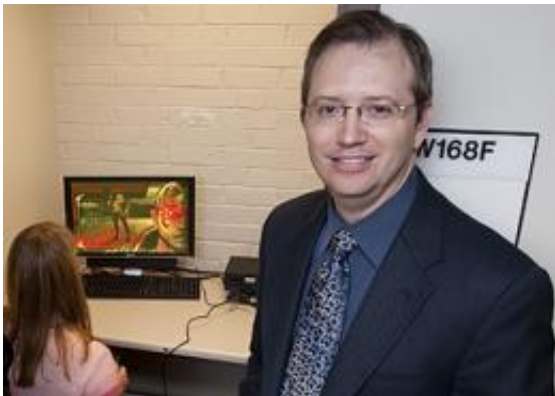


# Study identifies risks, consequences of video game addiction

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Douglas Gentile, an Iowa State associate professor of psychology, conducts video game research from the Media Research Lab. Gentile collaborated on a study of youths from Singapore that cites the risks, outcomes of video game addiction.

Photo by Bob Elbert, ISU News Service

Parents may have good reason to be concerned about how much time their kids have been spending playing their new video games since the holidays. A new study by an international research team -- including an Iowa State University psychologist -- found further evidence that video game "addiction" exists globally and that greater amounts of gaming, lower social competence and greater impulsivity were risk factors for becoming pathological gamers.

The two-year longitudinal study of 3,034 third through eighth grade students in Singapore found approximately nine percent of gamers to be

pathological players according to standards similar to those established by the American Psychiatric Association for diagnosing gambling addiction. And some serious problems -- including depression, anxiety, social phobias and lower [school performance](#) -- seemed to be outcomes of their pathological play.

Douglas Gentile, an Iowa State associate professor of psychology, and five researchers from Singapore and Hong Kong collaborated on the study, which will be published in the February 2011 issue of *Pediatrics* -- the journal of the *American Academy of Pediatrics*. It appears on the journal's website today. The study was jointly funded by Singapore's Ministry of Education and media Development Authority in a grant given to professors from the National Institute of Education.

## **One in 10 gaming youths addicted**

The researchers report that the percentage of pathological youth gamers in Singapore is similar to other recent video game addiction studies in other countries, including the United States (8.5 percent), China (10.3 percent), Australia (8.0 percent), Germany (11.9 percent) and Taiwan (7.5 percent).

"We're starting to see a number of studies from different cultures -- in Europe, the U.S. and Asia -- and they're all showing that somewhere around 7 to 11 percent of gamers seem to be having real problems to the point that they're considered pathological gamers," said Gentile, who published the first national American study on pathological video game addiction in youths in the May 2009 journal *Psychological Science*. "And we define that as damage to actual functioning -- their school, social, family, occupational, psychological functioning, etc. To be considered pathological, gamers must be damaging multiple areas of their lives."

"This study is important because we didn't know until this research whether some types of children are at greater risk, how long the problem lasts, or whether pathological gaming was a separate problem or simply a symptom of some other problem -- such as depression," said Angeline Khoo, associate professor of psychological studies at the National Institute of Education in Singapore and principal investigator of the overall project.

The researchers gathered data from students attending 12 Singapore schools, including five boys' schools. The subjects were surveyed annually on their video game play and behavior between 2007 and 2009. Surveys were conducted in classrooms by teachers who had been trained by the research team. The study had a 99 percent response rate.

Using the American Psychiatric Association's "Diagnostic and Statistical Manual of Mental Disorders" as a guide to define the addictive condition, the researchers found between 7.6 and 9.9 percent of the student sample could be defined as pathological gamers over the two-year period. Eighty-four percent of those subjects who were first classified as pathological gamers were found to still be classified that way two years later. Yet in that same two-year window, only one percent of the sample became new pathological gamers.

## **A serious behavioral problem**

Through their analyses, the researchers conclude that [video game addiction](#) is a serious behavioral problem that is separate from other afflictions.

"Once they become addicted, pathological gamers were more likely to become depressed, have increased social phobias, and increased anxiety. And they received poorer grades in school," Gentile said. "Therefore, it looks like pathological gaming is not simply a symptom of depression,

[social phobia](#) or anxiety. In fact, those problems seem to increase as children become more addicted. In addition, when children stopped being addicted, depression, anxiety and social phobias decreased as well."

Among this sample, pathological gamers started with an average of 31 hours of play per week, compared with 19 hours per week for those who never became pathological gamers. But Gentile says those thresholds don't necessarily translate across all cultures, particularly in American children.

"In general, Singaporean children spend more time playing video games than American children," he said. "In the U.S., we didn't follow the kids across time, so we don't know where that threshold is across each culture or if there is a certain amount that is too much. We do know, however, that playing a lot is not the same as being a pathological gamer -- the gaming must be causing problems for it to be considered pathological."

Gentile is visiting Singapore to meet with his research colleagues and present their findings during the final two weeks of January.

Provided by Iowa State University

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