

# **The WAGER, Vol. 14(8) - Video Game Playing and Gambling-Related Problems: Is there a Connection?**

October 14, 2009

Research has begun to focus on how gambling impacts adolescents (e.g., Delfabbro, Lahn, & Grabosky, 2005; Welte, Barnes, Tidwell, & Hoffman, 2009). However, researchers rarely have studied the correlation between adolescent video game playing and disordered gambling behavior. This week's WAGER reviews a study (Delfabbro, King, Lambos, & Puglies, 2009) that examined associations between gambling-related problems and types and frequency of video game play among Australian adolescents.

## **Methods**

- Participants (N= 2,669) were students between the ages 12 and 17 attending six secondary schools (i.e., grades 8-13) in South Australia.
  - Delfabbro et al. purposely sampled schools; they selected four schools to obtain representation from each of the four major statistical districts in the metropolitan area and selected two from major regional centers.
  - All students who were present on the survey's administration day completed the survey with the exception of students who were withdrawn by parents (i.e., withdrawers). The absentee rate reported by the schools was approximately 10%; the withdrawer rate and completion rate were not reported.
- The survey measured video-game involvement during the past year and DSM-IV Pathological Gambling (PG) items.
  - Video-game involvement measures included frequency of play, number of hours played, and type of game played, including: TV games (e.g., Xbox, Nintendo, Playstation); phone-based games; hand-held games (e.g., Nintendo, Gameboy); PC games; and arcade games.

- Researchers assessed PG using the DSM-IV Juvenile Criteria (DSM-IV-J; Fisher, 1992); a screening instrument for gambling-related problems among adolescents modified from the DSM-IV criteria for PG.
  - A 12-item yes/no scale.
    - According to Fisher (1992), a total score of four or more indicates pathological gambling.
    - The screen asked about current problems. Five items specify “in the past year,” six items are asked in the present tense, and one item was more ambiguous (Have you fallen out with members of your family, or close friends, because of your gambling behavior?).
- The participants’ DSM-IV-J scores permitted the investigators to establish three groups: Not at risk (i.e., endorsed no items on the scale); At-risk (i.e., endorsed 1-3 items on the scale); and PGs (i.e., endorsed 4 or more items on the scale).
- The authors conducted a series of hierarchical multiple regression analyses to examine associations between gambling-related problems and the frequency and type of video game playing.

## **Results**

- Table 1 indicates the gambling frequency (i.e., the number of video-game sessions per year) of various types of video game play among the three gambling groups.
  - The results indicate that the PG and At Risk groups played arcade, phone, hand-held, and TV games more frequently than the Not at Risk group and the At Risk group played PC games more frequently than the Not at Risk group.
- Participants who played video-games daily (n=574) had significantly higher DSM-IV-J scores ( $p < .001$ ) than their counterparts who did not play or played video games less frequently ( $M = 0.41$ ,  $SD = 1.25$  and  $M = 0.16$ ,  $SD = 0.78$  respectively).

**Table 1 Gambling Groups in Relation to Frequency of Video-Game Play in the Past Year (adapted from Delfabbro et al., 2009).**

	Not at Risk Group 1 n=2,144	At Risk Group 2 n=151	Pathological Group 3 n=54	F(2,2346)	Post hoc Comparisons	Effect Size $\eta^2$
	M (SD)	M (SD)	M (SD)			
Arcade Games	29.97 (71.52)	51.83 (87.61)	91.00 (121.19)	23.19**	3 > 2, 1; 2 > 1	0.02
Phone Games	96.78 (106.57)	132.57 (116.57)	163.17 (135.04)	18.27**	3 > 1; 2 > 1	0.01
Hand-held Games	53.36 (96.26)	52.33 (94.40)	119.24 (138.70)	13.02**	3 > 1, 2	0.01
TV Games	149.25 (112.93)	178.65 (123.79)	194.13 (133.48)	9.19**	3 > 1; 2 > 1	0.01
PC Games	127.55 (119.30)	156.82 (127.02)	140.49 (128.77)	4.65*	2 > 1	<0.01

Click image to enlarge, or adjust your browser's zoom setting.

\* $p < 0.01$  and \*\* $p < 0.001$

Effect sizes:  $\eta^2$ : 0.01-0.06 = small effect size; 0.07-0.13 = moderate effect size; 0.14+ = large effect size

## Limitations

- This survey relies on self-report.
- The researchers used a cross-sectional design that does not allow for exploration of causal relationships between video-game playing and gambling. This does not take common factors (e.g., interaction between players and technology, and structural characteristics of the game such as lighting and sounds) into consideration that might account for the association between video gaming and gambling.
- Because of the selection procedures, the participants might not be representative of their schools, their classes, youthful gamblers, or youthful video game players.
- The authors used the number of students as the total degrees of freedom in their statistical analyses. However, the cluster sampling within schools yields fewer degrees of freedom and without adjustment, the power of the statistical tests is exaggerated.
- The DSM-IV-J items shift time frames (i.e., past year, presently, and lifetime). As a result, it is not possible to determine if gambling-related problems are current or in the past.

## Conclusion

The results indicated significant associations between various types of video-gaming and gambling-related problems. However, the effect sizes were very small; this suggests that frequent video-game playing accounts for only a small part of the relationship between video game playing and gambling-related problems among adolescents. The inconsistency within the results (e.g., PC games were protective of PG, but hand-held games did not show a difference between no

risk and at risk) suggests that other factors might better explain the association between video games and gambling-related problems. Future research should consider exploring additional factors (e.g., social/family influences, personality, beliefs etc.) that extend beyond frequency of playing video games that may explain why some adolescents experience gambling-related problems.

-Tasha Chandler

What do you think? Please use the comment link below to provide feedback on this article.

## References

Delfabbro, P. H., King, D., Lambos, C., & Puglies, S. (2009). Is video-game playing a risk factor for pathological gambling in Australian adolescents? *Journal of Gambling Studies*, 25(3), 391-405.

Delfabbro, P. H., Lahn, J., & Grabosky, P. (2005). *Adolescent gambling: A report on recent ACT research*. Canberra: ACT Gambling and Research Commission.

Welte, J. W., Barnes, G. M., Tidwell, M.-C. O., & Hoffman, J. H. (2009). The association of form of gambling with problem gambling among American youth. *Psychology of Addictive Behaviors*, 23(1), 105-112.