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Longitudinal, reciprocal relationships between family management and antisocial peer associations

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Abstract

Introduction: Poor family management and antisocial peer associations are related risk factors for negative outcomes such as adolescent substance misuse and conduct disorders. The relationship between family management and antisocial peer associations is complex. The purpose of this study was to test the reciprocal relationships between youth-reports of poor family management and antisocial peer associations over multiple time-points.

Methods: We used four data points (5th–11th grade) from the Australian arm of the longitudinal International Youth Development Study (IYDS) to test a random-intercepts cross-lagged path model (N = 922).

Results: The model fit the data well with path estimates showing that poor family management predicted greater antisocial peer associations at the next wave but not the reverse. A second model included a third autoregressive path to control for youth's own antisocial behavior; the direction of the relationships between poor family management and antisocial peer associations did not change.

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Conclusions: These results indicate that across adolescence poor family management predicts greater antisocial peer association, which provides evidence that family-focused interventions are an important prevention strategy even in adolescence.

Keywords

Parenting; parental monitoring; family management; peer relationships; adolescence; antisocial behavior

Poor family management (e.g., poor monitoring and ineffective limit setting) and antisocial peer associations are related risk factors for a host of negative behavioral outcomes (e.g., substance misuse, conduct disorders) in adolescence and young adulthood (Bank, Patterson, & Reid, 1987; Dishion & Loeber, 1985; Dodge et al., 2009; Espelage, Low, Rao, Hong, & Little, 2014; Fallu et al., 2010; Habib et al., 2010; Hemphill et al., 2011; Herrenkohl, Hill, Hawkins, Chung, & Nagin, 2006; Kliewer et al., 2017; Rodgers-Farmer, 2001; Van Ryzin, Fosco, & Dishion, 2012). During early adolescence, peers are a critical social influence as children become increasingly persuaded by the behavior of their friends and seek social acceptance by peers (Dishion & Owen, 2002; Dodge et al., 2009; Gifford-Smith, Dodge, Dishion, & McCord, 2005; Kelly et al., 2012; Spear, 2000). Parents can impact peer associations through family management practices related to children's activities and relationships; however, adolescents who associate with antisocial peers may resist or subvert parents' family management efforts. The temporal ordering between family management and antisocial peer relationships is not well understood but has important implications for prevention targets.

Few researchers have examined reciprocal relationships between family management and antisocial peer associations or antisocial behavior over multiple waves of longitudinal data in adolescent samples; those who have, tended to study antisocial behavior rather than antisocial peer associations. The Social Interaction Learning perspective, proposes that poor parenting practices precede increases in antisocial behavior and antisocial peer associations (Mehus et al., 2018; Patterson, 1982; Patterson, Forgatch, & DeGarmo, 2010). Some cross-lagged studies have supported this directionality (Simons-Morton, Chen, Hand, & Haynie, 2008; Van Ryzin et al., 2012) but studies have yielded somewhat disparate findings regarding the temporal ordering of family management and peer associations or antisocial behavior. Some variability in findings may be related to differences between developmental stages. For example, one study found antisocial behavior predicted less parental monitoring from 9–12 years old, while less monitoring predicted antisocial behavior from 13–16 years old (Yoo, 2017). Others have found reciprocal relationships between family management and antisocial behavior (Laird, Pettit, Bates, & Dodge, 2003; Willoughby & Hamza, 2011). However, most of these studies used standard cross-lagged models. A significant limitation of cross-lagged models in general (Hamaker, Kuiper, & Grasman, 2015), and in family management research specifically (Keijsers, 2016), is that standard cross-lagged models fail to capture within-person processes.

The present study significantly contributes to the literature by testing the reciprocal relationships between poor family management and antisocial peer associations across four

waves of data, spanning 5th–11th grade and accounting for within-person processes. In a second model, we also included youth's own antisocial behavior. This is significant because (a) few studies have collected the necessary longitudinal data to examine these relationships throughout adolescence, (b) most studies have focused on a youth's own antisocial behavior rather than antisocial peer associations, and (c) previous research used standard cross-lagged models, which fails to capture within-person processes. Based on the Social Interaction Learning model, we hypothesized that poor family management would predict increased association with antisocial peers but that the reverse would not be significant, even after controlling for youth's own antisocial behavior.

Methods

Sample

Data are from the International Youth Development Study (IYDS), which used a two-state cluster sampling strategy to recruit students in Victoria, Australia and Washington State, United States. The first wave began in 2001–2002 with the recruitment of almost 6,000 students enrolled in 5th, 7th, and 9th grades. Detailed descriptions of sampling and recruitment procedures are available elsewhere (McMorris, Hemphill, Toumbourou, Catalano, & Patton, 2007).

The analytic sample is comprised of Victorian students who were 5th graders in the first wave of data collection (in 2002). This subsample was used because it contained the greatest number of follow-up waves of data. Specifically, the analysis used the 5th, 7th, 9th, and 11th grade data for this cohort. We excluded participants identified as dishonest through specific survey items; the final analytic sample consisted of 922 youths (52% female).

Measures

The IYDS used a modified version of the *Communities that Care* survey, that included a range of measures with acceptable psychometric properties (Glaser, Horn, Arthur, Hawkins, & Catalano, 2005; Hemphill et al., 2011).

Family management.—This nine-item scale included youths' self-reported answers to items that asked about parental monitoring, limit setting, and parent's knowledge of their activities. Scale reliability was largely consistent across the four waves from 5th to 11th grade ($\alpha = .73, .82, .83, \text{ and } .82$, respectively). Examples of items include: "My parents ask if I've gotten my homework done," "My parents would know if I did not come home on time," "The rules in my family are clear," "When I am not at home, one of my parents knows where I am and who I am with," "My parents want me to call if I'm going to be late getting home," and "If you drank some alcohol without your parents' permission, would you be caught by your parents?" All items were rated on a four-point scale and coded so that higher scores indicated poor family management (4 = definitely no [NO!], 3 = no, 2 = yes, 1 = definitely yes [YES!]).

Antisocial peer associations.—This scale contained items that began with the sentence stem, "In the past year, how many of your best friends have..." Items included, "Been

suspended from school?”, “Stolen something worth more than \$10?”, “Been arrested?”, “Attacked someone with the idea of seriously hurting them?”, “Used marijuana?”, and “Used other illegal drugs?” Response options ranged from 0 (none of my friends) - 4 (four of my friends). Reliability across the four waves from 5th to 11th grade was good ($\alpha = .63, .70, .81, \text{ and } .83$, respectively).

Antisocial behavior.—This variable was a count of antisocial behaviors. In 5th grade, the count included five behaviors ever engaged in: “been suspended from school,” “been arrested,” “carried a weapon,” “stolen something worth more than \$10,” or “attacked someone with the idea of seriously hurting them.” Subsequent surveys (7th, 9th, and 11th grades) asked participants if they engaged in the behaviors in the last year and added three behaviors to the count (0 to 8): “sold illegal drugs,” “stolen or tried to steal a motor vehicle,” and “been drunk or high at school.”

Participant gender.—Gender was coded female = 0, male = 1.

Analysis

First, correlations between all variables were calculated. We used MPlus 7.2 (Muthen & Muthen, 2007) to construct the random-intercepts cross-lagged path models (Hamaker et al., 2015) and examined four standard fit indices: root mean square error of approximation (RMSEA), comparative fit index (CFI), standardized root mean square residual (SRMR), and chi-square (χ^2). Common guidelines suggest that adequate fit may be indicated when $\text{RMSEA} < .05$, $\text{CFI} > .95$, $\text{SRMR} < .05$, and χ^2 is not significant (Hu & Bentler, 1999; McDonald & Ho, 2002). Missing data in MPlus are handled with full-information maximum likelihood estimation, which yields unbiased parameter estimates based on all available data (McDonald & Ho, 2002). The first model included two auto-regressive paths: poor family management and antisocial peer associations. The second model included youth’s own antisocial behavior at each wave as a third auto-regressive path. In both models, all variables were regressed on gender as a control.

Results

Descriptive statistics and correlations are shown in Table 1. The two-auto-regressive-path model (including poor family management and antisocial peer associations) fit the data well ($\chi^2(7) = 13.83, p < .054$; $\text{RMSEA} = .033$ [90% CI: .000–.058]; $\text{CFI} = .995$; $\text{SRMR} = .014$). The three-path model (which also included youth antisocial behavior) also fit the data well ($\chi^2(18) = 38.55, p < .003$; $\text{RMSEA} = .035$ [90% CI: .020–.051]; $\text{CFI} = .993$; $\text{SRMR} = .018$). The models and path estimates are shown in Figures 1 and 2. Across all data waves in both models, poor family management predicted greater antisocial peer associations at the next wave, whereas antisocial peer associations did not predict poor family management. Furthermore, antisocial behavior was predicted by poor family management and/or antisocial peers across waves but antisocial behavior did not predict family management or antisocial peers. Gender was not significantly related to any variable in the two-path model. In the three-path model, gender (being male) was correlated with each variable in 5th grade and was related to antisocial peers in subsequent waves.

Discussion

Our results suggest that over time, poor family management predicts greater antisocial peer association but not the reverse. This remained true when including youth's own antisocial behavior, which was predicted by poor family management and/or antisocial peer associations. These findings support the perspective that family management remains important throughout adolescence and can prevent the cascade of negative consequences associated with antisocial peer involvement (Dishion, Nelson, & Kavanagh, 2003; Habib et al., 2010; Herrenkohl et al., 2006; Kliewer et al., 2017; Patterson et al., 2010). A notable strength of this study is the use of a random-intercepts cross-lag model to account for within-person processes over four waves of longitudinal data spanning the adolescent years. Our results provide further evidence that family-focused preventive interventions are an important prevention strategy even in adolescence.

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Figure 1. Two-path Model Results

Notes: Path estimates are standardized. Model fit: $\chi^2(7) = 13.83$, $p < .054$; RMSEA = .033 [90% CI: .000 – .058]; CFI = .995; SRMR = .014. Paths for gender and random intercepts not shown. Dotted lines indicate non-significant paths. Significance levels: * $p < .05$, ** $p < .01$, *** $p < .001$

Figure 2. Three-path Model Results

Notes: Path estimates are standardized. Model fit: $\chi^2(18) = 38.55$, $p < .003$; RMSEA = .035 [90% CI: .020 – .051]; CFI = .993; SRMR = .018. Paths for gender and random intercepts not shown. Dotted lines indicate non-significant paths. Significance levels: * $p < .05$, ** $p < .01$, *** $p < .001$

Table 1

Pearson Correlations and Descriptive Statistics

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Gender (male = 1)	—												
2. Poor Family Mgmt (5 th)	.26	1.39(.41)											
3. Poor Family Mgmt (7 th)	*** .14	*** .34	1.53(.48)										
4. Poor Family Mgmt (9 th)	* .09	*** .25	*** .48	1.87(.54)									
5. Poor Family Mgmt (11 th)	* .19	*** .28	*** .36	*** .60	2.01(.55)								
6. Antisocial Peers (5 th)	*** .25	*** .27	*** .07	.06	-.00	.10(.25)							
7. Antisocial Peers (7 th)	** .10	*** .23	*** .33	*** .20	*** .13	*** .21	.17(.37)						
8. Antisocial Peers (9 th)	*** .13	*** .13	*** .24	*** .27	*** .17	*** .25	*** .36	.44(.67)					
9. Antisocial Peers (11 th)	*** .14	*** .15	*** .21	*** .33	*** .32	*** .15	*** .26	*** .55	.56(.76)				
10. Antisocial Behavior (5 th)	*** .26	*** .28	*** .12	** .10	.07	*** .51	*** .21	*** .25	*** .21	.25(.59)			
11. Antisocial Behavior (7 th)	*** .17	*** .20	*** .28	*** .20	** .10	*** .25	*** .53	*** .28	*** .21	*** .33	.25(.65)		
12. Antisocial Behavior (9 th)	.16	* .09	*** .20	*** .29	*** .22	*** .17	*** .34	*** .64	*** .43	*** .22	*** .35	.50(1.06)	
13. Antisocial Behavior (11 th)	.16	*** .12	*** .19	*** .26	*** .24	* .10	*** .27	*** .42	*** .55	*** .14	*** .30	*** .50	.46(1.10)

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$ *M(SD)* on the diagonal