

# The WAGER, Vol. 14(3) - The early bird is even earlier: predicting gambling behavior in kindergarten

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Youth gambling is a potential precursor and a possible indication of pathological gambling later in life (Pagani, Derevensky, & Japel, 2009; Proimos, DuRant, Pierce, & Goodman, 1998). In a prospective longitudinal study, Pagani et al. (2009) examine the correlation between early childhood (i.e., kindergarten) impulsive behavior and youth (i.e., sixth grade) gambling activities.

## Methods

- Researchers recruited the children and parents from the kindergarten cohort from the Montreal Longitudinal Preschool Study
  - The authors followed 377 children exclusively selected from intact families
  - The final sample (n= 163) included children with complete youth and parental gambling involvement information from both kindergarten and sixth grade
- Youth Gambling was the dependent variable
  - Assessed via self-report by telephone interview
  - Measured via a 5-item scale to determine past year youth gambling involvement
    - How many times have you done the following: cards; bingo; bought lottery (instant or sports); played video games for money; placed bets at sports venues
    - Scoring: 0 (never) to 3 (once per week or more)
- Early Impulsive Behavior was the independent variable
  - Assessed via completion of the Social Behavior Questionnaire (assessment of children's behavioral adjustment and current psychosocial adjustment) by children's kindergarten teacher
    - Impulsivity was measured in a 9-item subscale ( $\alpha=.91$ ) (combination of inattentiveness, distractibility, hyperactive factors)

- Scoring: reverse scoring of 1 (often or very true) to 3 (never or not true) followed by summation
- Researchers used two models to measure the correlation
  - The simple model used impulsivity alone
  - The controlled model combined impulsivity with the following covariates:
    - Gender: there are gender differences for ADHD and gambling
    - Maternal education: can represent other unmeasured parental characteristics and explains the home environment and its effect on youth behavior
    - Family dysfunction: correlated with ADHD and gambling
    - Parental gambling: if present it can easily be an example to children
    - Emotional distress (e.g., depression symptoms): ADHD and depression, and gambling and depression can coexist together

## Results

- Early childhood impulsivity is significantly correlated to youth gambling
  - According to both models, a 1-unit increase in teacher-reported early childhood impulsivity associated with a corresponding 25% increase in later self-reported youth gambling activities (see Table 1)
- When controlling for impulsivity, others variables (i.e., maternal education, family dysfunction, parental gambling, emotionally distressed behavior (e.g., depression symptoms)) are not significant.

**Table 1. Prediction of Youth Gambling Behavior by Early Childhood Impulsivity (from Pagani et al., 2009)**

Characteristic	Simple Model <sup>a</sup> Standardized $\beta$	Fully Controlled Model <sup>a</sup> Standardized $\beta$	Unstandardized <sup>b</sup> $\beta$
<b>Impulsivity</b>	<b>0.25 (0.2) [p=.008]</b>	<b>.25 (.02)</b>	<b>-.06 (-.02 to .11)</b>
Sex		.10 (.22)	.24 (-.19 to .67)
Emotional Distress		.14 (.06)	-.10 (-.03 to .22)
Family Functioning		.02 (.02)	.01 (-.03 to .04)
Maternal Education		.11 (.22)	.28 (-.17 to .72)
Parental Gambling		.05 (.15)	.09 (-.20 to .38)

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

a For the simple model, R<sup>2</sup>=0.06; for the fully controlled model, R<sup>2</sup>=0.16

b The CIs, based on unstandardized  $\beta$ s, are derived for the fully controlled model

## **Limitations**

- Self-report of gambling activity (by parents and children at six-year follow-up)
- Proxy report of early childhood impulsivity by kindergarten teachers
- Study did not include clinical diagnoses of ADHD (or other disorders associated with gambling problems)
- Low follow-up rate (i.e., 48%)

## **Conclusion**

Youth gambling is a public health issue. Youth gambling can also be a precursor to later pathological gambling (Pagani et al., 2009; Proimos et al., 1998). Youth gambling is a dangerous activity because it can lead to (1) situations that young adolescents might not have the experience or maturity to handle and (2) gambling related problems later in life. The study of kindergarten behavior could potentially lead to an over analysis of simple childhood activities (i.e., instead of appreciating a child's exuberance, parents will start to fear the advent of compulsive gambling). However this study's findings, that excessive childhood impulsivity has a possible correlation to youth gambling, are promising because these results might lead to better early prevention methods. Despite its limitations, Pagani et al.'s work provided important longitudinal evidence; it will be interesting to see if the suggested correlation between impulsivity and gambling will continue to manifest itself as the participants grow older.

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## **References**

- Pagani, L. S., Derevensky, J. L., & Japel, C. (2009). Predicting gambling behavior in sixth grade from kindergarten impulsivity: a tale of developmental continuity. *Arch Pediatr Adolesc Med*, 163(3), 238-243.
- Proimos, J., DuRant, R. H., Pierce, J. D., & Goodman, E. (1998). Gambling and other risk behaviors among 8th- to 12th-grade students. *Pediatrics*, 102(2), 1-6.