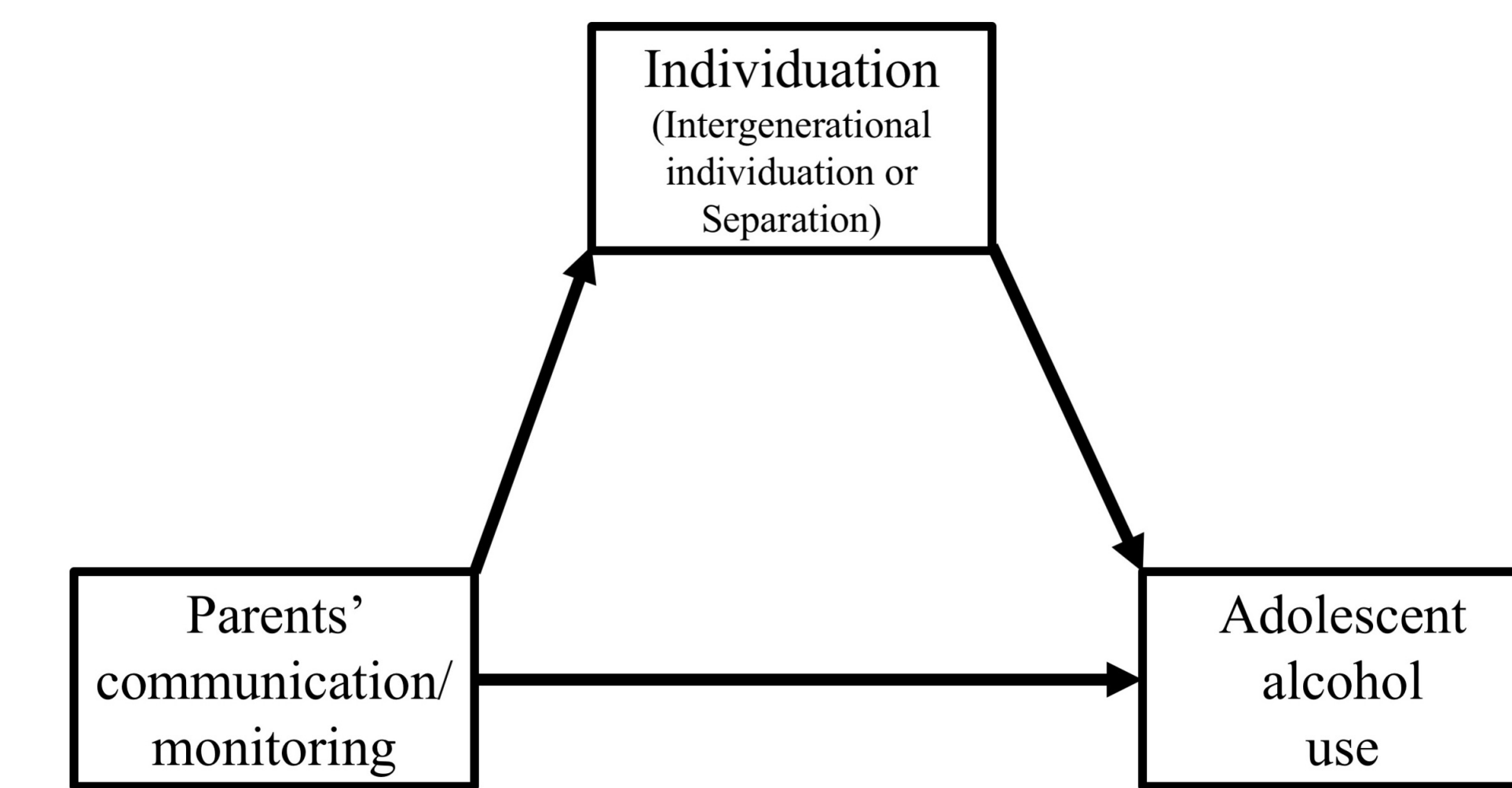# Multilevel mediation of parents' monitoring, communication, adolescent individuation and alcohol use

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Individuation
(Intergenerational individuation or Separation)

Parents' communication/ monitoring → Adolescent alcohol use

Background

- Adolescent alcohol use continues to be a major health issue in the United States (Johnston et al., 2019).
- Development of *individuation* is an important protective and risk factor during adolescence (Baer & Bray, 1999); a domain that involves the following:
  - Intergenerational individuation: development of autonomy in the context of health family relationships
  - Separation: associated with emotional and physical detachment from parents and susceptibility to peer pressure.
- During the middle school years, more separation is associated with less communication with mothers and with more adolescent alcohol use (Bray et al., 2000).
- More intergenerational individuation is also associated with more communication with mothers (Bray et al., 2000)
- More monitoring from parents is associated with less adolescent alcohol use (e.g., Van Ryzin et al., 2012)
- This study examined the co-occurring relationships of parents' monitoring and communication, individuation (i.e., intergenerational individuation and separation), and adolescent alcohol use across the high school years.

Research Hypotheses

1. More parental monitoring and better parent-adolescent communication is associated with less adolescent alcohol use, both between and within individuals over time
2. These associations are mediated by intergenerational individuation and emotional separation from parents

Multilevel Mediation Model Predictors of Adolescent Alcohol Use

Mothers' communication and Int. individuation model

Direct effects	Estimate	SE	df	t	p
Outcome: Intergenerational individuation					
Within-person effects					
Intercept	2.00	.04	4047.70	49.64	<.001
Mothers' communication	.21	.01	2935.78	19.63	<.001
Between-person effects					
Mothers' communication	.37	.01	4047.23	32.66	<.001
Outcome: Adolescent alcohol use					
Within-person effects					
Intercept	2.26	.06	4026.96	35.03	<.001
Mothers' communication	-.08	.01	2160.21	-6.51	<.001
Intergenerational individuation	-.02	.01	2187.84	-1.42	.15
Between-person effects					
Mothers' communication	-.09	.02	4116.01	-5.77	<.001
Intergenerational individuation	-.07	.02	4099.97	-3.73	<.001

Indirect effects	Estimate	SE	Z	p
Within-person	-.004	.00	-1.41	.16
Between-person	-.03	.01	-3.70	<.001

Model fit: AIC = 84985.09; BIC = 85113.99

Mothers' monitoring and Int. individuation model

Direct effects	Estimate	SE	df	t	p
Outcome: Intergenerational individuation					
Within-person effects					
Intercept	2.03	.05	4080.47	45.42	<.001
Mothers' monitoring	.13	.01	2807.59	13.16	<.001
Between-person effects					
Mothers' monitoring	.36	.01	4062.26	28.78	<.001
Outcome: Adolescent alcohol use					
Within-person effects					
Intercept	2.68	.07	4032.02	41.17	<.001
Mothers' monitoring	-.13	.01	2209.94	-11.73	<.001
Intergenerational individuation	-.01	.01	2150.30	-1.13	.26
Between-person effects					
Mothers' monitoring	-.29	.02	4089.09	-18.08	<.001
Intergenerational individuation	.01	.02	4061.69	.74	.46

Indirect effects	Estimate	SE	Z	p
Within-person	-.002	.00	-1.12	.26
Between-person	.01	.01	.74	.46

Model fit: AIC = 85253.86; BIC = 85382.73

Mothers' communication and Separation model

Direct effects	Estimate	SE	df	t	p
Outcome: Intergenerational individuation					
Within-person effects					
Intercept	9.97	.06	4084.88	165.7	<.001
Mothers' communication	-.64	.01	2657.35	-44.99	<.001
Between-person effects					
Mothers' communication	-1.00	.02	4085.33	-59.84	<.001
Outcome: Adolescent alcohol use					
Within-person effects					
Intercept	.88	.14	4064.17	6.26	<.001
Mothers' communication	-.05	.01	2573.26	-3.83	<.001
Separation	.05	.01	2728.87	6.34	<.001
Between-person effects					
Mothers' communication	.01	.02	4055.81	.25	.80
Separation	.12	.01	4051.21	9.44	<.001

Indirect effects	Estimate	SE	Z	p
Within-person	-.03	.01	-6.27	<.001
Between-person	-.12	.01	-9.32	<.001

Model fit: AIC = 100376.90; BIC = 100505.80

Mothers' monitoring and Separation model

Direct effects	Estimate	SE	df	t	p
Outcome: Intergenerational individuation					
Within-person effects					
Intercept	9.50	.07	4102.71	128.2	<.001
Mothers' monitoring	-.44	.01	2756.88	-31.08	<.001
Between-person effects					
Mothers' monitoring	-.87	.02	4087.31	-41.96	<.001
Outcome: Adolescent alcohol use					
Within-person effects					
Intercept	2.42	.12	4056.77	20.40	<.001
Mothers' monitoring	-.12	.01	2355.86	-10.11	<.001
Separation	.04	.01	2425.48	5.37	<.001
Between-person effects					
Mothers' monitoring	-.26	.02	4041.08	-14.86	<.001
Separation	.03	.01	4034.11	2.72	.007

Indirect effects	Estimate	SE	Z	p
Within-person	-.02	.00	-5.29	<.001
Between-person	-.03	.01	-2.71	.007

Model fit: AIC = 102634.40; BIC = 102673.30

Fathers' communication and Int. individuation model

Direct effects	Estimate	SE	df	t	p
Outcome: Intergenerational individuation					
Within-person effects					
Intercept	2.55	.04	4000.07	70.95	<.001
Fathers' communication	.11	.01	2723.13	11.36	<.001
Between-person effects					
Fathers' communication	.23	.01	3979.97	21.04	<.001
Outcome: Adolescent alcohol use					
Within-person effects					
Intercept	2.25	.06	3951.84	34.82	<.001
Fathers' communication	-.06	.01	1928.00	-5.70	<.001
Intergenerational individuation	-.02	.01	2070.73	-1.75	.08
Between-person effects					
Fathers' communication	-.08	.01	4014.63	-5.86	<.001
Intergenerational individuation	-.09	.02	3973.41	-4.74	<.001

Indirect effects	Estimate	SE	Z	p
Within-person	-.003	.00	-1.73	.08
Between-person	-.02	.01	-4.62	<.001

Model fit: AIC = 82580.93; BIC = 82709.13

Fathers' monitoring and Int. individuation model

Direct effects	Estimate	SE	df	t	p
Outcome: Intergenerational individuation					
Within-person effects					
Intercept	2.63	.03	4013.28	82.40	<.001
Fathers' monitoring	.07	.01	2432.23	8.89	<.001
Between-person effects					
Fathers' monitoring	.22	.01	3980.14	21.46	<.001
Outcome: Adolescent alcohol use					
Within-person effects					
Intercept	2.33	.06	3955.98	37.75	<.001
Fathers' monitoring	-.08	.01	1827.88	-8.87	<.001
Intergenerational individuation	-.02	.01	2062.45	-1.84	.07
Between-person effects					
Fathers' monitoring	-.16	.01	4013.32	-12.37	<.001
Intergenerational individuation	-.05	.02	3977.51	-2.67	.008

Indirect effects	Estimate	SE	Z	p
Within-person	-.002	.00	-1.79	.07
Between-person	.01	.00	-2.65	.008

Model fit: AIC = 82831.89; BIC = 82960.10

Fathers' communication and Separation model

Direct effects	Estimate	SE	df	t	p
Outcome: Intergenerational individuation					
Within-person effects					
Intercept	8.74	.06	3986.71	152.6	<.001
Fathers' communication	-.46	.01	2648.94	-32.89	<.001
Between-person effects					
Fathers' communication	-.74	.02	3968.35	-41.51	<.001
Outcome: Adolescent alcohol use					
Within-person effects					
Intercept	.98	.11	4071.99	8.80	<.001
Fathers' communication	-.03	.01	1979.88	-3.25	<.001
Separation	.06	.01	2430.24	7.69	<.001
Between-person effects					
Fathers' communication	-.01	.02	4048.62	-.93	.35
Separation	.12	.01	4017.13	10.21	<.001

Indirect effects	Estimate	SE	Z	p
Within-person	-.03	.01	-7.49	<.001
Between-person	-.09	.01	-9.91	<.001

Model fit: AIC = 98572.75; BIC = 98700.95

Fathers' monitoring and Separation model

Direct effects	Estimate	SE	df	t	p
Outcome: Intergenerational individuation					
Within-person effects					
Intercept	8.44	.05	3995.09	165.2	<.001
Fathers' monitoring	-.35	.01	2553.02	-28.11	<.001
Between-person effects					
Fathers' monitoring	-.68	.02	3965.67	-40.89	<.001
Outcome: Adolescent alcohol use					
Within-person effects					
Intercept	1.59	.10	4074.52	15.24	<.001
Fathers' monitoring	-.07	.01	1778.21	-7.06	<.001
Separation	.05	.01	2403.77	6.74	<.001
Between-person effects					
Fathers' monitoring	-.12	.01	4034.99	-8.37	<.001
Separation	.07	.01	4023.14	6.21	<.001

Indirect effects	Estimate	SE	Z	p
Within-person	-.02	.00	-6.55	<.001
Between-person	-.05	.01	-6.14	<.001

Model fit: AIC = 99106.84; BIC = 99235.04

Methods

Participants and Procedures:

- Adolescents in high schools throughout the Houston, TX area completed a questionnaire package
- Data were collected once per semester beginning in spring of 9th grade through spring of 12th grade, for a total of 7 waves
- All participants in the current analysis completed at least two waves of data collection (N = 4,067)
- Sample included African American (24%), Mexican American (46%) and non-Hispanic White American (30%) students; 49.5% female

Measures:

- *Adolescent alcohol use:* assessed by asking adolescents how often they drank alcohol in the past 30 days ("None", "Once or twice", "3-5 times", "21-50 times")
- *Parent-adolescent communication*: 10 items reverse-scored, with higher scores reflecting better communication with mothers and fathers
- *Parental monitoring*: 7 items reverse-scored, with higher scores reflecting greater monitoring by mothers and fathers

Measures:

- *Intergenerational individuation:* 7 items from the *Personal Authority in the Family System Questionnaire* (Bray & Harvey, 1992) reflecting more adolescent individuation from parents (1-5 scale)
- *Separation:* 9 items from the *Emotional Autonomy Scale* (Steinberg & Silverberg, 1986), with higher scores reflecting *greater non-dependence* on and *less idealization* of parents (2-10 scale)

Data Analyses:

- Multilevel mediation models were assessed using the SPSS MLMed macro with restricted maximum likelihood
- Models estimated for fixed and random effects with 10000 Monte Carlo samples
- Eight models estimated with between- and within-person effects across the seven waves:
  - Mothers' and fathers' communication and monitoring (separately) predicting adolescent alcohol use, indirectly through adolescent intergenerational individuation and separation (separately)
- Given the number of estimations, significant direct and indirect effects estimated at p < .001

Results

- More parental monitoring and better parent-adolescent communication (between- and within-person) predicts:
  - More intergenerational individuation and less separation
  - Less adolescent alcohol use
- Indirect effects of communication and monitoring on adolescent alcohol use (between- and within-person)
  - Through separation
- Indirect effects of communication on alcohol use
  - Through intergenerational individuation (b/w person)

Discussion

- This study demonstrates how parental monitoring and better communication with parents and adolescent individuation predict less adolescent alcohol use over time.
- Developmental and interpersonal factors such as these are important to examine across the high school years, given adolescents' developing autonomy.
- These results demonstrate the continued importance of parental factors and fostering individuation past the middle school years (Bray et al., 2003).
- Clinicians and health researchers need to understand the roles of individuation and parents in adolescent alcohol use.