

Age Trends in the Association Between Parenting Practices and Conduct Problems

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Reprinted from *Behavior Modification*
Volume 23, No. 1, January 1999, pp. 106-128
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The authors studied the association between parenting practices and conduct problem behavior in a sample of 179 clinic-referred children and adolescents. Parenting practices were assessed using a multi-informant and multimethod assessment system. Conduct problems were the *DSM-III-R* criteria for oppositional defiant disorder and conduct disorder assessed by a structured psychiatric interview with multiple informants. Results indicated that parents' involvement in their children's activities was most strongly predictive of conduct problems in the adolescent age group (ages 13-17), whereas corporal punishment was most strongly associated with conduct problems in the middle age group (ages 9-12). Parents' monitoring and supervision of their children's behavior was moderately predictive of conduct problems in both of these age groups but only weakly predictive in the youngest age group (ages 6-9). Finally, parental consistency in using discipline was highly predictive of conduct problems in the adolescent age group and moderately predictive in the youngest age group.

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Most theories that attempt to explain the development of conduct problems in children place a heavy emphasis on the role of parenting practices in their etiology. The various theories often differ on the proposed mechanisms through which parenting practices lead to the socialization of the child, and they differ greatly on how much attention is paid to other factors both within the child and within the broader community that may interact with parenting practices to influence socialization (e.g., Frick, 1998; Lykken, 1995; Patterson, Reid, & Dishion, 1992; Wells & Rankin, 1988). Although greater clarity concerning how parenting practices relate to the development of childhood conduct problems awaits further research, there is an emerging consensus over which parenting practices seem to be most related to conduct problems.

BEHAVIOR MODIFICATION, Vol. 23 No. 1, January 1999 106-128
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Loeber and Stouthamer-Loeber (1986) conducted a meta-analysis of more than 300 studies linking parenting practices to aggressive and antisocial behavior in children and adolescents. They found that the strongest and most consistent associations with antisocial behavior were for measures of parental monitoring and supervision of the child and for measures of parental involvement in the activities of the child. The importance of these two dimensions of parenting has been supported in several studies published after this meta-analysis (Cernkovich & Giordano, 1987; Dishion, Patterson, Stoolmiller, & Skinner, 1991; Frick et al., 1992; Laub & Sampson, 1988; Van Voorhis, Cullen, Mathers, & Garner, 1988; Wilson, 1987). In addition, several aspects of parental discipline have been consistently linked to child conduct problems. Specifically, inconsistent use of discipline, failure to use positive change strategies (e.g., positive reinforcement for appropriate behavior), and excessive use of corporal punishment have been linked to child conduct problems in a number of studies (Bierman & Smoot, 1991; Frick et al., 1992; Laub & Sampson, 1988; Patterson, Dishion, & Bank, 1984; Strassberg, Dodge, Pettit, & Bates, 1994; Wells & Rankin, 1988).

Despite the size and consistency of the literature linking these specific dimensions of parenting practices to the development of conduct problems, research has largely ignored the possibility of age-related variations in the association between parenting and conduct problems. These variations could include variations in the strength of this association at different ages and variations in which specific parenting practices may be most related to conduct problems. Failure to consider such age trends is unfortunate because developmental research has clearly shown that parenting practices change over the course of child development, especially those specific practices that have been linked to conduct problems. For example, Paikoff and Brooks-Gunn (1991) reviewed a number of studies showing that parents' involvement with their children, as well as their level of supervision and monitoring of their children, decreases as children approach adolescence. Similarly, Steinmetz (1979) and Wauchope and Straus (1990) found that parental use of corporal punishment is greatest for very young children and tends to decrease as children get older. Therefore, research suggests that there is normal variation in the types of parent-

ing practices used over the course of a child's development. It is quite possible, then, that the types of parenting practices that are most highly associated with conduct problems also vary depending on a child's age.

Uncovering such age trends in the association between parenting practices and conduct problems could have great theoretical and practical importance. For example, documenting changes in the association between parenting and conduct problems over the course of development could provide important clues as to the mechanisms involved in this correlation. It may also help to explain some of the inconsistencies in the existing research on the relative importance of certain parenting practices to the development of conduct problems. Specifically, Loeber and Stouthamer-Loeber (1986) found very modest relations between various aspects of parental discipline and measures of antisocial behavior and delinquency in their meta-analysis. However, the studies included in their meta-analysis were heavily weighted toward older children and adolescents. Studies focusing on younger children tend to find that discipline variables, such as harsh and inconsistent discipline, are some of the strongest predictors of conduct problems (Bierman & Smoot, 1991; Patterson et al., 1984, 1992; Strassberg et al., 1994). Furthermore, treatment programs that focus on improving parenting practices in families that have either children with conduct problems or children who are at risk for developing such behaviors may become even more effective and less costly if they can be tailored to the unique needs of children of different ages (Frick & O'Brien, 1994).

Unfortunately, although many studies have (a) documented the association between specific types of parenting practices and conduct problems or (b) documented normal developmental variations in parenting practices, few studies have focused on possible variations in the association between parenting practices and conduct problems across various ages. In the few studies that have investigated such age-related variations, the focus has been on changes within the adolescent period. Although some developmental differences have been reported across adolescence, the results are somewhat inconsistent (Jang & Krohn, 1995; LaGrange & White, 1985; LeBlanc, 1992; Seydlitz, 1991). One of the major obstacles to studying a broader age range has

been the absence of an accepted methodology for studying parenting practices across childhood and into adolescence. Studies of very young children typically have used observational methodology to study microsocial interactional patterns between parents and children and then relate these interactional patterns to conduct problems in the children (see McNeil, Eyberg, Eisenstadt, Newcomb, & Funderbunk, 1991; Patterson, 1982; Wahler & Dumas, 1984). In contrast, researchers studying parenting practices in families with adolescents tend to rely more heavily on adolescents' reports of the parenting practices they experience (see Loeber & Stouthamer-Loeber, 1986). This move away from observational methodology in the older age ranges is partly because of concerns about the increasing degree of reactivity that results from behavioral observations in adolescents (Keller, 1986) and partly because constructs such as parents' involvement in their children's activities (e.g., knowledge of friends, involvement in a child's school activities) and their supervision of their children (e.g., how often the child is out without adult supervision) are impossible to assess using structured behavioral observations.

In an effort to overcome this methodological obstacle, Frick (1991) developed a multi-informant (parent and child report) and multimethod (global report and telephone interviews) system for assessing parenting practices across childhood and adolescence. It was designed to assess those dimensions of parenting practices that research has most consistently linked to conduct problems: parents' involvement with their children, parents' supervision and monitoring of their children, use of positive discipline techniques, consistency in discipline, and use of harsh discipline. We reported some initial tests of the psychometric properties of this assessment system in a sample of clinic-referred and normal children ages 6 to 13 (Shelton, Frick, & Wootton, 1996). However, the sample size and age range were too small to test age-related changes in the association between parenting practices and conduct problems. Therefore, in the current study, we have expanded the clinic-referred sample of elementary school-aged children from Shelton et al. (1996), and we have added a sample of clinic-referred adolescents to test for potential age trends in the association between parenting practices and conduct problems.

METHOD

Participants were 179 children and adolescents between the ages of 6 and 17 who were consecutive referrals to a university-based outpatient diagnostic and referral service for children and adolescents with behavioral, emotional, or learning disorders. This diagnostic and referral service serves a primarily rural to semirural area in the southern region of the United States. To be included in the study, clinic referrals had to meet two inclusion criteria. First, their IQs could not fall in the mentally retarded range (i.e., below 70). Second, they had to have lived with a female caretaker for at least the 1 month prior to the evaluation, and this caretaker had to have accompanied the child or adolescent to the clinic for the evaluation. The sample was divided into three age groups for data analyses: a young group, ages 6 to 8 ($n = 87$); a middle group, ages 9 to 12 ($n = 60$); and an adolescent group, ages 13 to 17 ($n = 32$). The demographic characteristics of these three groups are summarized in Table 1. In general, all three groups were predominantly male, White, and from lower to lower-middle socioeconomic backgrounds. The only demographic difference across the three groups was that the young group included a greater proportion of girls than did the other two groups, $\chi^2(2, n = 179) = 4.99, p < .10$. Also, the young group had fewer diagnoses of conduct disorder, $\chi^2(2, n = 179) = 12.00, p < .01$, and more diagnoses of attention deficit hyperactivity disorder, $\chi^2(2, n = 179) = 15.48, p < .01$, based on *Diagnostic and Statistical Manual of Mental Disorders (DSM-III-R)* (American Psychiatric Association, 1987) criteria assessed using structured diagnostic interviews.

MEASURES

Alabama Parenting Questionnaire (APQ). The APQ (Frick, 1991) consists of 35 items assessing the five parenting constructs that past research has found to be most consistently associated with conduct problems (see Shelton et al., 1996, for content development and full description of items). The APQ includes a Parental Involvement scale (10 items), a Positive Parenting scale (6 items), a Poor Monitoring/Supervision scale (9 items), an Inconsistent Discipline scale (6 items),

TABLE 1
Demographic Characteristics and Psychiatric Status of the Sample

	<i>Young</i> (n = 87)	<i>Middle</i> (n = 60)	<i>Adolescent</i> (n = 32)
Age (<i>SD</i>)	7.1 (.75)	10.4 (1.1)	14.4 (1.2)
Range	6-8	9-12	13-17
Gender (% female)*	30	16	16
Race (% African American)	22	31	31
Duncan's SEI (<i>SD</i>)	35.1 (24.0)	34.8 (24.9)	33.3 (25.1)
Range	0-96	0-84	0-92
FSIQ (<i>SD</i>)	92.8 (12.4)	92.3 (12.4)	88.9 (12.9)
Range	70-133	75-141	70-120
CD (%)***	9	23	34
ODD (%)	26	26	22
Either CD or ODD (%)	35	48	56
ADHD (%)***	83	60	53

NOTE: Duncan's SEI = Duncan's Socioeconomic Index (Hauser & Featherman, 1977); FSIQ = Full Scale IQ from the Wechsler Intelligence Scale for Children (WISC-R or WISC-III) (Wechsler, 1974, 1991); CD = conduct disorder, ODD = oppositional defiant disorder, and ADHD = attention deficit hyperactivity disorder based on *DSM-III-R* criteria (American Psychiatric Association, 1987) using multiple informants on a structured diagnostic interview. Groups differ * $p < .10$, *** $p < .01$.

and a Corporal Punishment scale (3 items). Items assessing the first two constructs are worded in the positive direction (indicating more positive parenting), and items assessing the latter three constructs are worded in the negative direction. Also included on the APQ are 7 additional items measuring specific discipline practices other than corporal punishment. These items are included so that corporal punishment items are not asked in isolation of other forms of discipline, which could place an implicit negative bias toward these items.

The APQ involves four assessment formats with analogous items on each format: parent and child global report forms, and parent and child telephone interviews. Child report items are all worded to refer to parenting in general within the family (e.g., "How often are you out with friends your parents do not know?"). The only exceptions are that items measuring parental involvement are repeated once with the child answering for his or her mother and once answering for his or her father, if there is a father figure in the home. Items on the global report forms are designed to be rated on a 5-point frequency scale (1 = *never*

to 5 = *always*) to represent the "typical" frequency with which the parenting behavior is exhibited in the home. Each item in the telephone interviews is designed to be answered with the respondent's best estimate of the number of occurrences of that behavior over the previous 3 days. The average frequency of each item across the four interviews is used to compute scale scores. Therefore, scale scores are the average frequency of behaviors within a 3-day interval across the four telephone interviews.

APQ data on some participants were not used in analyses. First, data from phone interviews were not used unless the participant completed at least three of the four scheduled interviews. Second, based on the results of Shelton et al. (1996), it appeared that very young children, especially those younger than 9, tended to respond to phone interview questions with response sets that compromised the validity of this assessment format. Therefore, phone interviews were not included for children in the young age group. Third, several additional phone interviews were judged to be unusable because the child or parent gave obviously deviant responses. Deviant responses were operationally defined as a child or parent reporting that a behavior had occurred more than 100 times on at least one item or at least 80 times on two or more items or the interviewer rated the respondent as *very inaccurate* (a score of 1) on a 1-to-5-point scale completed by all interviewers following each APQ administration.

Global questionnaires were read to all children to ensure that reading level did not affect their responses. The questionnaires were read by research assistants trained in standardized administration procedures who were instructed to read the printed instructions and the APQ questions verbatim and not to help the child in interpreting questions. Phone interviews were administered by the same research assistants with similar instructions for standardized administration procedures. The assistants were also trained to request specific number of occurrences from the parent and child for each question. Interviews were conducted at least 3 days apart over a 2-to-4 week period. Parents and children were always interviewed on the same day. Research assistants who conducted the APQ assessments were blind to the participants' reasons for referral to the clinic and to the number of conduct problems they exhibited.

NIMH Diagnostic Interview Schedule for Children, Version 2.3 (DISC). All children and adolescents were assessed for the presence of each symptom of oppositional defiant disorder (ODD) and conduct disorder (CD) according to *DSM-III-R* criteria (American Psychiatric Association, 1987) using the DISC¹ (Shaffer, Fisher, Piacentini, Schwab-Stone, & Wicks, 1992). The DISC is a structured psychiatric interview that was administered to each child's parent (DISC-P), to each child older than age 9 (DISC-C), and to each child's teacher for children younger than age 13 (DISC-T). This procedure was used to ensure that symptoms were assessed through multiple informants at each age but limiting it to those informants who seem to be most valid at various age groups (Frick et al., 1994). A symptom was considered present if it was judged to be present by any informant available at that age, following the procedure recommended by Piacentini, Cohen, and Cohen (1992).

Interviews were administered by advanced graduate students in clinical psychology or a licensed psychologist trained in assessing childhood psychopathology and trained in standardized DISC administration procedures. The same interviewer conducted the DISC-P, DISC-C, and DISC-T for each child. The correlation between parent and teacher report of CD/ODD symptoms was $r = .38$ ($p < .01$). The correlations between parent and child report and between child and teacher report were $.42$ ($p < .01$) and $.17$ (*ns*), respectively. Sixty (34%) of the DISC-P interviews were observed through one-way mirrors. Observers independently coded parents' responses, and the kappa statistic was calculated to determine interviewer and observer agreement for each symptom that was coded as present at least twice by the primary interviewer. Kappas for the CD symptoms ranged from 0.79 to 1.0 with a median kappa of 1.0. Kappas for the ODD symptoms ranged from 0.91 to 1.0 with a median kappa of 1.0. Because the same questions were asked of the child and the child's teacher by the same interviewer, it is likely that the high reliability found for the parent interview also applies to these interviews as well. However, all teachers in the clinic sample also completed the Comprehensive Behavior Rating Scale for Children (CBRSC) (Neeper, Lahey, & Frick, 1990). Teachers' ratings on the CBRSC Oppositional/Conduct Disorder scale were highly correlated ($r = .77$, $p < .01$)

with their reports of ODD/CD symptoms on the DISC-T, indicating that their reports of conduct problems were consistent across assessment methods.

PROCEDURE

The measures used in this study were included as part of a comprehensive psychological evaluation. Upon their initial visit to the clinic, all participants and their maternal custodial parents were asked to consent to the use of the assessment data in research. They were told that their willingness to participate in research would in no way affect the clinical services that they received. None of the parents or children who met our inclusion criteria refused to participate in the study. Following informed consent, the parent was administered a semistructured interview to obtain demographic information and was then administered the DISC-P. Following the DISC-P, the parent completed the APQ global report form. While the parent's data were being collected, the child was administered an intelligence test to screen for mental retardation and was then administered the DISC-C and the APQ global report form. The child's teacher was contacted and administered the DISC-T by telephone during the week following the clinic evaluation. Parent and child APQ phone interviews were also initiated during the week following the evaluation. The interviews were conducted at least 3 days apart over a 2-to-4 week period.

RESULTS

Because the basic psychometric properties of the APQ had not been tested in an adolescent age group prior to this study, we calculated the coefficient alpha for each APQ scale separately (a) for each assessment format and (b) for each age group. These internal consistency estimates are reported in Table 2. In general, the internal consistency of the APQ scales tended to be highest in the adolescent age group. Also, the one parenting construct that showed uniformly poor internal consistency was the Corporal Punishment scale. The low internal consistency of this scale was likely due in part to the fact that it consisted of

TABLE 2
Internal Consistency of the Alabama Parenting
Questionnaire Scales in the Three Age Groups

	<i>Coefficient Alpha for Unstandardized Variables</i>		
	<i>Young</i>	<i>Middle</i>	<i>Adolescent</i>
Parental Involvement (Mother)			
Parent global	.77 (n = 87)	.79 (n = 60)	.82 (n = 32)
Parent interview	.75 (n = 81)	.80 (n = 53)	.70 (n = 30)
Child global	.72 (n = 87)	.72 (n = 60)	.82 (n = 32)
Child interview		.89 (n = 52)	.90 (n = 30)
Parental Involvement (Father)			
Child global	.84 (n = 71)	.85 (n = 39)	.90 (n = 23)
Child interview		.80 (n = 39)	.95 (n = 23)
Positive parenting			
Parent global	.77	.80	.79
Parent interview	.84	.91	.75
Child global	.65	.76	.85
Child interview		.90	.84
Poor Monitoring/Supervision			
Parent global	.67	.49	.67
Parent interview	.61	.44	.75
Child global	.64	.72	.43
Child interview		.84	.87
Inconsistent Discipline			
Parent global	.69	.55	.70
Parent interview	.80	.67	.85
Child global	.53	.53	.61
Child interview		.81	.79
Corporal Punishment			
Parent global	.25	.38	.48
Parent interview	.00	.36	.71
Child global	.44	.00	.52
Child interview		.32	.48

NOTE: Sample sizes differed between global and interview formats due to the elimination of several interviews judged to be invalid. There were also differences in the samples sizes for the Parental Involvement (Father) scale due to the inclusion of only those children with father figures in the home.

only three items. It is also possible that parents who use corporal punishment use one preferred method (e.g., spanking with hand or hitting with switch or belt), which leads to poor interitem correlations. Item-total correlations were also inspected across each age group to determine whether any items were differentially related to their respective

parenting constructs across the different assessment formats and age groups. In general, the items seemed to perform similarly across age groups and assessment formats. This set of analyses did lead to the elimination of Item 32 (i.e., "How often is your child at home without adult supervision?") from the Poor Monitoring/Supervision scale for all age groups and assessment formats due to consistently low item-total correlations.

The next set of analyses were conducted to determine if the age trends in parenting practices that have been found in past research were apparent in this clinic sample. As expected from past research, there were clear age trends for all of the parenting constructs except for parental consistency in applying discipline and for fathers' involvement in their children's activities. Mothers' involvement in their children's activities and parental use of positive parenting techniques decreased significantly after age 9. Parental monitoring and supervision of their children showed a significant decline (i.e., increased scores on the Poor Monitoring/Supervision scale) in the adolescent age group. Finally, use of corporal punishment showed a steady decline across the three age groups (see Table 3).

The main set of analyses was conducted to test the association between each of the parenting constructs with conduct problems in each age group. Given that all of the parenting constructs and conduct problems symptoms showed highly skewed distributions, which could have attenuated correlations, all variables were first transformed to create normal distributions. The number of conduct problem symptoms reported as present by multiple informants was used as the dependent variable in a series of multiple regression analyses conducted separately for each parenting construct. The squared multiple correlation (R^2) between conduct problems and scores from each form of the APQ (with the exception of the child telephone interview format in the young age group) for a given construct was used as the estimate of the association between the parenting construct and conduct problems. These analyses were conducted twice, once for all children in the sample with complete data across all forms of the APQ and once eliminating children who scored high (above the upper quartile) on the Callous-Unemotional scale of the Psychopathy Screening Device (Frick & Hare, in press). These analyses were conducted because of

TABLE 3
Age Trends Across the Three Age Groups—
Means and Standard Deviations

	Young	Middle	Adolescent	F(df)
Parental Involvement				
(Mother)				
Parent global	39.97 ^a (4.9)	37.50 ^b (5.3)	37.31 ^b (5.4)	5.5 (2, 177)***
Parent interview	52.64 ^a (19.8)	43.54 ^b (20.1)	37.94 ^b (18.7)	7.2 (2, 157)***
Child global	34.86 ^a (7.9)	32.73 ^{ab} (7.3)	29.86 ^b (8.0)	4.8 (2, 174)***
Child interview		39.82 (31.1)	30.76 (27.1)	1.6 (1, 71)
Parental Involvement				
(Father)				
Child global	30.30 (10.1)	29.42 (9.4)	26.25 (8.6)	1.5 (2, 123)
Child interview		22.80 (19.3)	20.70 (29.0)	0.1 (1, 51)
Positive Parenting				
Parent global	25.88 ^a (2.9)	24.58 ^b (3.7)	23.32 ^b (3.4)	7.9 (2, 177)***
Parent interview	57.13 ^a (23.8)	45.22 ^b (29.2)	32.01 ^b (24.3)	10.9 (2, 157)***
Child global	23.13 ^a (5.0)	22.47 ^a (5.3)	19.03 ^b (5.8)	6.8 (2, 174)***
Child interview		39.17 (27.9)	32.33 (33.0)	0.9 (1, 71)
Poor Monitoring/Supervision				
Supervision				
Parent global	13.53 ^a (4.6)	14.55 ^a (4.0)	17.83 ^b (5.3)	10.6 (2, 177)***
Parent interview	1.41 ^a (3.7)	1.72 ^a (3.1)	5.24 ^b (8.9)	7.0 (2, 157)***
Child global	21.01 ^{ab} (7.2)	18.70 ^b (7.0)	23.06 ^a (5.6)	4.3 (2, 174)***
Child interview		7.97 ^a (11.2)	16.52 ^b (25.2)	3.9 (1, 71)**
Inconsistent Discipline				
Parent global	14.89 (3.5)	15.52 (3.2)	15.58 (3.4)	0.8 (2, 177)
Parent interview	8.27 (11.2)	7.83 (10.5)	5.16 (8.2)	1.0 (2, 157)
Child global	15.63 (5.0)	14.11 (4.8)	15.74 (4.6)	2.0 (2, 174)
Child interview		9.69 (12.1)	4.95 (6.5)	3.6 (1, 71)*
Corporal Punishment				
Parent global	6.67 ^a (1.4)	6.27 ^{ab} (1.8)	5.69 ^b (1.7)	4.5 (2, 177)***
Parent interview	2.26 ^a (2.8)	1.67 ^{ab} (2.3)	.53 ^b (1.5)	5.5 (2, 157)***
Child global	7.26 ^a (3.2)	5.93 ^{ab} (2.1)	4.69 ^b (2.1)	11.4 (2, 174)***
Child interview		4.03 ^a (6.5)	.28 ^b (.8)	9.0 (1, 71)***

NOTE: Means with different superscripts are significantly different at the $p < .05$ level using Tukey's procedure for pairwise comparisons. Standard deviations are shown in parentheses. * $p < .10$. ** $p < .05$. *** $p < .01$.

evidence that children high on callous-unemotional (CU) traits may develop conduct problems through a mechanism independent of the influence of parenting (Wootton, Frick, Shelton, & Silverthorn, 1997). Consistent with this contention, the R^2 estimates were consistently higher between conduct problems and parenting when children

TABLE 4
The Association (squared multiple correlation)
Between Each Parenting Construct and Conduct
Problems Across the Three Age Groups

Parenting Construct	Young ^a			Middle ^b			Adolescent ^c		
	ODD +		CD	ODD +		CD	ODD +		CD
	CD	ODD		CD	ODD		CD	ODD	
Parental Involvement (Mother)	.15**	.09	.02	.08	.07	.06	.31*	.31*	.37**
Parental Involvement (Father)	.02	.01	.02	.06	.10	.06	.29**	.27*	.26*
Positive Parenting	.01	.02	.05	.02	.03	.05	.11	.13	.14
Poor Monitoring/Supervision	.07	.07	.03	.20	.22*	.13	.17	.20	.13
Inconsistent Discipline	.15**	.15**	.03	.08	.14	.09	.38**	.35**	.32*
Corporal Punishment	.02	.02	.01	.44***	.43***	.27**	.17	.15	.15
Mean	.07	.06	.03	.15	.17	.11	.24	.24	.23

NOTE: The numbers in the table are the squared multiple correlations (R^2) to summarize the association of each parenting construct with conduct problems. Each form of the Alabama Parenting Questionnaire was used in computing the R^2 , with the exception that the child telephone interview was not included for the younger sample. Multi-informant composites of the number of conduct problem symptoms were used in computing the R^2 . ODD = number of *DSM-III-R* oppositional defiant disorder symptoms; CD = number of *DSM-III-R* conduct disorder symptoms.

a. $n = 50$ with the exception of Parental Involvement (Father) where $n = 42$.

b. $n = 34$ with the exception of Parental Involvement (Father) where $n = 23$.

c. $n = 27$ with the exception of Parental Involvement (Father) where $n = 20$.

* $p < .10$. ** $p < .05$. *** $p < .01$.

high on CU traits were eliminated. However, this was found only for the young and middle age groups. There was very little difference in the estimates of association including or excluding children high on CU traits in the adolescent group.

In Table 4, we report the R^2 estimates for each age group, with the estimates from the young ($n = 50$) and the middle ($n = 34$) groups being calculated after eliminating children high on CU traits, and the estimates in the adolescent group ($n = 27$) being based on all children in this age group. There are several distinct age trends that are evident from the estimates reported in Table 4. First, parenting tended to account for more variance in predicting conduct problems in the adolescent age group. Specifically, the mean R^2 across all of the parenting constructs for predicting ODD/CD symptoms was .24 for the adoles-

cent group, compared to .07 and .15 for the young and middle groups, respectively. Second, distinct age trends were evident for several of the individual parenting constructs. The association between parental involvement and conduct problems was highest in the adolescent age group. Inconsistent discipline also tended to be highly associated with conduct problems in the adolescent age group. In contrast, corporal punishment was highly associated with conduct problems in the middle age group ($R^2 = .44$) but only moderately associated with conduct problems in the adolescent group ($R^2 = .17$) and very weakly associated with conduct problems in the young group ($R^2 = .02$). Poor monitoring and supervision was only weakly associated with conduct problems in the young group ($R^2 = .07$) but increased in its association for the middle ($R^2 = .20$) and adolescent ($R^2 = .17$) groups. Third, the associations between parenting and conduct problems in the young group were clearly due to the association between parenting and ODD symptoms. In contrast, in adolescents where the base rate of the more severe CD symptoms was greater, parenting showed very similar associations with ODD and CD symptoms.

We repeated the analyses described in Table 4 using a hierarchical regression procedure in which demographic variables (i.e., gender, ethnicity, IQ, and socioeconomic status) were entered into the regression equation first followed in the second step by the multiple methods of assessing each parenting construct. These analyses allowed us to test the amount of variance that each parenting construct accounted for in the prediction of conduct problems above the variance accounted for by the demographic variables. This procedure led to almost identical results to those reported in Table 4, both in terms of the amount of variance in conduct problems that could be attributed to the parenting constructs and in terms of the significance tests for this association.

Finally, we also inspected the partial correlations between each method of assessing parenting and conduct problems after controlling for demographic variables. These partial correlations were calculated separately across the three age groups. These analyses allowed us to determine if there were differences in the association between parenting practices and conduct problems depending on the modality through which parenting was assessed. In general, child report of par-

enting showed very modest associations with conduct problems in both the young and middle groups across all of the parenting constructs.² In contrast, child report became more important in adolescence especially when estimating the association between parental involvement and conduct problems. For example, the partial correlations between ODD/CD symptoms and the Parental Involvement (Mother) scale were $-.49$ ($p < .01$) for the child global report format but only $-.03$ (ns) for the parent global report format. However, even in adolescence, parental report for the discipline variables tended to be more highly correlated with conduct problem symptoms than did child report. For example, the partial correlations between ODD/CD symptoms and the Inconsistent Discipline scale were $.54$ ($p < .01$) for the parent global report form but $.19$ (ns) for the child global report form. From the partial correlations, it was also evident that there was little difference between the global and interview formats in predicting conduct problems. The one notable exception to this finding was that the global report format for assessing poor monitoring and supervision seemed to be somewhat better in predicting conduct problems than was the telephone interview format. In the middle age group, the partial correlation using the global report format was $.36$ ($p < .01$), whereas the partial correlation using the telephone interview format was $.20$ (ns).

DISCUSSION

In this clinic-referred sample of children and adolescents, we found many of the age trends in parenting practices that have been documented in past research. Specifically, parents' involvement in their children's activities, parents' use of positive discipline strategies (e.g., use of praise and compliments for good behavior), and the level of parents' monitoring and supervision of their children decreased as the children got older (see also Paikoff & Brooks-Gunn, 1991). For parental involvement and parental use of positive discipline, the biggest change was between the young (ages 6-8) and middle (ages 9-12) age groups. For monitoring and supervision, the biggest change was between the middle and adolescent (ages 13-17) age groups. Also con-

sistent with past research, parental use of corporal punishment decreased in older children (Steinmetz, 1979; Wauchope & Straus, 1990). In our young sample, parents reported using some form of corporal punishment on an average of 2.26 times over a 3-day period. This rate decreased to 1.67 times in our middle age group and to .53 times in our adolescent group. The only parenting construct that did not show clear age trends was the measure of parental consistency in using discipline.

Whereas other studies have documented these age trends in parenting practices, we also investigated whether there were age trends in the association between parenting practices and conduct problems. Several such age trends emerged. First, despite the decreasing level of parents' involvement with their adolescent children, the correlation between parental involvement and conduct problems was greatest in the adolescent age group. Therefore, although parents were less involved with their adolescent children, possibly in response to the adolescents' need for greater autonomy, the maintenance of some level of positive involvement may be important for reducing the risk for conduct problems. Although this interpretation must be made cautiously given the correlational nature of our data, it would be consistent with the contention made by social control theorists that an adolescent's attachment to his or her parents enhances the internalization of the parents' prosocial values, which makes the adolescent less susceptible to antisocial influences (LaGrange & White, 1985; Wells & Rankin, 1988). Also, this pattern of associations suggests that prevention and intervention programs for families of adolescents should include a component that focuses on increasing positive parental involvement with the adolescent while still respecting his or her increasing need for independence (e.g., Patterson & Forgatch, 1987).

Second, parental use of corporal punishment also showed a clear age trend, one that was very different from the trend found for parental involvement. Corporal punishment showed a very clear peak in its association with conduct problems in our middle age group. In fact, the amount of variance in conduct problems accounted for by corporal punishment in this middle age group was the highest across all parenting constructs and all age groups. One plausible explanation for this age trend is that prior to age 9, some level of corporal punishment is

quite common. As a child becomes older, the continued use of corporal punishment becomes more indicative of a pathological parenting process. However, use of corporal punishment becomes so infrequent in adolescence that its predictive utility decreases due to a restricted range. Alternatively, it may be that the cumulative effects of corporal punishment over an extended period of time are most predictive of conduct problems (e.g., Strassberg et al., 1994), and therefore, the association is not as strong in the young age group. Disentangling these equally plausible explanations would require longitudinal data that were not available in this study. However, irrespective of the eventual explanation for this age trend, the strength of the association between corporal punishment and conduct problems in this middle age group clearly suggests that helping parents deal with their children through alternative discipline methods should be a critical component of most intervention strategies for families of children with conduct problems (Frick & O'Brien, 1994).

Third, within the adolescent sample, parental consistency in applying discipline accounted for the largest amount of variance in conduct problems ($R^2 = .38$) of any of the parenting constructs, although the amount of variance accounted for by parental involvement ($R^2 = .31$) was comparable. This finding is not consistent with the contention that parental discipline practices become less important as a child enters adolescence, at which time more indirect methods of parental socialization, such as parental involvement, are believed to become more important (La Grange & White, 1985). As a result of this belief, most interventions for young children with conduct problems emphasize increasing parental consistency in discipline (e.g., Hembree-Kigin & McNeil, 1995), whereas it is less a focus of interventions for families of adolescents with conduct problems (Patterson & Forgatch, 1987). Our results suggest that parental consistency in discipline is highly predictive of conduct problems in families of adolescents and therefore should also be an integral focus of treatment in this age group.

Fourth, parental monitoring and supervision of a child showed stronger associations with conduct problems in the middle and adolescent age groups than in the young age group. It is interesting to note, however, that this parenting construct had only a moderate relationship with conduct problems even in the older age groups. This finding

is in contrast to the results of the meta-analysis of Loeber and Stouthamer-Loeber (1986) in which parents' monitoring and supervision of their children's activities tend to be one of the strongest correlates to conduct problems averaged across studies. However, these authors also noted that there was substantial variability in how strong the association between parental supervision and conduct problems was across studies, with the strongest associations found in studies using poor, inner-city samples. Therefore, our sample, which came from a rural to semirural geographic area, may not be one in which this parenting construct has its greatest predictive relationship to conduct problems.

In addition to our sample not being an urban sample, it was also composed largely of boys living in the southern United States. Also, parental report of parenting practices was limited to the report of the maternal caretaker. All of these variables could limit the generalizability of our results, and therefore, they need replication in other samples. Furthermore, in addition to our sample being cross-sectional, it was also correlational. As a result, all that we could document were changes in the association between specific types of parenting practices and child conduct problems in children of different ages. Although many of our interpretations focused on the influence of parenting practices on the child, it is clear that the process is at least partly transactional, with the child's behavior also having an influence on the parent's behavior (Lytton, 1990), and the association may be partly accounted for by common causes (Frick & Jackson, 1993). In addition, our adolescent sample spanned a fairly large age range but had the largest concentration of participants in the early adolescent years (ages 13-15). There is some indication that parenting practices in general (Paikoff & Brooks-Gunn, 1991), and their association with conduct problems specifically (Seydlitz, 1991), may change from early to late adolescence. Therefore, our findings for the adolescent group may only apply to children in early adolescence.

All of these limitations can be addressed through further studies of age-related changes in the association between parenting practices and conduct problems in more diverse samples, through the use of longitudinal designs, and through more theory-driven research that tests alternative causal models. Our results suggest that the APQ assess-

ment system may provide a useful vehicle for advancing this line of research that heretofore has been hampered by the lack of a generally accepted method of assessing parenting practices that can be used across a broad age range. This study extends our previous work (Shelton et al., 1996) by showing the usefulness of the APQ for assessing parenting practices in families of adolescents. In fact, these constructs, as assessed by the APQ, were most strongly associated with conduct problems in the adolescent age group. Therefore, this multimethod system of assessing these parenting constructs seems to be useful across a fairly broad age range. One notable exception is the lack of validity of the child interview format for assessing parenting practices in families of children younger than 9 (Shelton et al., 1996). Otherwise, the assessment methods seemed to be capturing similar constructs across the different assessment modalities as indicated by the intercorrelations across the assessment modalities (Shelton et al., 1996), the consistency in item-total correlations across the different assessment modalities, and the similarity of age trends across the different assessment modalities (see Table 3).

There were some differences in the validity of the various assessment formats for predicting conduct problems, however. That is, for both the young and middle age groups, parental report of all of the parenting practices using either the global or interview report format seemed to show the strongest association with conduct problems across all of the parenting dimensions. In contrast, in the adolescent sample, the child's self-report of parental involvement showed stronger associations with conduct problems than did the parental report of involvement. However, even in this older group, parental report of discipline practices continued to show the stronger association with conduct problems than did child report. Despite these relatively minor variations across the different assessment modalities used by the APQ, this assessment system appears to be a useful multimethod system for assessing the parenting practices that have been most consistently associated with conduct problems in past research. The availability of such a methodology is crucial for future research to extend these potentially important findings of specific age trends in the association of parenting practices with conduct problems.

NOTES

1. Data collection began prior to the publication of the *DSM-IV* (American Psychiatric Association, 1994). Therefore, we used the symptom list from the earlier *DSM-III-R* criteria for oppositional defiant disorder (ODD) and conduct disorder (CD). However, it is quite likely that our results will be applicable to *DSM-IV* criteria as well. First, in general, there appears to be a high overlap between the two definitions, with more than 90% of the children diagnosed by one set of criteria also diagnosed with the other (Lahey et al., 1994). Second, we used the combined ODD and CD symptom lists in all analyses. The *DSM-IV* field trials indicated that most of the children who met *DSM-III-R* criteria for CD, but not the more stringent *DSM-IV* criteria, exhibited sufficient conduct problems to meet criteria for ODD. Therefore, by using continuous symptom lists, we likely captured the variations in severity that results in discrepancies between the two versions of the *DSM*.

2. The partial correlations were also computed defining conduct problems using each informant (i.e., parent, teacher, and child) separately. This method allowed us to determine if the correlations may have been inflated by "shared method variance" resulting from the same reporter being used to assess parenting and contributing to the multi-informant definition of conduct problems. Consistent with our previous findings (Shelton et al., 1996), this type of method variance did not seem to greatly influence our results. In fact, in many of the estimates from the young and middle age groups, the correlations with teacher-reported conduct problems were even stronger than those found using the multi-informant procedure.

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