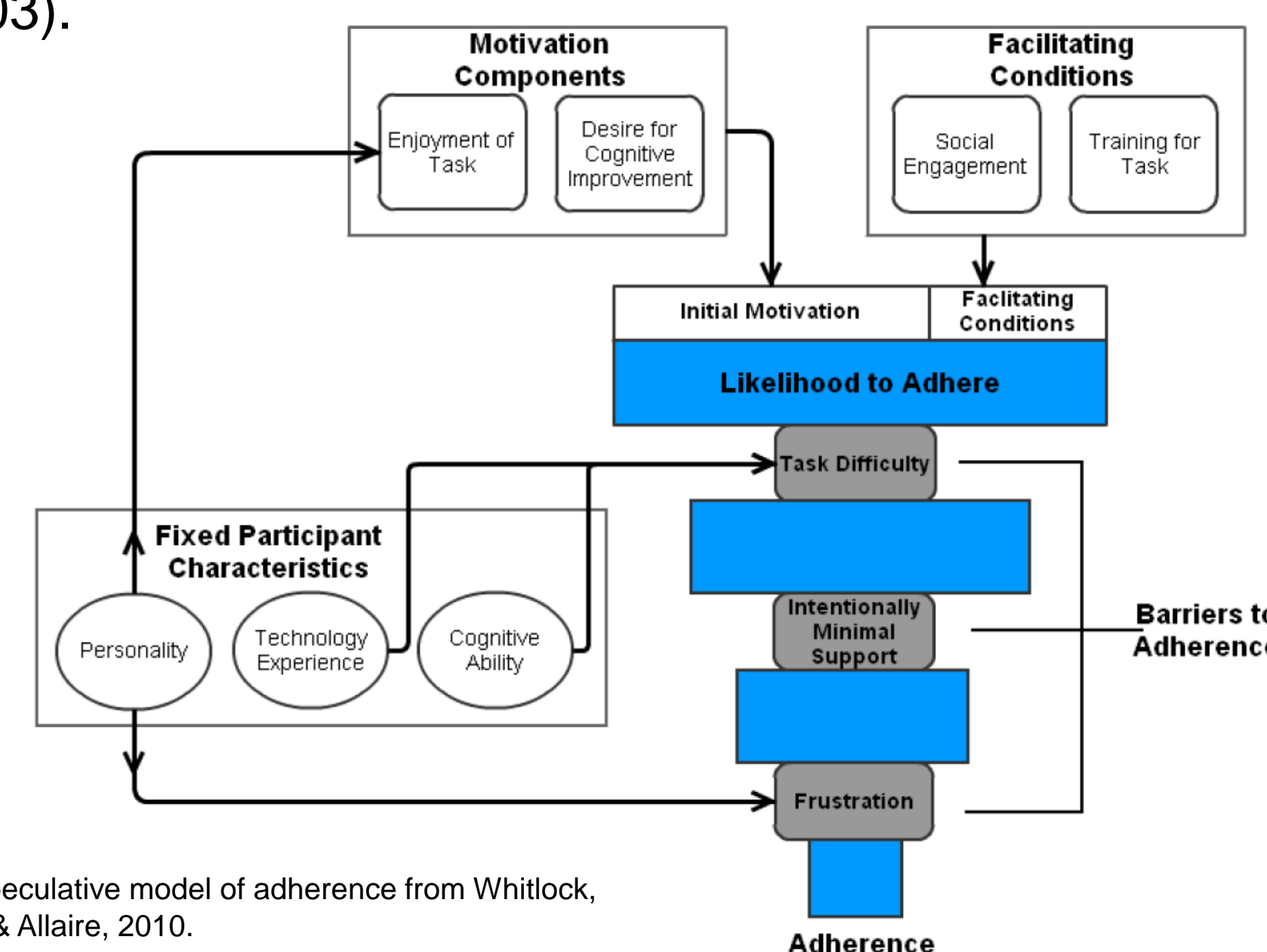


Figure 1. Speculative model of adherence from Whitlock, McLaughlin, & Allaire, 2010.

INTERVENTION 1

Method:

- Results from 17 intervention participants
- Age: $M = 67.66$, $SD = 8.01$, range = 60 - 77
- Game: A massively-multiplayer online role playing game (*World of Warcraft*) played at home for approximately an hour a day over a two-week period
- Data drawn from open-ended questions on a survey that was given to participants at a post-test session following completion of intervention
 1. "Overall, do you think playing the game improved any of your mental abilities?"
 2. "If you think it did improve your mental abilities, please describe which ones you feel are improved."
- Responses coded by whether the participant thought his or her mental abilities had improved (yes/no) and if so, by which type of ability they thought had improved (memory, reasoning, hand-eye coordination, reaction time, spatial ability, or attention)

Examples of statements and assigned codes:

"The art of finding ways to fix problems" - Reasoning

"The ability to shut out all else and concentrate on the problem at hand." - Attention

"Think fast" - Speed

"Stay alert" - Attention

"Sense of direction" - Spatial ability

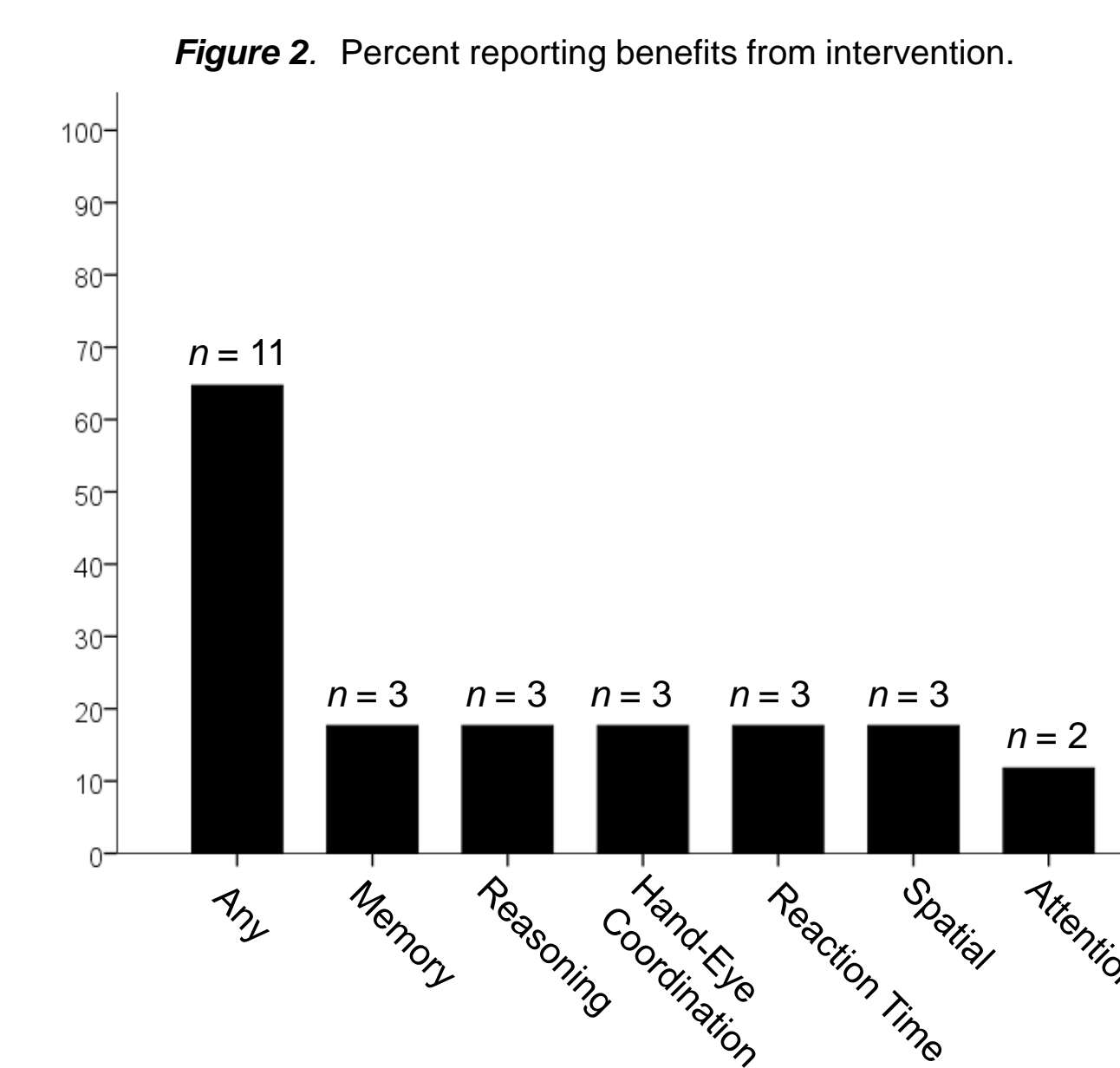
"Remember where I have been and what occurred" - Memory



INTERVENTION 1 Cont.

Results:

- Over half of participants ($n = 11$) believed at least one mental ability was improved by playing the game
- Most participants described only one ability ($n = 7$) while others named two ($n = 3$) or three ($n = 1$) abilities



INTERVENTION 2

Method:

- Results from 43 intervention participants
- Age: $M = 81.06$, $SD = 6.46$, range = 66 - 94
- Game: A 3D puzzle game for the Nintendo Wii (*Boom Blox*) played either singly or in pairs in a non-home location (e.g. private room at local community or religious center) for an hour a day for 15 days
- Data drawn from open-ended questionnaire administered at a follow-up session conducted six months after the intervention
 1. "What do you think are the benefits or advantages of playing video games, if any?"
 2. "What do you think are the costs or disadvantages of playing video games, if any?"
- Responses coded by type of benefit (cognitive or physical improvement, fun or entertainment, social engagement, spending time in a positive way, or other) or cost (overly time consuming or addictive, costly, or other) described

Examples of statements and assigned codes:

"Brain alertness" - Benefit of Cognitive or Physical Improvement:

"Uses otherwise 'extra' time in a possibly advantageous self-identity (if winning is occasionally done) - Benefit of Spending Time

"You get addicted and spend too much time doing it" - Cost of Spending Time or Addiction

INTERVENTION 2 Cont.

Results:

- Most participants described at least one potential benefit ($n = 39$; Figure 3) and cost ($n = 26$; Figure 4) associated with video games
- Females were significantly more likely than males to describe the benefit of cognitive or physical improvement, $\chi^2(1) = 9.09$, $p < .01$
- There was no significant difference in reported social benefits between participants who played the game with a partner and those who played alone, $p > .05$

Figure 3. Percent reporting possible benefits from video games.

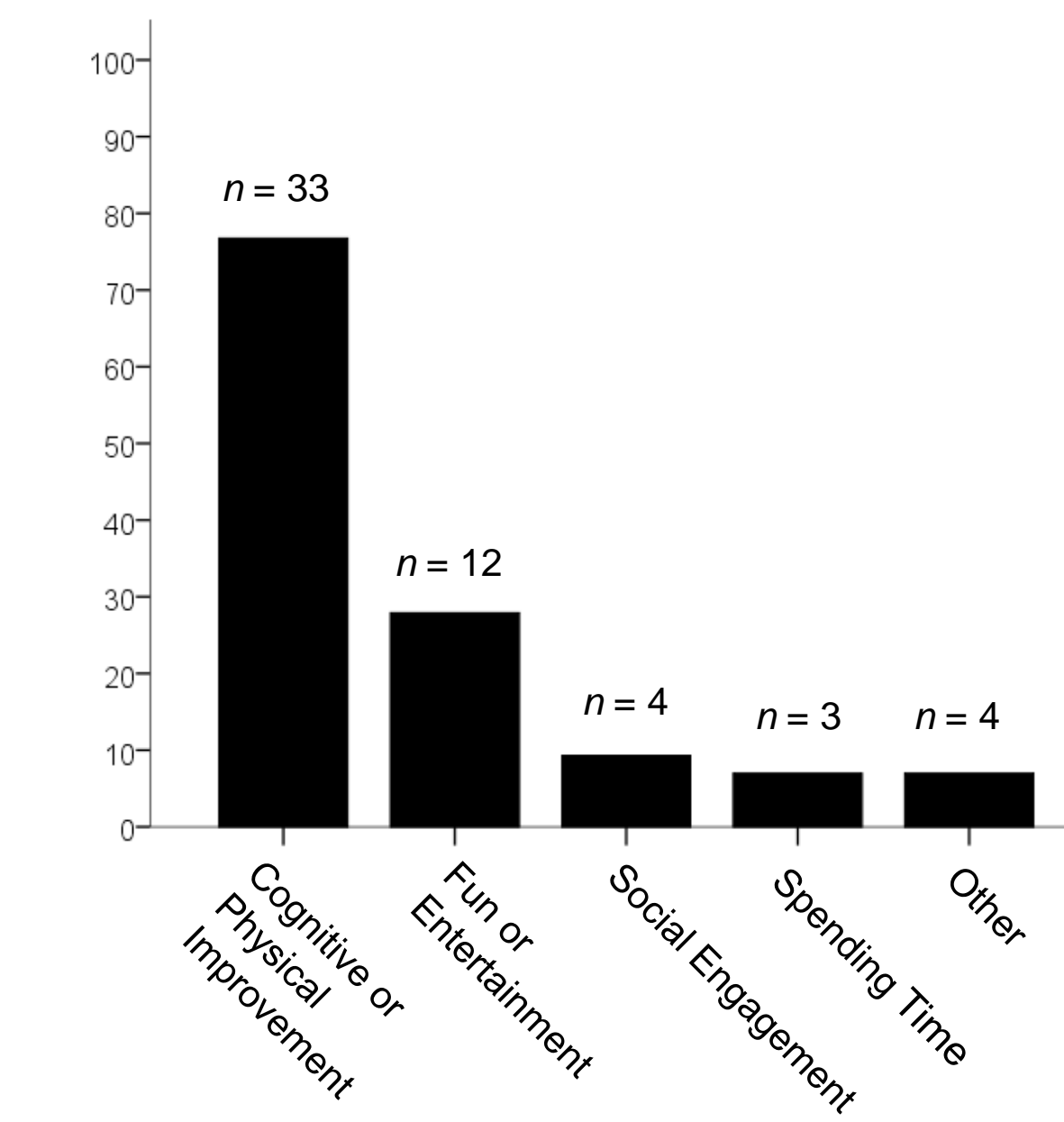
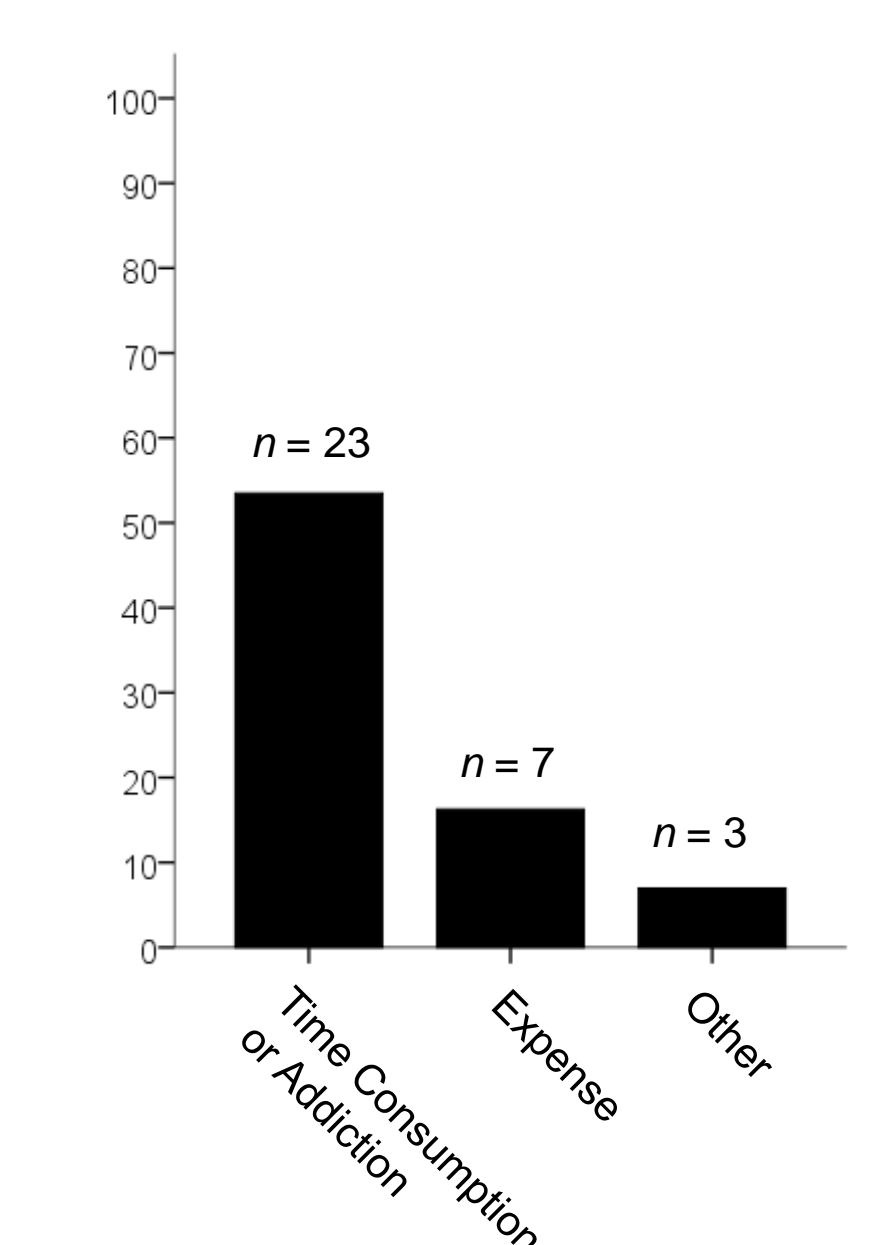


Figure 4. Percent reporting possible costs from video games.



CONCLUSIONS & FUTURE DIRECTIONS

- Older adults who have taken part in video game-based interventions perceive there to be potential benefits from video games, particularly cognitive benefits
- While social, multiplayer video games are highly popular among children and younger adults, older adults may not be aware of or not interested in social engagement via video games
- Future research should examine:
 - the cost and benefit perception of older adults not taking part in a game-based intervention
 - change in perception of costs and benefits before and after taking part in a game-based intervention
 - whether prior expectations of benefits affects ability change due to a cognitive intervention

ACKNOWLEDGEMENT & REFERENCES

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