

Childhood ADHD and tobacco smoking: Examination of a social mediational model

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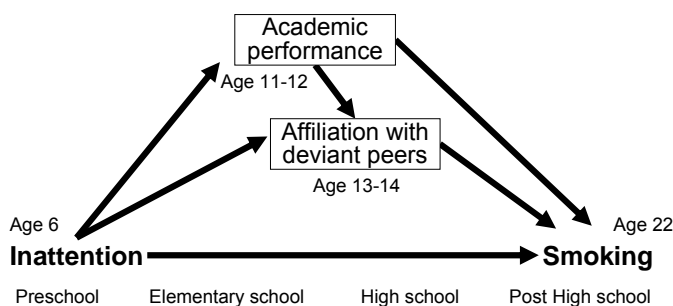
INTRODUCTION

- Attention-deficit/hyperactivity disorder (ADHD) is an important risk factor for tobacco smoking.
- An increasing number of studies suggest that inattention symptoms, more than the hyperactive-impulsive dimension, may account for the observed association between ADHD and tobacco use.
- Some authors have suggested that social processes may be responsible for the specific relationship between inattention and smoking, but few hypotheses have been tested empirically.

OBJECTIVE

The present study aims at examining:

- A multiple mediation model stipulating that the specific association between childhood inattention and adult smoking is explained by the experience of academic difficulties and the subsequent affiliation with deviant peer groups.



METHOD

Sample

- 669 male participants followed from age 6 to 22

Measures

- Inattention and hyperactivity symptoms (age 6): Teacher ratings of classroom behaviour (QCEP)
- Tobacco smoking (age 22): Do you currently smoke cigarettes? (every day, sometimes, never)
- Proposed mediators:
 - Academic performance (age 11-12): Teacher ratings of achievement in French (1st language) and Mathematics
 - Affiliation with deviant peers (age 13-14): How many of your friends have been arrested by the police? (none, 1 or 2, many, almost all)
- Control variables:
 - Conduct disorder (CD) symptoms (age 6)
 - SES-Occupational prestige (age 6)
 - Parental tobacco smoking (age 13-14)

Statistical procedure

- Multivariate extension of the product of coefficient strategy
- Logistic regression

RESULTS

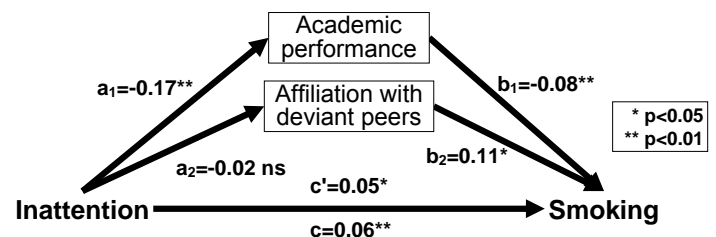
- When childhood inattention and hyperactivity symptoms are considered conjointly, along with CD symptoms, SES and parental smoking, only the former significantly predict adult smoking (Inattention: $\chi^2_{\text{wald}} = 7.23$, OR = 1.24, $p = .007$; Hyperactivity: $\chi^2_{\text{wald}} = 0.12$, $p = .734$).
- Academic achievement in 5th and 6th grade does not predict deviant peer affiliation at 13 and 14 years of age when inattention, hyperactivity and CD symptoms, as well as SES and parental smoking are controlled ($\chi^2_{\text{wald}} = 1.29$, $p = .257$).
- Academic performance partially mediates the relationship between ADHD and smoking but deviant peer affiliation does not (see table 1).

Table 1. Bootstrapped Coefficients and Confidence Intervals for the Total and Specific Indirect Effects

	Product of Coefficients		Bootstrapping	
	Coefficients	SE	BC 95% CI	
			Lower limit	Upper limit
Total	0.01	0.01	0.000	0.023
Academic performance	0.01	0.01	0.004	0.024
Affiliation with deviant peers	0.00	0.00	-0.009	0.002

Note: BC = bias corrected; CI = confidence intervals; 3000 bootstrapped samples

- The link between inattention symptoms and smoking remains significant when both potential mediators and control variables are considered ($c' = 0.05$, $p = .04$).



CONCLUSION

- This study replicates the results of previous studies showing that childhood ADHD independently predicted adult tobacco smoking and that attention deficits accounted for most of the association between these two phenomena.
- Poor academic achievement partially mediates the relationship between inattention and smoking, whereas affiliation with deviant peers does not, suggesting that mechanisms other than gravitation towards non-conformist peer groups explain why inattentive children experiencing academic difficulties are at greater risk of smoking in adulthood.
- The residual link between inattention and smoking suggests that other variables may mediate this association or that these two phenomena may share common etiological factors.
- Results suggest that a better handling of the cognitive symptoms associated with ADHD and greater support of ADHD children towards academic success could attenuate the risk of smoking conferred by the disorder.
- Future studies should investigate other potential mediators of the association between attention deficits and tobacco use, as well as possible shared etiologies (i.e., neurobiological), in order to shed more light on this complex relationship and offer additional intervention targets

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