

## Introduction

- Early substance use initiation is associated with poor physical and mental health, lower academic success, and higher engagement in delinquent behavior and deviant peer groups (Ary et al., 1999; Cho, Hallfors, & Iritani, 2007; Fergusson, Lynskey, & Horwood, 1996).
- Two family processes, parent coercion and parent disengagement, have been identified as key risk factors for early substance use initiation (Anderson & Henry, 1994; Cordova et al., 2014; Van Ryzin, Fosco, & Dishion, 2012).
- Adolescent aggression has also been associated with substance use (Benson & Buehler, 2012; Fosco, Stormshak, Dishion, & Winter, 2012).
- Aggressive youth behavior may evoke harsh responses from parents, leading to coercive interactions. Or, conflict over youth problem behavior may decrease family connectedness, leading to disengagement, creating a space for youth to engage in substance use.

## The Present Study

- Evaluates two family risk processes, coercion and disengagement, typically studied in isolation, together in one model predicting adolescent substance use.
- The primary aim of this study is to evaluate whether early adolescent aggression may be a moderator of family process models for risk for substance use.
- **Hypothesis 1:** Disengaged parenting, coercive parenting, and aggression will predict substance use at Grade 9.
- **Hypothesis 2:** Aggression at Grade 6 will moderate the relationship between parenting behaviors at Grade 6 and substance use at Grade 9.

## Method

### Participants and Procedure

- 6<sup>th</sup> graders and families from PROSPER project
- Two-parent families
- 80% retention rate across waves
- 61% of families resided in Iowa, and 39% in Pennsylvania
- Median household income = \$55,000 (2003).

N=687 Families	
Gender:	360 (52.4%) Female
Age:	
Adolescents	11.27 (SD = 0.49)
Mothers	38.93 (SD = 5.56)
Fathers	41.24 (SD = 6.75)
Ethnicity:	
White	80%
Hispanic	5%
African American	1%
Other	4%

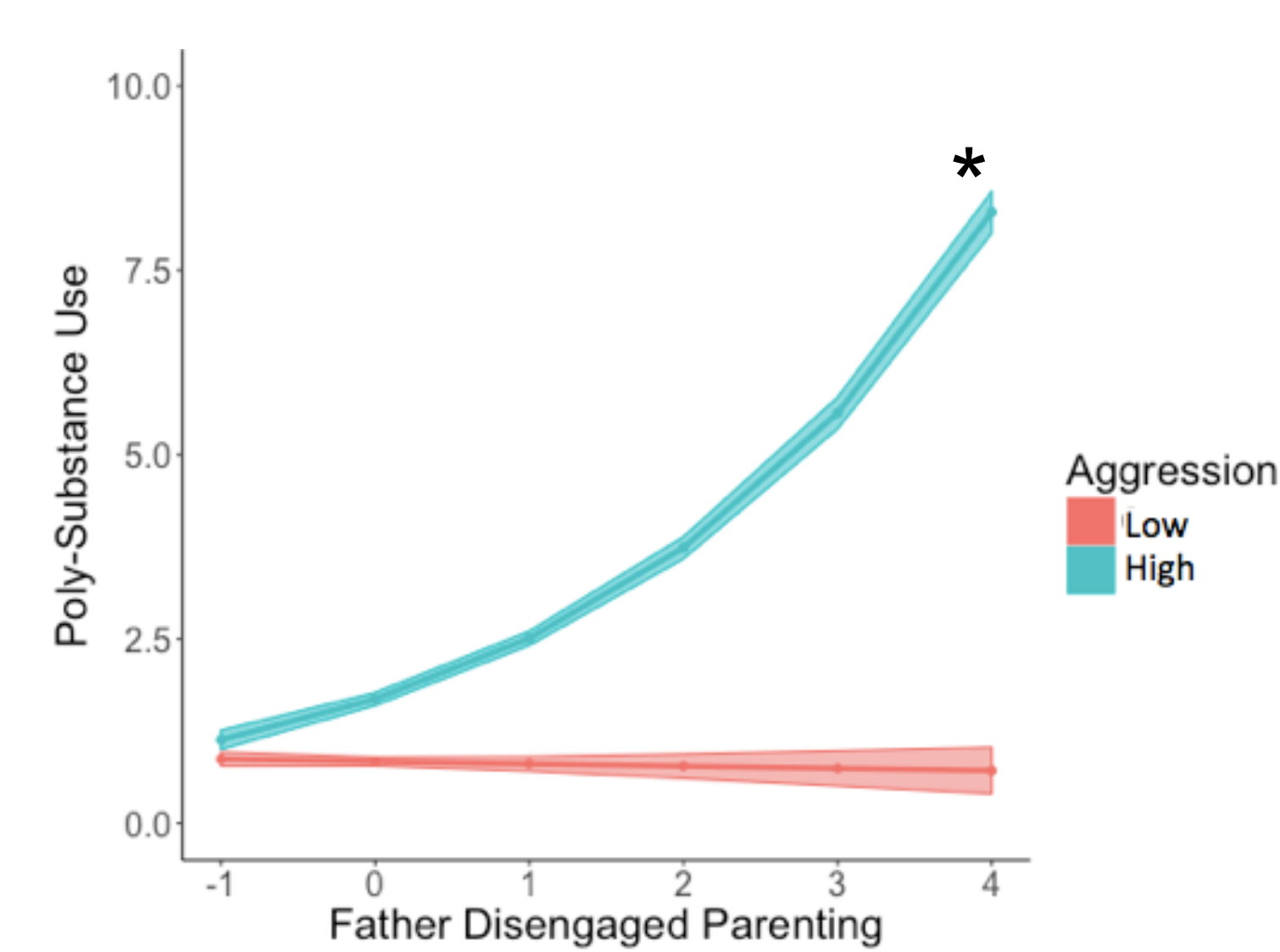
## Results

**Table 1. Poisson Regression of Father Parenting Predicting Poly-Substance Use at Grade 9.**

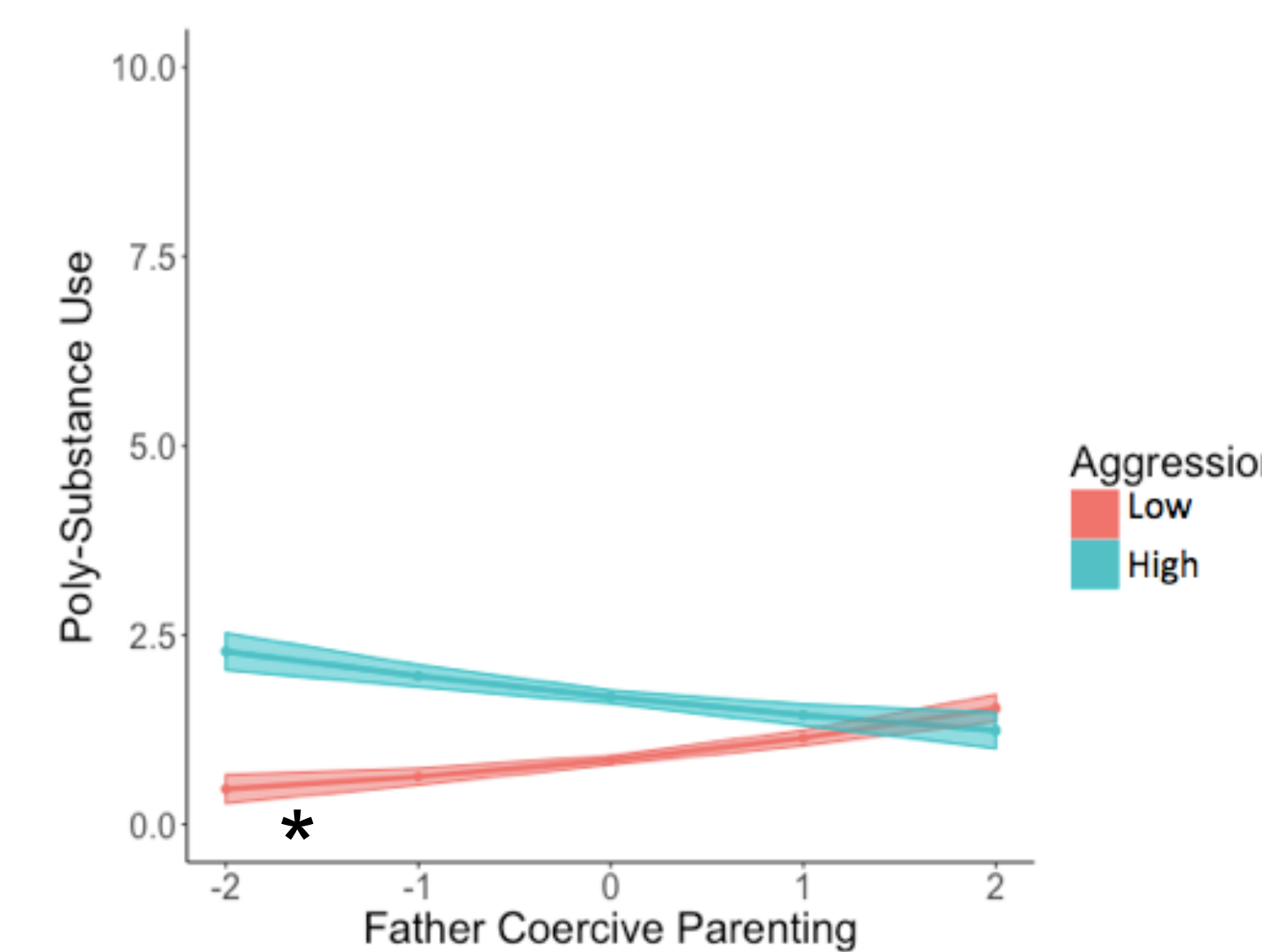
Variable	B	SE	IRR	95% CI
Disengaged Parenting	<b>0.158</b>	0.06	1.17	(1.05, 1.30)
Coercive Parenting	0.130*	0.07	1.14	(0.99, 1.30)
Youth Aggression	<b>0.730</b>	0.10	2.07	(1.70, 2.52)
Disengaged Parenting*Youth Aggression	<b>0.489</b>	0.11	1.63	(1.30, 2.04)
Coercive Parenting*Youth Aggression	<b>-0.443</b>	0.14	0.64	(0.48, 0.85)
Disengaged Parenting*Coercive Parenting	-0.073	0.06	0.93	(0.82, 1.04)
Disengaged*Coercive*Aggression	0.068	0.12	1.07	(0.85, 1.35)

Note. N=687. Bolded values are significant:  $p < .01$ . \* indicates marginal significance. IRR is incidence rate ratio, which is equivalent to  $e^B$ . 95% CI is about the IRR.

**Figure 1. Interaction for Father Disengaged Parenting and Youth Aggression**



**Figure 2. Interaction for Father Coercive Parenting and Youth Aggression**



**Table 2. Poisson Regression of Mother Parenting Predicting Poly-Substance Use at Grade 9.**

Variable	B	SE	IRR	95% CI
Disengaged Parenting	-0.028	0.06	0.97	(0.87, 1.09)
Coercive Parenting	<b>0.180</b>	0.06	1.20	(1.06, 1.35)
Youth Aggression	<b>0.711</b>	0.09	2.04	(1.70, 2.44)
Disengaged Parenting*Youth Aggression	<b>0.312</b>	0.13	1.37	(1.06, 1.76)
Coercive Parenting*Youth Aggression	<b>-0.230</b>	0.13	0.74	(0.57, 0.96)
Disengaged Parenting*Coercive Parenting	-0.041	0.04	0.96	(0.87, 1.04)
Disengaged*Coercive*Aggression	<b>-0.324</b>	0.14	0.72	(0.55, 0.95)

Note. N=687. Bolded values are significant:  $p < .01$ . IRR is incidence rate ratio, which is equivalent to  $e^B$ . 95% CI is about the IRR.

**Figure 3. 3-way Interaction for Mother Coercive Parenting and Disengaged Parenting**

Figure 3A. High Aggression Group

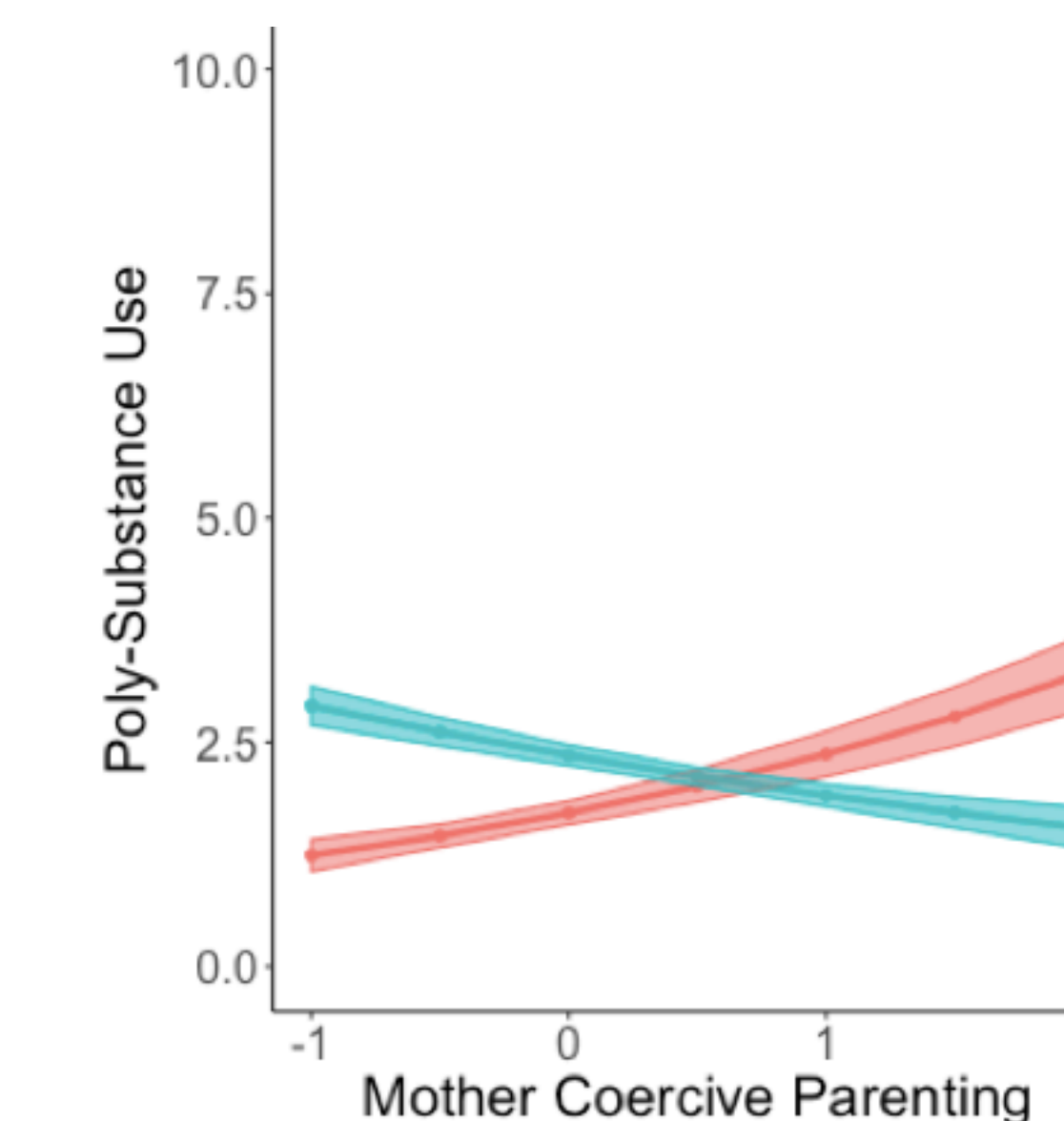
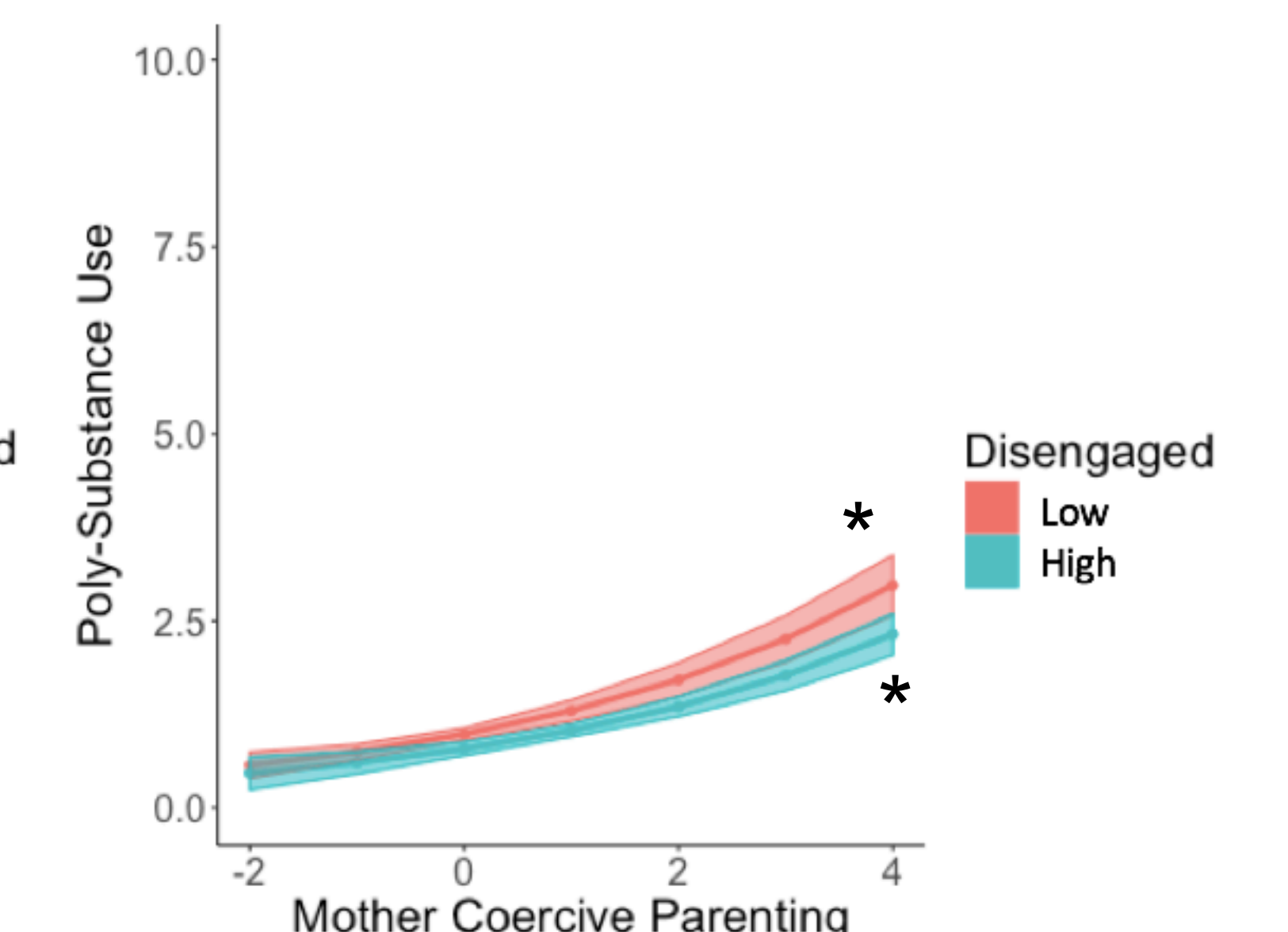


Figure 3B. Low Aggression Group



## Measures

Variable	Reporter	Scales	$\alpha$
Adolescent Aggression	Youth	Hostile-Aggressive Behavior Scale (4-items)	0.63
Coercive Parenting	M/F	Composite of 3 scales: Anger Management (reverse-scored) Negative P-C Affective Quality (reverse-scored) Recurring Conflict (reverse-scored)	0.73/0.72 0.82/0.80 0.70/0.68
Disengaged Parenting	M/F	Composite of 2 scales: Parental Guidance (reverse-scored) Parental Support (reverse-scored)	0.74/0.75 0.79/0.86
Poly-Substance Use initiation	Youth	Count of substances initiated: drunkenness, cigarettes, marijuana, inhalants, ecstasy, prescription drugs, pain killers.	0.77

## Discussion

- Adolescents who were more aggressive at Grade 6 and experienced disengaged parenting were more likely to use one or more substances at Grade 9.
- Adolescents who were less aggressive at Grade 6 and experienced coercive parenting were more likely to use one or more substances at Grade 9.
- Less aggressive youth may experience mother coercive and disengaged parenting as a risk for substance use, while aggressive youth may be less affected by these processes.
- Future studies should incorporate multiple family risk processes when studying adolescent substance use. Furthermore, future work should consider the role of aggression, as well as other adolescent characteristics when assessing the impact of different risk processes on substance use outcomes.

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