Study finds high volume video gamers have more difficulty staying attentive

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Parents have long lectured their children about the mind-numbing effects of playing video games all day. And a new Iowa State University study has found that high volume action video game players -- those who play around 40 hours per week -- actually had more difficulty keeping focused on tasks requiring longer, more proactive attention than those who played video games less than a couple of hours a week.

The study, published online last week in the latest issue of the professional journal *Psychophysiology*, also supports research published within the last year establishing a positive association between being addicted to playing video games and having Attention Deficit Disorder (ADD).

"Our thinking right now is the sort of real world effect that you might be seeing is that these are individuals who would really have difficulty trying to maintain their attention independently over time," said Rob West, one of the study's authors, an associate professor of psychology and director of the cognitive psychology program at Iowa State. "So if they're engaged in some activity that doesn't really capture their attention -- like maybe a classroom lecture, or studying in a quiet space -- they're going to have difficulty maintaining attention on their own."

ISU psychology graduate student Kira Bailey led the study. The authors also included Distinguished Professor of Psychology Craig Anderson, director of Iowa State's Center for the Study of Violence, who was recently chosen as one of the three 2010 American Psychological

Association Distinguished Scientist Lecturers.

In the study, data was collected from 51 Iowa State undergraduate men (ages 18 to 33) who were nearly evenly divided between those who reported playing less than a couple of hours of video games per week, and those who played video games an average of 43 hours per week.

"We were not actually measuring the most extreme ends," West said. "There were people who we were unable to recruit and have data for who have higher rates than 43 hours per week. So this is probably on the high end, but it's certainly not the highest. You get some undergrads self-reporting that they're playing 9 or 10 hours a day."

Electrical activity in each subject's brain was recorded through EEG's from their scalp while they were engaged in the computer Stroop Task -- a standard measure used to determine attention. In the task, individuals identified the color of a word when the color and word matched, or did not match. It takes longer to indicate the color when the word does not match.

The study found that reactive attention control -- described as happening "just in time" -- was similar in the two groups of gamers. But brain wave and behavioral measures of proactive attention were significantly diminished in the frequent video game players.

"It's not clear what the effects would be if we tested people who were playing 10 or 20 hours a week," West said. "So we don't know if it's a graded effect or threshold effect -- like maybe 10's OK, but 20's not. We don't have those kinds of data yet.

"As you can imagine, this study could have implications for classroom and work performance for those people who play a lot of video games," he added.

West says that the results of this study contrast with research published over the last six years that has found beneficial effects of action video game play on some aspect of visual processing. High volume gamers' reactions to stimuli that appear very quickly had been found to be enhanced by playing action video games in those studies.

The researchers are collecting data for another study that extends on this research and explores working memory in video game players -- keeping information in mind for 10 or 20 seconds.
They're also exploring whether non-gamers produce the same attention results as those found in frequent players when they're asked to play action video games for approximately 10 to 20 hours over several sessions.

Source: Iowa State University (news : web)