

Press Start to Distract: A Longitudinal Investigation of Reciprocal Effects Between Video Game Playing and ADHD Symptoms in Children Aged 6 to 10



Authors: Gabriel A. Tiraboschi¹, Caroline Fitzpatrick¹, Luísa Superbia-Guimarães², Gabrielle Garon-Carrier¹

¹Université de Sherbrooke, Canada

²University of Leeds, UK



INTRO

- Video game playing is associated with ADHD symptoms among children and adolescents (Nikkelen et al., 2014).
- Most research has been cross-sectional (Beyens et al., 2018).
- Limited longitudinal research has found that video game playing precedes and predicts more ADHD symptoms among adolescents (Ra et al., 2018; Tiraboschi et al., 2022).
- The direction of this association before adolescence remains unclear.

OBJECTIVE

To estimate bidirectional associations between video game playing and ADHD symptoms among school-aged children.

METHODS

- Sample:** Quebec Longitudinal Study of Child Development N = 1,703 (827 boys and 876 girls).
- Measures:** Repeated measures of video game playing time and ADHD symptoms at ages 6, 7, 8, and 10.
 - Video game:** Parent reports of children weekly playing time.
 - ADHD symptoms:** Hyperactivity/inattention symptoms reported by the teacher ($\alpha = 0.90$ to $\alpha = 0.91$).
- Analysis:** Random Intercept Cross-Lagged Panel Model.

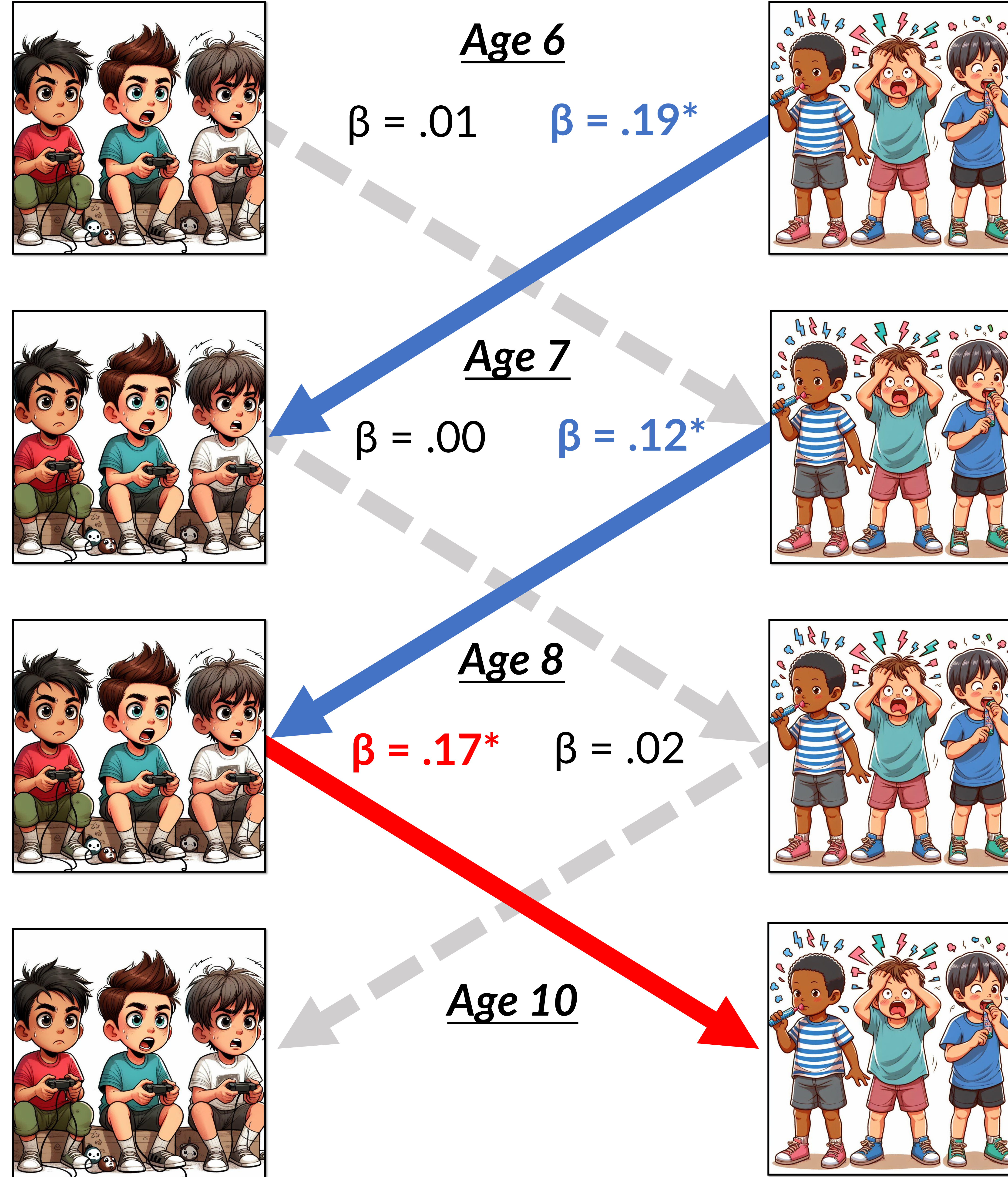
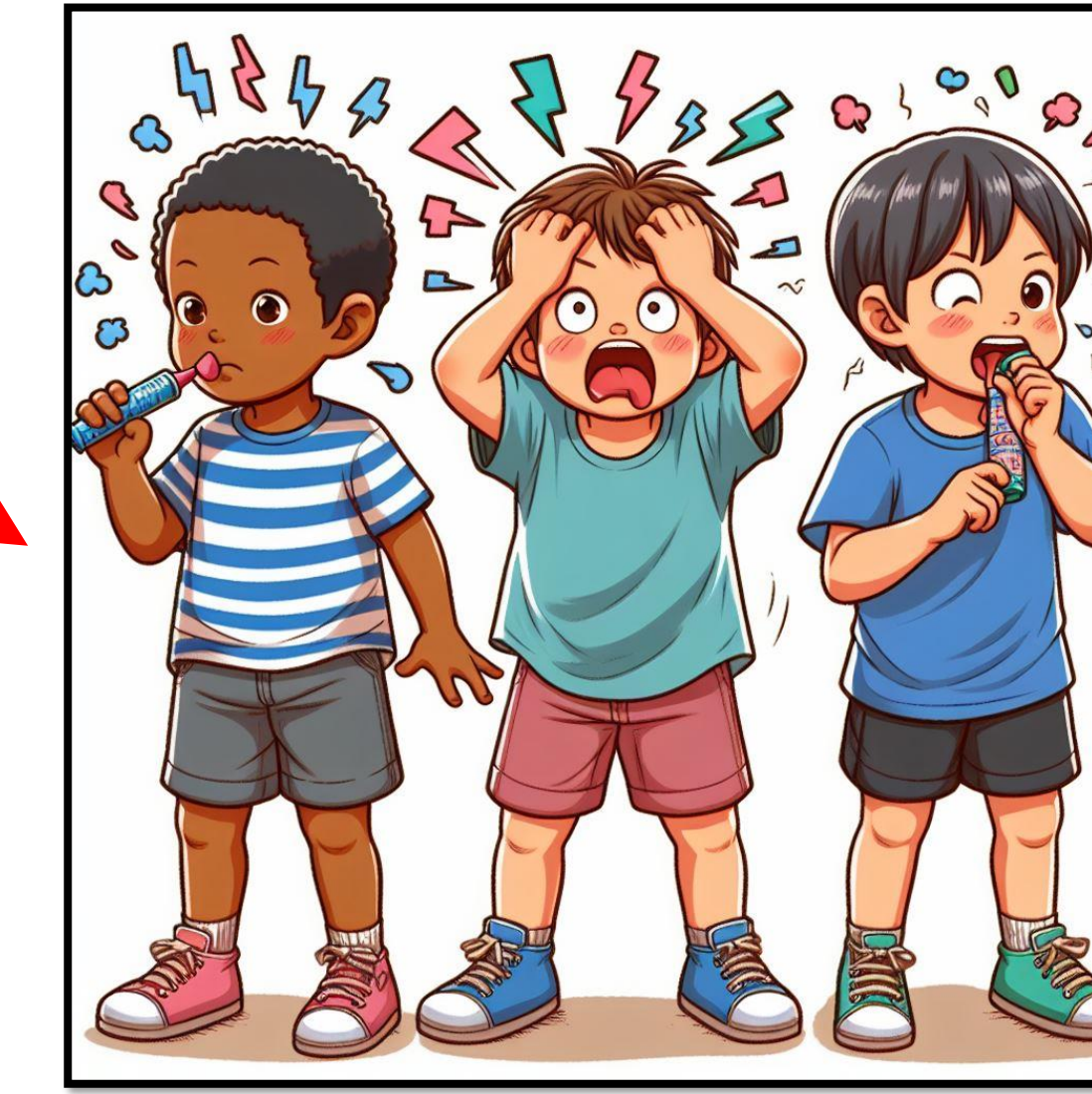
RESULTS

- Good fit indices (RMSEA = .035, Robust CFI = .989, and $\chi^2 = 27.389$, $p = .001$).
- Cross-lagged results are presented in Figure 1.
- No between-person associations ($\beta = .075$; 95% CI [-.040, .189]).

Video game playing



ADHD Symptoms



CONCLUSIONS

These findings suggest a developmental feedback loop, where children with more hyperactive and inattentive symptoms tend to devote more time to playing video games. In turn, this increased video game consumption in the early school years may contribute to worsening hyperactivity and inattention symptoms later in development.

ADDITIONAL INFORMATION

- Data compiled from the final master file of the Québec Longitudinal Study of Child Development (1998-2023), ©Gouvernement du Québec, Institut de la statistique du Québec, Canada.
- Our study describes findings from the elementary school follow-up that took place at ages 6 (n= 1529), age 7 (n= 1537), age 8 (n= 1526) and 10 (n= 1402) between the years 2005 and 2008.
- Missing data ranged from 12% (video game playing at age 6) to 43% (hyperactivity and inattention symptoms at age 6). We used Full Information Maximum Likelihood to handle missing data.
- Recommended cut-off points to interpret the effect sizes of cross-lagged paths are $< .07$ (small), $.07$ to $.11$ (medium), and $\geq .12$ (large) (Orth et al., 2022).
- If you are interested in this study, please email me at gabriel.arantes.tiraboschi@usherbrooke.ca.
- Scan the QR code below to access tables containing full results and descriptive statistics.



Figure 1. Results of the Random Intercept Cross-Lagged Panel Model. Straight dashed arrows depicts non-significant associations. Straight solid arrows represents significant associations. β represents standardized coefficients of the cross-lagged paths. Asterisk* represents significant associations $p < .05$.