
BRIEF REPORTS

Parenting and Trajectories of Children's Maladaptive Behaviors: A 12-Year Prospective Community Study

Koen Luyckx

Department of Psychology, Catholic University Leuven

Elizabeth A. Tildesley

Oregon Research Institute, Eugene, Oregon

Bart Soenens

Department of Developmental, Personality, and Social Psychology, Ghent University

Judy A. Andrews, Sarah E. Hampson, and Missy Peterson

Oregon Research Institute, Eugene, Oregon

Bart Duriez

Department of Psychology, Catholic University Leuven

This study investigated how parenting accounted for interindividual differences in developmental trajectories of different child behaviors across childhood and adolescence. In a cohort sequential community sample of 1,049 children, latent class growth analysis was applied to three parent-reported dimensions (monitoring, positive parenting, inconsistent discipline) across 12 annual assessments (ages 6–18). Four longitudinal parenting styles (authoritative, authoritarian, indulgent, uninvolved) were differentiated on the basis of levels and rates of change in the constituent parenting dimensions. Multigroup analyses demonstrated that these parenting styles were differentially related to changes in parent- and child-reported measures of children's alcohol and cigarette use, antisocial behavior, and internalizing symptoms, with the authoritative parenting class being related to the most optimal long-term development.

A vast literature demonstrates that authoritative parenting, a parenting style combining high levels of support and behavioral regulation (Baumrind, 1967; Lamborn,

Mounts, Steinberg, & Dornbusch, 1991), is related to more optimal psychosocial child outcomes than non-authoritative parenting styles (Steinberg, 2001). However, it is unclear how (a) changes in parenting dimensions such as support and regulation combine into parenting styles across time, and (b) long-term trajectories of children's internalizing symptoms and externalizing behaviors are related to such parenting styles. This long-term prospective community study addressed these research questions and, hence, tried to remedy the relatively static approach to parenting styles prevailing in the literature (Holden & Miller, 1999). Applying such

The project was supported by Award Number RO1DA01767 from the National Institute on Drug Abuse, awarded to Judy A. Andrews. The content of this paper is solely the responsibility of the authors and does not necessarily represent the official views of the National Institute on Drug Abuse or the National Institute of Health. Koen Luyckx and Bart Duriez are postdoctoral researchers at the Fund for Scientific Research Flanders (FWO).

Correspondence should be addressed to Koen Luyckx, K.U. Leuven, Department of Psychology, Tiensestraat 102, B-3000 Leuven, Belgium. E-mail: Koen.Luyckx@psy.kuleuven.be

an explicitly developmental approach to the study of parenting and its correlates can inform prevention and intervention efforts by elucidating to what extent these variables develop in tandem.

The two most commonly studied parenting dimensions are support (or responsiveness/positive parenting) and behavioral regulation (Steinberg, 2001). Support refers to the empathic and responsive recognition of the child's perspective (Davidov & Grusec, 2006). Regulation involves (a) supervising and monitoring children's behavior within reasonably set boundaries (Dishion & McMahon, 1998), and (b) creating an organized and predictable environment for children by being consistent in disciplining and communicating expectations (Holden & Miller, 1999). Four parenting styles are typically distinguished on the basis of these dimensions (Lamborn et al., 1991; Maccoby & Martin, 1983): authoritative parenting (high regulation and support), authoritarian parenting (high regulation, low support), indulgent parenting (low regulation, high support), and uninvolved parenting (low regulation and support).

Although longitudinal research has focused on stability and change in support and regulation (e.g., Loeber et al., 2000; McNally, Eisenberg, & Harris, 1991), no research to date examined how stability and change in these dimensions might vary in different households. For instance, although parental expressions of affection or support were generally found to decrease with children's age (Holden & Miller, 1999), it is unclear whether this decrease is a function of parenting style (with, e.g., authoritative parents showing the least decreases). Therefore, our first goal was to chart longitudinal parenting styles or trajectory classes and to examine how the dimensions of support and regulation develop within each of these classes.

Numerous cross-sectional studies have focused on psychosocial correlates of the four parenting styles. Children from authoritative families are less prone to internalizing symptoms and externalizing behaviors and are less likely to engage in drug use than children from uninvolved families (Steinberg, 2001). Children from either authoritarian or indulgent households typically fall somewhere in between. Monitoring or supervision is commonly found to be the strongest buffer against externalizing behaviors (Barber, Stolz, & Olsen, 2005). As such, children raised in authoritarian households generally report lower levels of such behaviors compared to uninvolved (or indulgent) households. Support or responsiveness is commonly found to buffer against internalizing symptoms (Barber et al., 2005; Gray & Steinberg, 1999). As such, children raised in indulgent households have been found to score lower on internalizing symptoms compared to children raised in authoritarian (and uninvolved) households, although

these findings are not consistent across studies (Lamborn et al., 1991).

However, there is a dearth of prospective studies in community samples investigating—in line with transactional socialization models (Magnusson, 1988)—to what extent parenting and children's behaviors develop in tandem using a wide temporal window. With increasing age, children, and especially adolescents, are commonly reported to show increased rates of internalizing symptoms and externalizing behaviors, although vast interindividual differences exist in developmental trajectories (Arnett, 1999). Our second goal was to investigate whether parenting styles account for such interindividual differences in long-term developmental trajectories of internalizing symptoms and externalizing behaviors (Hoeve et al., 2008).

THE PRESENT STUDY

First, in a large community sample with annual assessments from childhood through adolescence, longitudinal parenting trajectory classes were identified using latent class growth analysis (LCGA; Nagin, 2005), based on parent reports of three dimensions: positive parenting, monitoring/supervision, and inconsistent discipline (with the latter two dimensions representing positive and negative indicators of parental regulation, respectively). Four parenting classes were expected to emerge. The authoritative class would score high on positive parenting and monitoring and low on inconsistent discipline; the authoritarian class high on monitoring and low on positive parenting and inconsistent discipline; the indulgent class high on positive parenting and inconsistent discipline and low on monitoring; and, finally, the uninvolved class high on inconsistent discipline and low on positive parenting and monitoring. We did not have a priori expectations about the shape of developmental changes of the parenting dimensions within these classes, due to a lack of previous research and theory. For instance, in general, monitoring would show a quadratic trend across time, that is, rather stable levels in childhood followed by decreases in adolescence (Loeber et al., 2000), being a time in which youngsters establish an identity and separate themselves from their parents (Arnett, 1999). These changes, however, might depend on parenting style, with uninvolved and indulgent parents possibly showing the steepest decreases.

Second, we investigated how children's internalizing symptoms and antisocial behavior (parent reported) and alcohol and cigarette use (child reported) developed across time depending on these parenting classes. We expected children in the authoritative class to have the lowest levels of internalizing symptoms across time, followed by children in the indulgent and authoritarian

classes. Children belonging to the uninvolved class would score highest on internalizing symptoms, accompanied by possibly the steepest increases across time. With respect to substance use and antisocial behavior, all four classes were predicted to have similar and low initial levels in childhood. Children belonging to the indulgent and uninvolved classes (both characterized by low monitoring) could show the steepest increases across time in these behaviors. Again, precise hypotheses regarding differential developmental changes depending on parenting style were difficult to postulate due to a lack of previous long-term research in community samples.

METHODS

Participants

Five grade cohorts (Grade 1–5 at T1) of children and their parents were assessed annually over 8 years (T1–T8), until they were in Grade 8 to 12, in the cohort sequential Oregon Youth Substance Use Project (OYSUP; Andrews, Tildesley, Hops, Duncan, & Severson, 2003). This design serves as a proxy for a true longitudinal design, where a single cohort is assessed from Grades 1 to 12. The OYSUP initially recruited 1,075 children from 15 elementary schools within one school district in western Oregon. Using stratified random sampling (by school, grade, and gender), the study recruited parents of 2,127 students; 1,075 (50.7%) consented to participate. Participating children were representative of students in the school district in terms of race/ethnicity and eligibility for free or reduced lunch, and of youth in the state of Oregon in terms of substance use and school achievement test scores. Schools were located in a predominantly working-class community; 40% of the sample was eligible for a free or reduced lunch. An average of 215 students in each of first through fifth grade participated at T1 (50.3% girls). Mean age at T1 was 9.0 years ($SD=1.45$) across cohorts. The sample was 86% Caucasian, 7% Hispanic, 1% Afro-American, and 6% of other or mixed race/ethnicity. Approximately 7% of mothers and 11% of fathers had not obtained a high school diploma, and 71% and 66%, respectively, had received post-high school education.

Procedures

All procedures, assents/consents, and instruments were approved by Oregon Research Institute's Institutional Review Board annually. Parents provided a signed consent allowing their child to participate in the first four assessments prior to the child's first in-school

assessment, as well as consenting to their own participation. We requested that children agree to a verbal assent for Grades 1 to 3 or sign a written assent for Grades 4 and 5. All procedures, consents/assents, and questionnaires/interviews were translated into Spanish and available for those who needed it. We obtained renewed consents for following assessments.

Our sample consisted of 1,049 children (50.1% girls) who participated in any of the eight annual assessments and had at least one parent participating. Children received an age-adjusted gift and parents received a monetary reward for participating. Most families completed seven or eight assessments (80.3%), 8.5% five or six assessments, 7.8% three or four assessments, and 3.4% one or two assessments. Our sample included 731 families (69.7%) with the same mother and father participating across assessments (95% were married or living together), 251 families (23.9%) with mother only participating (64.9% were not living with the child's father), and 25 families (2.3%) with father only participating (80% were not living with the child's mother).

One-way analyses of variance with post hoc Scheffé comparisons revealed no cohort effects for positive parenting, inconsistent discipline, alcohol use, or cigarette use. For monitoring, we found limited cohort differences at fourth grade, $F(3, 727)=3.11$, with Cohort 2 parents reporting more monitoring than Cohort 4 parents, Cohen's $d=.30$, and at seventh grade, $F(3, 736)=4.31$, $p<.01$, and ninth grade, $F(3, 720)=2.69$, $p<.05$, with Cohort 1 parents reporting more monitoring at seventh grade, Cohen's $d=.37$, and ninth grade, Cohen's $d=.32$, than Cohort 4 parents. At eighth grade, $F(3, 730)=4.54$, $p<.01$, Cohort 1 parents reported more monitoring than Cohort 3 parents, Cohen's $d=.38$. We found only one cohort effect for children's internalizing symptoms at third grade, $F(2, 528)=3.69$, $p<.05$, with parents of Cohort 2 children reporting less internalizing symptoms than parents of Cohort 3 children, Cohen's $d=-.28$. Finally, we found limited cohort differences for children's deviant behavior at third grade, $F(2, 530)=3.83$, $p<.05$, with Cohort 2 parents at third grade reporting lower deviant behavior than Cohort 3 parents, Cohen's $d=-.29$, and Cohort 4 parents, Cohen's $d=-.16$. In sum, because of limited cohort differences, participants were collapsed across cohorts (Andrews et al., 2003). LCGA was performed with Mplus 5.2 and the Full Information Maximum Likelihood algorithm for missing data (Muthén & Muthén, 1998/2008).

Measures

Parenting dimensions. Parents completed three subscales from the Alabama Parenting Questionnaire (Shelton, Frick, & Wootton, 1996) to assess monitoring/

supervision (e.g., "Don't check that child is home on time," "Child goes out with friends you do not know," "Child goes out without a set time to be home" [all reversed]; nine items), inconsistent discipline (e.g., "Threatens to punish, and then doesn't," "Child talks you out of being punished after doing something wrong," "Let child out of punishment early"; six items), and positive parenting (e.g., "Compliments child," "Praise child if s/he behaves well," "Hug and kiss child"; six items) on a 5-point scale, ranging from 0 (*never*) to 4 (*always*). We used the average of mother and father scores in two-parent families (averaged *rs* across Grades 1–12 = .52 for monitoring, .37 for inconsistent discipline, and .35 for positive parenting; $ps < .001$) and a single score in single-parent families (Tildesley & Andrews, 2008). With respect to correlations among the three dimensions, averaged coefficients across Grades 1 to 12 were .21 (ranging from $r = .10$, $p < .01$ to $r = .28$, $p < .001$), $-.43$ (from $r = -.29$ to $r = -.57$, $ps < .001$), and $-.19$ (from $r = -.07$, $p < .05$ to $r = -.29$, $p < .001$) for associations between monitoring and positive parenting, monitoring and inconsistent discipline, and inconsistent discipline and positive parenting, respectively. Cronbach's alphas ranged from .60 to .83 for monitoring, from .67 to .78 for inconsistent discipline, and from .78 to .81 for positive parenting.

Alcohol and cigarette use. Using single items, children indicated their level of use of cigarettes and alcohol during the past 12 months, ranging from 0 (*never*) to 5 (*some each day*). Such self-report data were used from Grades 6 to 12.

Antisocial behavior and internalizing symptoms. Parents completed an abbreviated Child Behavior Checklist (Achenbach, 1991) to assess antisocial behavior and internalizing symptoms. Antisocial behavior was measured using a six-item subscale (e.g., "Steals things," "Lies or cheats," "Gets in trouble a lot"), internalizing symptoms by using a nine-item Withdrawn subscale (e.g., "Shy or timid," "Likes to be alone," "Withdrawn") on a 3-point response format from 0 (*not true*) to 2 (*very or often true*). We used the mean of mother and father scores in two-parent families (average *rs* across Grades 1–12 = .66 for antisocial behavior, and .52 for internalizing symptoms; $ps < .001$) and a single score in single-parent families. Cronbach's alphas ranged from .69 to .81 for antisocial behavior and from .75 to .83 for internalizing symptoms.

RESULTS

LCGA was performed on all three parenting dimensions conjointly. Intercepts and slopes were modelled using 12

indicators (assessments). Factor loadings of the intercept on all indicators were set to 1, loadings of the linear slope were set to 0, 1, 2, 3, and so on, and loadings of the quadratic slope were set to equal the square of the linear loadings (0, 1, 4, 9, etc.). Several criteria were used to decide on the number of classes. The Bayesian Information Criterion (BIC) for a solution with k classes should be lower than for a solution with $k-1$ classes. Classification accuracy was assessed by entropy (E), ranging from 0.00 to 1.00, with higher values indicating more accurate classification. The bootstrap Lo-Mendell-Rubin Test (Nylund, Asparouhov, & Muthén, 2007) provides a p value to indicate if there is a statistically significant improvement in fit through including an additional class. Finally, we evaluated the practical usefulness of the classes. As expected, LCGA favoured a 4-class solution (BIC = 22947.52; $E = .86$) over a 2-class (BIC = 25201.61; $E = .89$) and 3-class solution (BIC = 23871.56; $E = .87$), with the bootstrap Lo-Mendell-Rubin Test accompanying the 4-class solution significant at $p < .001$. In the 5-class solution (BIC = 22124.75; $E = .87$), some classes were variations on a single theme, hence our choice for the more parsimonious 4-class solution. Table 1 presents intercepts and slopes for this solution.

Class 1 ($N = 197$) was labelled indulgent parenting, characterized by moderate monitoring during childhood (with steep decreases during adolescence), high positive parenting (with decreases across time), and high inconsistent discipline (with increases across time). Class 2 ($N = 175$) was labelled uninvolved parenting, characterized by low monitoring (with decreases across time), low positive parenting (with decreases across time), and high stable inconsistent discipline. Class 3 ($N = 304$) was labelled authoritarian parenting, characterized by high monitoring (with decreases during adolescence), low positive parenting (with decreases across time), and low stable inconsistent discipline. Class 4 ($N = 375$) was labelled authoritative parenting, characterized by high monitoring (with increases in childhood and decreases in adolescence), high positive parenting (with slight decreases across time), and low stable inconsistent discipline. Boys and girls were evenly distributed among these classes, $\chi^2(3) = 6.83$, *ns*. Figure 1 gives an overview of the model-estimated mean values for these four classes. Panel A displays monitoring scores, Panel B positive parenting scores, and Panel C inconsistent discipline scores.

Next, multigroup latent growth curve modeling was conducted to investigate whether children of these classes developed differently (Duncan, Duncan, Strycker, Li, & Alpert, 1999). All models included a significant quadratic slope, except for alcohol use and antisocial behavior. First, a fully unconstrained baseline model was estimated with all growth parameters being

TABLE 1
Parameter Estimates of Parenting Trajectory Classes Across Grades 1 to 12

| Parameter Estimates | Total Sample | Parenting Trajectory Class | | | |
|-------------------------|--------------|----------------------------|-------------------------|----------------------------|----------------------------|
| | | Indulgent ^a | Uninvolved ^b | Authoritarian ^c | Authoritative ^d |
| Monitoring | | | | | |
| Mean Intercept | 3.637*** | 3.654*** | 3.289*** | 3.737*** | 3.752*** |
| Mean Linear Slope | 0.013* | 0.029 | -0.032 | 0.016 | 0.022* |
| Mean Quadratic Slope | -0.007*** | -0.011*** | -0.004* | -0.007*** | -0.006*** |
| Positive Parenting | | | | | |
| Mean Intercept | 3.200*** | 3.334*** | 2.911*** | 2.953*** | 3.446*** |
| Mean Linear Slope | -0.037*** | -0.046* | -0.056* | -0.046*** | -0.010 |
| Mean Quadratic Slope | 0.000 | 0.001 | 0.002 | 0.000 | -0.002 |
| Inconsistent Discipline | | | | | |
| Mean Intercept | 1.139*** | 1.372*** | 1.515*** | 1.083*** | 0.847*** |
| Mean Linear Slope | 0.006 | 0.047* | 0.020 | -0.009 | -0.009 |
| Mean Quadratic Slope | -0.001 | -0.002 | -0.002 | 0.000 | 0.000 |

^a*N* = 197.

^b*N* = 175.

^c*N* = 304.

^d*N* = 375.

p* < .05. **p* < .001.

freely estimated in all four classes. Second, intercepts were held equal among all classes, followed by a model in which slopes were held equal. Third, if these constrained models provided a worse fit to the data than the baseline model (indicating that the respective growth parameters could not be considered as equal in all four classes), subsequent multigroup models were estimated in which intercepts and slopes were set free again in certain classes. Table 2 gives an overview of all final parameter estimates. Figure 2 presents final multigroup models for alcohol use (Panel A), cigarette use (Panel B), antisocial behavior (Panel C), and internalizing symptoms (Panel D). For alcohol use and internalizing symptoms, ancillary multigroup analyses demonstrated that intercepts and slopes could be fixed as equal between boys and girls in all four classes, meaning that no substantial gender differences emerged for these two variables.

For alcohol use, the multigroup model demonstrated that the intercept (with a value of 0.174 in Table 2) could be held equal in all four classes, $\chi^2(85) = 195.47$ (root mean square error of approximation [RMSEA] = .07, comparative fit index [CFI] = .95) because this was not accompanied by a decrease in fit, $\Delta\chi^2(3) = 2.43$, $p = .49$, as compared to the less parsimonious baseline model, $\chi^2(82) = 193.04$ (RMSEA = .07, CFI = .95). Next, the linear slope could not be held equal in all classes, $\chi^2(85) = 230.50$ (RMSEA = .08, CFI = .93) as this resulted in a significant decrease in fit, $\Delta\chi^2(3) = 37.46$, $p < .001$, compared to the baseline model, but the linear slope could be held equal in the authoritarian and authoritative classes (0.212), on one

hand, and the indulgent and uninvolved classes (0.317), on the other, $\chi^2(87) = 197.61$ (RMSEA = .07, CFI = .95). Consequently, the final multigroup model provided an equally good fit, $\Delta\chi^2(5) = 4.57$, $p = .47$, as the baseline model. Initially, all children scored equally low on alcohol use and increased their alcohol use between Grades 6 and 12, with children of the indulgent and uninvolved classes demonstrating the steepest increases across time.

For cigarette use, a multigroup model with intercepts held equal in all classes, $\chi^2(75) = 310.44$ (RMSEA = .11, CFI = .90) provided a worse fit to the data, $\Delta\chi^2(3) = 8.88$, $p < .05$, than the baseline model, $\chi^2(72) = 301.56$ (RMSEA = .11, CFI = .91); when subsequently freeing the intercept for the authoritative class (0.016 as opposed to 0.073 for the other classes), the model, $\chi^2(74) = 301.88$ (RMSEA = .11, CFI = .91) had an equally good fit, $\Delta\chi^2(2) = 0.32$, $p = .85$, as the less parsimonious baseline model. Next, a model in which the linear slope was held equal in all classes (0.017) except for the uninvolved class (0.093), and the quadratic slope held equal in the authoritarian and authoritative classes (0.026), on one hand, and the indulgent and uninvolved classes (0.046), on the other, $\chi^2(78) = 303.14$ (RMSEA = .10, CFI = .91) provided a similar fit, $\Delta\chi^2(6) = 1.58$, $p = .95$, as the baseline model and, hence, was preferred on the basis of parsimony. Initially, all children scored low on cigarette use, and children of the indulgent and especially the uninvolved class showed the steepest increases between Grades 6 and 12. Ancillary analyses demonstrated that boys and girls developed differently within the uninvolved

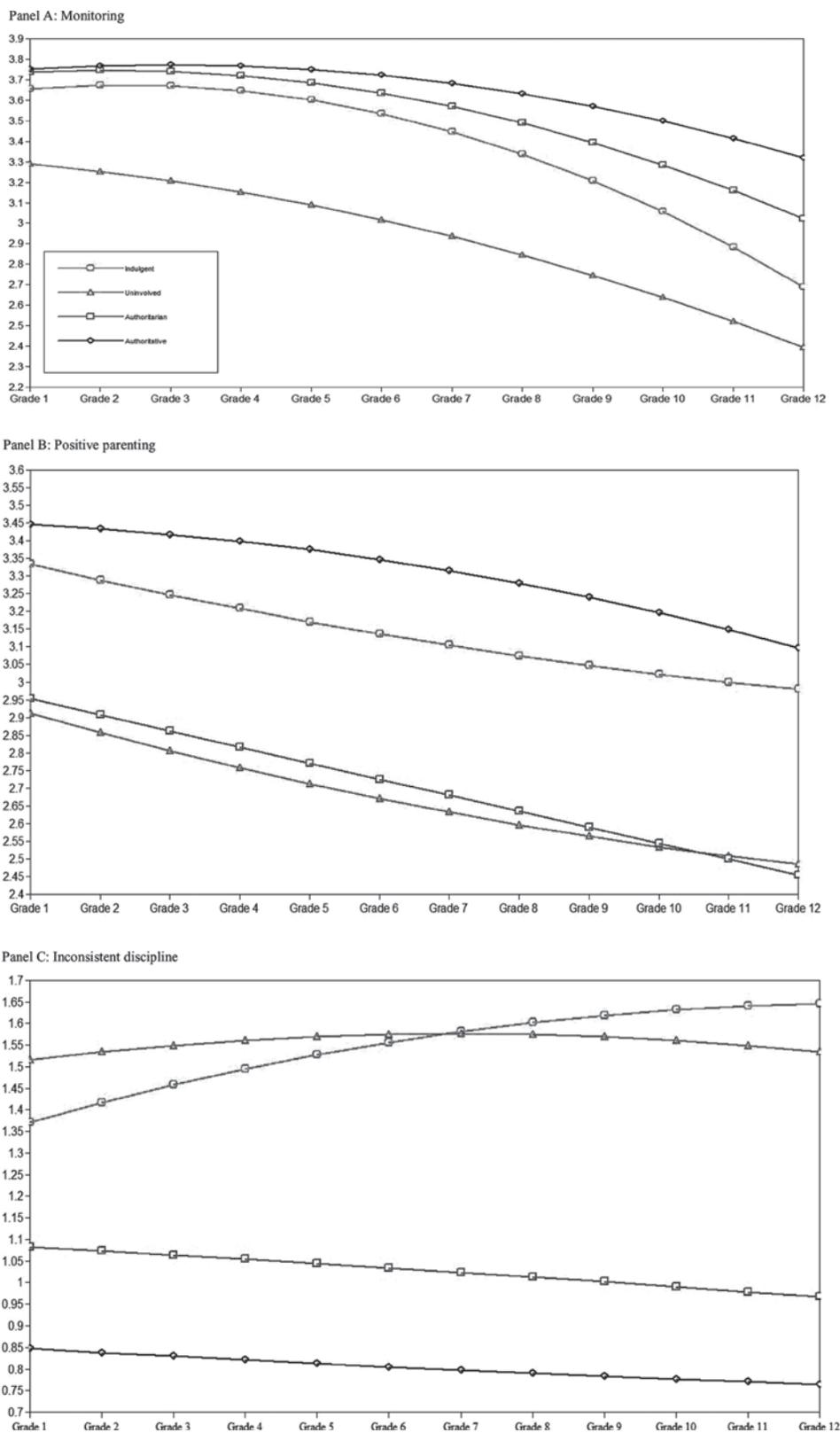


FIGURE 1 Estimated mean values across Grades 1 to 12 in the four parenting trajectory classes for monitoring (Panel A), positive parenting (Panel B), and inconsistent discipline (Panel C). Note: Circle = indulgent parenting; triangle = uninvolved parenting; square = authoritarian parenting; diamond = authoritative parenting.

TABLE 2
Final Multigroup Parameter Estimates of Outcome Variables in the Four Parenting Trajectory Classes

| Parameter Estimates for Outcome Variables | Total Sample | Parenting Trajectory Class | | | |
|---|--------------|----------------------------|-------------------------|----------------------------|----------------------------|
| | | Indulgent ^a | Uninvolved ^b | Authoritarian ^c | Authoritative ^d |
| Alcohol Use | | | | | |
| Mean Intercept | 0.182*** | 0.174 _a *** | 0.174 _a *** | 0.174 _a *** | 0.174 _a *** |
| Mean Linear Slope | 0.247*** | 0.317 _a *** | 0.317 _a *** | 0.212 _b *** | 0.212 _b *** |
| Cigarette Use | | | | | |
| Mean Intercept | 0.051*** | 0.073 _a *** | 0.073 _a *** | 0.073 _a *** | 0.016 |
| Mean Linear Slope | 0.055*** | 0.017 _a | 0.093** | 0.017 _a | 0.017 _a |
| Mean Quadratic Slope | 0.029*** | 0.046 _a *** | 0.046 _a *** | 0.026 _b *** | 0.026 _b *** |
| Antisocial Behavior | | | | | |
| Mean Intercept | 0.967*** | 1.128*** | 1.663*** | 0.886*** | 0.636*** |
| Mean Linear Slope | 0.071*** | 0.097 _a *** | 0.097 _a *** | 0.041 _b *** | 0.041 _b *** |
| Internalizing Symptoms | | | | | |
| Mean Intercept | 1.954*** | 1.754 _a *** | 2.615*** | 1.754 _a *** | 1.754 _a *** |
| Mean Linear Slope | 0.187*** | 0.191 _a *** | 0.191 _a *** | 0.191 _a *** | 0.191 _a *** |
| Mean Quadratic Slope | -0.007* | 0.000 _a | 0.000 _a | -0.006 | -0.014*** |

Note: Parameter estimates with the same subscripts within rows were held equal in the respective classes as these restrictions were not accompanied by a loss in fit and, hence, resulted in more parsimonious models (as compared to the respective baseline models) in the multigroup testing. Parameters without subscripts were estimated freely as these could not be held equal due to a loss in model fit in the multigroup testing.

^a*N* = 197.

^b*N* = 175.

^c*N* = 304.

^d*N* = 375.

p* < .05. *p* < .01. ****p* < .001.

class: The intercept could be fixed as equal, $\Delta\chi^2(1) = 0.17$, $p = .68$, whereas the linear (boys: 0.041, *ns*; girls: 0.310, $p < .001$) and quadratic slopes (boys: 0.055, $p < .001$; girls: 0.005, *ns*) could not, $\Delta\chi^2(1) = 16.31$, $p < .001$, and $\Delta\chi^2(1) = 4.35$, $p < .05$, respectively. Whereas girls of uninvolved parents increased linearly across time in smoking, boys of uninvolved parents tended to smoke less at Grades 7 to 10 but caught up with girls at Grade 11 and tended to smoke more at Grade 12.

For antisocial behavior, multigroup modeling indicated that none of the intercepts could be fixed as equal because any constraint on the intercept level was accompanied by a decrease in fit as compared to the baseline model. Hence, the intercept needed to be freely estimated in all classes as indicated in Table 2. Next, the linear slope could be held equal in the authoritarian and authoritative classes (0.041) on the one hand and the indulgent and uninvolved classes (0.097) on the other, $\chi^2(251) = 610.36$ (RMSEA = .07, CFI = .90), which provided an equally good fit, $\Delta\chi^2(2) = 0.48$, $p = .79$, as the baseline model, $\chi^2(249) = 610.088$ (RMSEA = .07, CFI = .90). Initially, children of the authoritative class scored lowest on antisocial behavior, followed by the authoritarian, indulgent, and uninvolved classes, respectively. Children in the indulgent and uninvolved classes demonstrated the steepest increases across time. Boys and girls developed differently in the uninvolved and authoritarian classes. In the uninvolved class, the intercept could be fixed as equal, $\Delta\chi^2(1) = 3.03$, $p = .08$,

whereas the linear slope (boys: 0.157, $p < .001$; girls: 0.088, $p < .001$) could not, $\Delta\chi^2(1) = 3.92$, $p < .05$, indicating that both started off at the same level but boys increased much steeper. In the authoritarian class, the intercept (boys: 1.220, $p < .001$; girls: 0.591, $p < .001$) and linear slope (boys: 0.017, *ns*; girls: 0.063, $p < .001$) could not be fixed as equal, $\Delta\chi^2(1) = 16.31$, $p < .001$, and $\Delta\chi^2(1) = 4.35$, $p < .05$, respectively, indicating that boys started off at a higher level but girls increased somewhat more steeply across time.

For internalizing symptoms, a multigroup model with intercepts held equal in all classes, $\chi^2(251) = 527.88$ (RMSEA = .07, CFI = .93) provided a worse fit to the data, $\Delta\chi^2(3) = 10.89$, $p < .05$, than the baseline model, $\chi^2(248) = 516.99$ (RMSEA = .06, CFI = .93); when subsequently freeing the intercept for the uninvolved class (2.615 as opposed to 1.754 for the other three classes), the model, $\chi^2(250) = 519.43$ (RMSEA = .06, CFI = .93) had an equally good fit, $\Delta\chi^2(2) = 2.44$, $p = .30$, as the less parsimonious baseline model. The linear slope could be held equal in all classes (0.191), but the quadratic slope could be held equal only in the indulgent and uninvolved classes (0.000) and needed to be freely estimated in the remaining two classes in terms of model fit. This final multigroup model, $\chi^2(254) = 527.44$ (RMSEA = .06, CFI = .93) provided an equally good fit, $\Delta\chi^2(6) = 10.45$, $p = .11$, as the baseline model. Initially, children of the uninvolved class showed the highest levels of internalizing symptoms. All classes

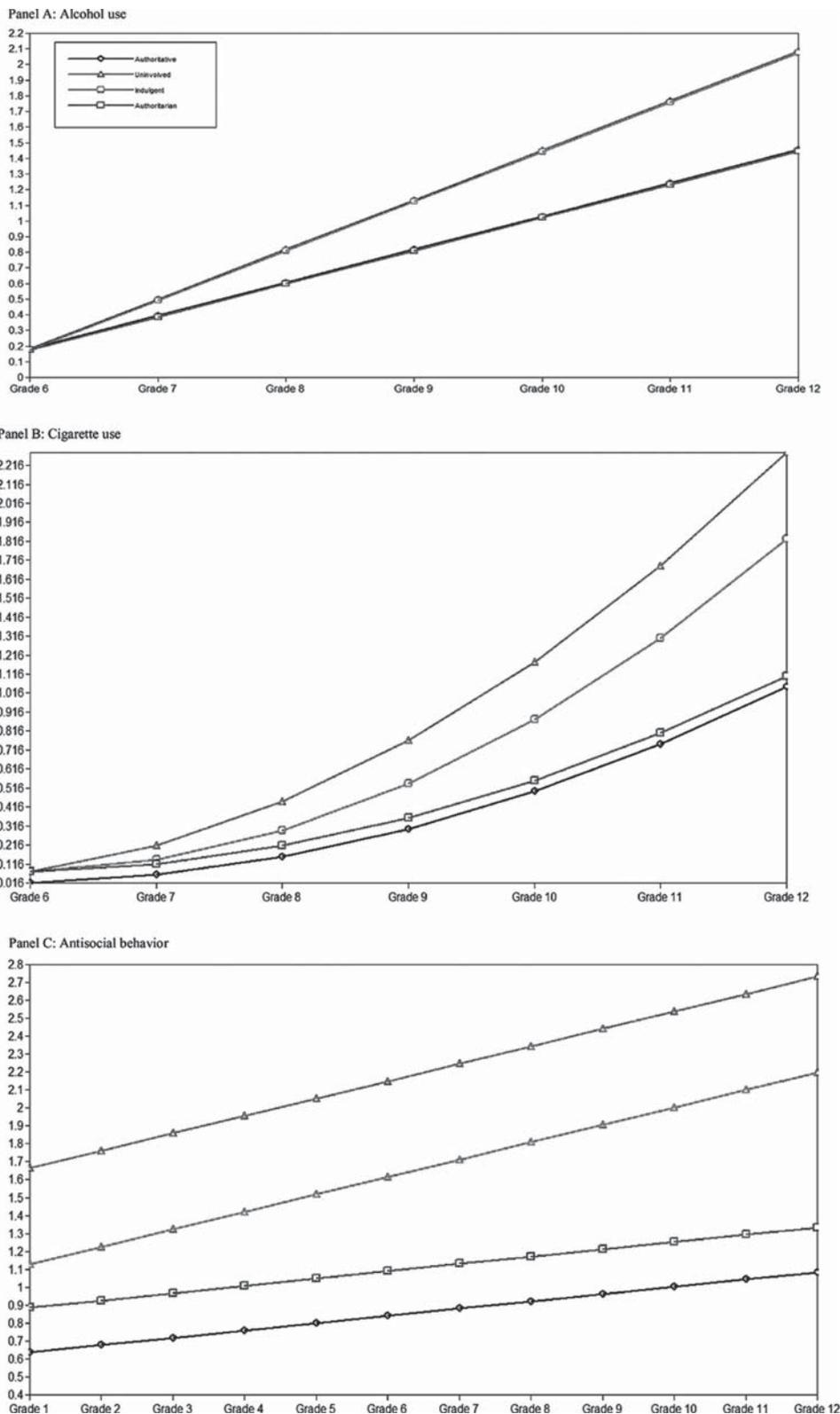


FIGURE 2 Estimated mean values in the final multigroup models for alcohol use (Panel A; the trajectory lines of authoritative and authoritarian and of indulgent and uninvolved overlap), cigarette use (Panel B), antisocial behavior (Panel C), and internalizing symptoms (Panel D). Note: Circle = indulgent parenting; triangle = uninvolved parenting; square = authoritarian parenting; diamond = authoritative parenting.

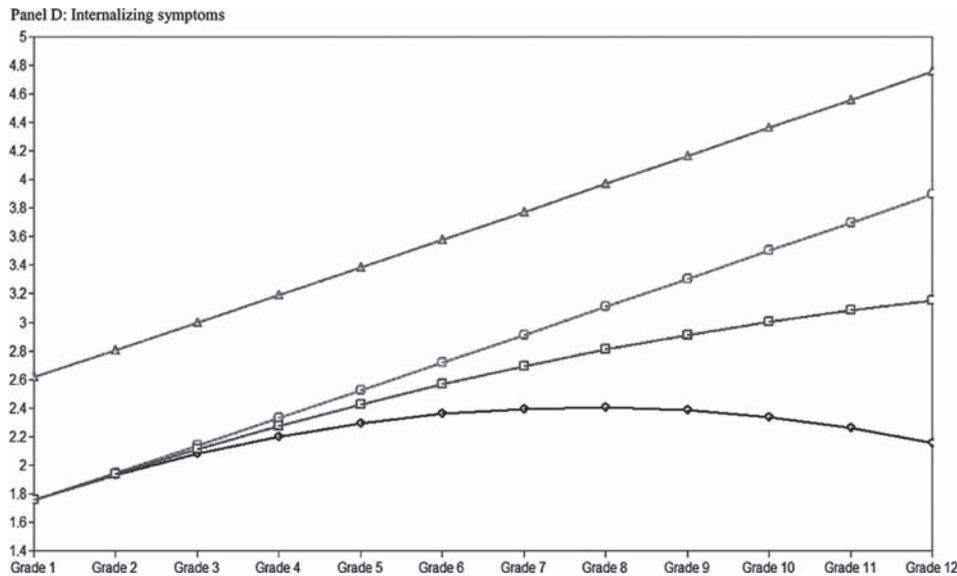


FIGURE 2 Continued.

showed increases during the first few years but, for the authoritative class, these increases levelled off during childhood and were followed by decreases through adolescence.

DISCUSSION

Four longitudinal parenting classes (labeled indulgent, uninvolved, authoritarian, and authoritative, as inspired by Maccoby & Martin, 1983) were defined, displaying differential stability and change in specific parenting dimensions. With respect to monitoring, the authoritative class combined high levels with increases during childhood and slight decreases across adolescence. These findings suggest that authoritative parents somewhat relinquish their monitoring in response to adolescents' increasing demands for independent decision making. The authoritarian class showed a similar pattern but with steeper decreases across adolescence. Possibly, authoritarian parents do not choose to monitor less but simply have no other choice because their children increasingly spend more unsupervised time outside the home. Future research may address this differential hypothesis for authoritative versus authoritarian parents. Indulgent parents showed steep decreases in monitoring once their children reached adolescence.

With respect to positive parenting, the authoritative class combined high initial levels with small decreases. The other classes were mainly differentiated in terms of mean levels. Apparently, most parents tend to develop similarly across time on positive parenting (albeit on different levels, with authoritative and indulgent parents scoring substantially higher than

authoritarian and uninvolved parents). This developmental trend is possibly due to the normative search for independence in adolescence, accompanied by increasing conflicts (McNally et al., 1991; Smetana, Crean, & Campione-Barr, 2005), which limits opportunities for parents to be increasingly responsive to their children. Finally, for inconsistent discipline, we again found mean-level differences among the classes, with, as expected, authoritative parents scoring the lowest. Inconsistent parenting appeared to change less across time compared to parental support and monitoring (as demonstrated also in the mean-level changes for the total sample) and may be more related to stable features in parents' functioning, including parental personality (Holden & Miller, 1999). Indulgent parents were the only ones to increase on inconsistent parenting across time, which (in combination with their steep decreases in monitoring in adolescence) testifies to their suboptimal family management skills, as is also evident for uninvolved parents. Such weak management skills could lead to coercive interaction cycles (Reid & Patterson, 1989). Children raised in such families increasingly display externalizing behaviors (as demonstrated in the present study), which might instigate these parents to react aversely and ineffectively, further increasing children's externalizing behaviors.

These parenting trajectory classes substantially moderated the developmental trajectories of children's psychosocial symptoms and behaviors, both with respect to level and developmental shape. Children of authoritative parents fared better than their peers on every behavior assessed. Some of the disadvantages of non-authoritative parenting accumulated over time (Collins, Maccoby, Steinberg, Hetherington, & Bornstein, 2000;

Steinberg, 2001). With respect to alcohol and cigarette use, children of different households were cast into different developmental pathways, and this developmental gap widened as the children aged. By Grade 12, children of uninvolved parents drank alcohol almost twice as much and smoked twice as much as their peers in authoritative (and authoritarian) households. Similarly, children of indulgent and uninvolved parents increased more steeply in antisocial behavior. Boys of uninvolved parents seemed extremely vulnerable with respect to developing antisocial behavior across time. Conversely, the higher scores on monitoring characteristic of authoritative and authoritarian parenting appeared to protect against various maladaptive behaviors in the long run. Whereas children of authoritarian and authoritative parents tended to develop rather similarly with respect to these behaviors, their differential development on internalizing symptoms pointed to the importance of distinguishing between both styles. When using a wide temporal window, the advantages of being raised in an authoritative household became clear. Or conversely, the disadvantages of being raised in an authoritarian household showed up during adolescence, resulting in a less-than-optimal developmental trajectory for internalizing symptoms.

Limitations

First, the OYSUP sample is almost exclusively White. Future research should sample ethnically diverse populations, as the influence of parenting could vary depending on social milieu (Darling & Steinberg, 1993). Second, the present study used the framework of parenting styles in the vein of Maccoby and Martin (1983), as well as others who have followed them. The parenting questionnaire used was not designed specifically for this purpose (Shelton et al., 1996). However, the present findings demonstrated that it is important to chart the developmental trajectories of different parenting dimensions simultaneously. Third, in the present study, parents or children reported on separate outcome measures instead of both informants reporting on the same outcomes. Further, although the use of parent-reported data on parenting as some advantages over the use of observational data (e.g., Shelton et al., 1996), the use of observations would be helpful in examining more closely family interaction dynamics. Relatedly, the single-item quality of the child-reported measurements constitutes a weakness of the present study.

Implications for Research, Policy, and Practice

Children of the authoritative parenting class were characterized by the most optimal long-term development,

whereas children of uninvolved parents were characterized by the least optimal development. Children of indulgent and authoritarian parents were situated in between, with children of authoritarian parents faring somewhat better than those of indulgent parents. As such, prevention and intervention programs could target children (and especially boys when it comes to antisocial behavior) of uninvolved households as they seem to be cast into suboptimal developmental pathways characterized by cumulative changes across time. Previous research indeed demonstrated that family-centered intervention efforts reduced children's externalizing behaviors in high-risk families, exactly through increases in family management skills such as monitoring (Dishion & Stormshak, 2007). Further, future research should investigate how parents and peers conjointly influence the developing child (Collins et al., 2000). This would also allow for investigating possible intervening mechanisms, as children raised in different households might differ in susceptibility to, for instance, antisocial peer pressure, which in turn may impact the development of externalizing behaviors.

REFERENCES

- Achenbach, T. M. (1991). *Manual for the child behavior checklist/4-18 and 1991 profile*. Burlington: University of Vermont, Department of Psychiatry.
- Andrews, J. A., Tildesley, E., Hops, H., Duncan, S. C., & Severson, H. (2003). Elementary school age children's future intentions and use of substances. *Journal of Clinical Child and Adolescent Psychology, 32*, 556-567.
- Arnett, J. J. (1999). Adolescent storm and stress, reconsidered. *American Psychologist, 54*, 317-326.
- Barber, B. K., Stolz, H. E., & Olsen, J. A. (2005). Parental support, psychological control, and behavioral control: Assessing relevance across time, method, and culture. *Monographs of the Society for Research in Child Development, 70*(4, Serial No. 281).
- Baumrind, D. (1967). Child care practices anteceding three patterns of preschool behavior. *Genetic Psychology Monographs, 75*, 43-88.
- Collins, W. A., Maccoby, E. E., Steinberg, L., Hetherington, E. M., & Bornstein, M. H. (2000). Contemporary research on parenting: The case for nature and nurture. *American Psychologist, 55*, 218-232.
- Darling, N., & Steinberg, L. (1993). Parenting style as context: An integrative model. *Psychological Bulletin, 113*, 487-496.
- Davidov, M., & Grusec, J. E. (2006). Untangling the links of parental responsiveness to distress and warmth to child outcomes. *Child Development, 77*, 44-58.
- Dishion, T. J., & McMahon, R. J. (1998). Parental monitoring and the prevention of child and adolescent problem behavior: A conceptual and empirical formulation. *Clinical Child and Family Psychology Review, 1*, 61-75.
- Dishion, T. J., & Stormshak, E. (2007). *Intervening in children's lives: An ecological, family-centered approach to mental health care*. Washington, DC: American Psychological Association.
- Duncan, T. E., Duncan, S. C., Strycker, L. A., Li, F., & Alpert, A. (1999). *An introduction to latent variable growth curve modeling: Concepts, issues and applications*. Mahwah, NJ: Erlbaum.

- Gray, M. R., & Steinberg, L. (1999). Unpacking authoritative parenting: Reassessing a multidimensional construct. *Journal of Marriage and the Family*, *61*, 574–587.
- Hoeve, M., Blokland, A., Dubas, J. S., Loeber, R., Gerris, J. R. M., & van der Laan, P. H. (2008). Trajectories of delinquency and parenting styles. *Journal of Abnormal Child Psychology*, *36*, 223–235.
- Holden, G. W., & Miller, P. C. (1999). Enduring and different: A meta-analysis of the similarity in parents' child rearing. *Psychological Bulletin*, *125*, 223–254.
- Lamborn, S. D., Mounts, N. S., Steinberg, L., & Dornbusch, S. M. (1991). Patterns of competence and adjustment among adolescents from authoritative, authoritarian, indulgent, and neglectful families. *Child Development*, *62*, 1049–1065.
- Loeber, R., Drinkwater, M., Yin, Y., Anderson, S. J., Schmidt, L. C., & Crawford, A. (2000). Stability of family interaction from ages 6 to 18. *Journal of Abnormal Child Psychology*, *28*, 353–369.
- Maccoby, E. E., & Martin, J. A. (1983). Socialization in the context of the family: Parent–child interaction. In P. H. Mussen (Series Ed.) & E. M. Hetherington (Vol. Ed.), *Handbook of child psychology: Vol. 4 Socialization, personality, and social development* 4th ed. (pp. 1–101). New York: Wiley.
- Magnusson, D. M. (1988). *Individual development from an interactional perspective: A longitudinal study*. Hillsdale, NJ: Erlbaum.
- McNally, S., Eisenberg, N., & Harris, J. D. (1991). Consistency and change in maternal child–rearing practices and values: A longitudinal study. *Child Development*, *62*, 190–198.
- Muthén, L. K., & Muthén, B. O. (2008). *Mplus user's guide*. Los Angeles, CA: Muthén & Muthén. (Original work published 1998)
- Nagin, D. S. (2005). *Group-based modeling of development*. Cambridge, MA: Harvard University Press.
- Nylund, K. L., Asparouhov, T., & Muthén, B. (2007). Deciding on the number of classes in latent class analysis and growth mixture modeling. A Monte Carlo simulation study. *Structural Equation Modeling*, *14*, 535–569.
- Reid, J. B., & Patterson, G. R. (1989). The development of antisocial behaviour patterns in childhood and adolescence. *European Journal of Personality*, *3*, 107–119.
- Shelton, K. K., Frick, P. J., & Wootton, J. (1996). Assessment of parenting practices in families of elementary school-aged children. *Journal of Clinical Child Psychology*, *25*, 317–329.
- Smetana, J., Crean, H. F., & Campione-Barr, N. (2005). Adolescents' and parents' changing conceptions of parental authority. In J. Smetana (Ed.) & W. Damon (Series Eds.), *New directions for child and adolescent development: Vol. 108. Changing boundaries of parental authority during adolescence* (pp. 31–46). New York: Wiley.
- Steinberg, L. (2001). We know some things: Adolescent–parent relationships in retrospect and prospect. *Journal of Research on Adolescence*, *11*, 1–20.
- Tildesley, E. A., & Andrews, J. A. (2008). The development of children's intentions to use alcohol: Direct and indirect effects of parent alcohol use and parenting behaviors. *Psychology of Addictive Behaviors*, *22*, 326–339.