

The Influence of Parenting Styles on Children's Cognitive Development

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Abstract

Based on a larger longitudinal project of family stress and children's development, the primary objective of the current study was to investigate the relationships between parenting styles and children's cognitive ability in families with young elementary school-aged children. Parents completed a self-administered survey on family experiences, including parenting styles. Children were interviewed at their schools where the Brief Intellectual Ability portion of the *Woodcock-Johnson III* was administered. The findings of the current study indicate that parenting styles are not better predictors of children's cognitive ability than family socioeconomic-demographic characteristics.

The Influence of Parenting Styles on Children's Cognitive Development

A great deal of literature published before the 1990s examined the effects of parenting styles on children's outcomes, particularly establishing the benefits to children of authoritative parenting as opposed to the negative outcomes produced by authoritarian and permissive parenting (Demo & Cox, 2000). The age group included in the present study has been understudied, however. Most of the existing studies that examine the relationship between parenting styles and children's cognitive development are comprised of families with adolescents (e.g. Aunola, Stattin & Nurmi, 2000; Dornbusch, Ritter, Leiderman & Roberts, 1987; Leung & Kwan, 1998; Leung, Lau, & Lam, 1998) or college students (Hickman, Bartholomae & McKenry, 2000; Kawamura, Frost, & Harmatz, 2002). There is a need, then, to study families with younger children so that parents better understand their children's development in light of their own parenting practices and fully realize the implications of these practices on their children's current and future academic success.

Belsky's (1984) model of the determinants of parenting is based on studies of child maltreatment. It examines the factors that influence parenting and, consequently, child outcomes, and it seeks to answer the question, Why do parents parent the way they do? Belsky states that "the determinants of parenting shape childrearing, which in turn influence child development" (p. 84). The model has three domains: (a) the personal psychological resources of the parents; (b) the characteristics of the child; and (c) contextual sources of stress and support that include the marital relations, the social networks, and the occupational experiences of parents. Belsky, Robins, and Gamble (1984) define competent parenting as "the style of child rearing that enables the developing person to acquire the capacities required for dealing effectively with the ecological niches that she or he will inhabit during childhood, adolescence, and adulthood" (p.

251). Competent parenting is related to warmer, more accepting, and more helpful styles of parenting (Bogenschneider, Small, & Tsay, 1997). Authoritative parenting is competence-inducing in that it recognizes the child's need for control and individuality, views the rights and duties of parents and children as complementary, and is characterized by sensitivity to children's capabilities and the developmental tasks they face (Belsky, Lerner, & Spanier, 1984). Belsky's (1984) model provides the framework for the current study in which a direct link between parenting and child outcomes is posited and empirically tested with a sample of younger children and both their mothers and fathers.

Review of Literature

Many studies exist that examine parenting styles (e.g., Abell, Clawson, Washington, Bost, & Vaughn, 1996; Beyer, 1995; Bluestone & Tamis-LeMonda, 1999). Baumrind's (1978) three parenting styles of authoritarian, permissive, and authoritative are often used in studies investigating parenting styles in relation to diverse child outcome variables, such as academic achievement, self-confidence, aggression, delinquent behavior, and substance abuse (Dornbusch et al., 1987; Hart, Nelson, Robinson, Olsen, & McNeilly-Choque, 1998; Hill, 1995; Lamborn, Mounts, Steinberg, & Dornbusch, 1991; Shumow, Vandell, & Posner, 1998). Researchers typically have identified these three parenting styles based on the levels of control and warmth displayed by parents on a regular basis and in a variety of situations. Past research has also included a fourth parenting style called neglectful, which is characterized by low warmth and low control (Dekovic & Gerris, 1992; Glasgow, Dornbusch, Troyer, Steinberg, & Ritter, 1997; Lamborn et al., 1991; Leung & Kwan, 1998). Maccoby and Martin (1983) call this parenting style Indifferent-Uninvolved. They describe these parents as emotionally detached. Indifferent-uninvolved, or neglectful, parents tend to keep their children at a distance, responding to child

demands only to make them cease. Little is known about this parenting style, and research on this population of parents is lacking because they are typically not very responsive or involved in their children's lives and, therefore, do not volunteer to be studied. Because these parents, and consequently their children, are difficult to study, the current study examined only the three previously mentioned parenting styles.

Studies that examined how parenting styles influenced the cognitive development of young elementary-aged children are rare (e.g., Chen, Dong, & Zhou, 1997), and no studies were found that used a standardized assessment of cognitive ability, like the *Woodcock –Johnson*. In a study of adolescents, Dornbusch et al. (1987) found that authoritarian and permissive parenting styles were negatively associated with higher grades, whereas the authoritative parenting style was positively associated with higher grades. Radziszewska, Richardson, Dent, and Flay (1996) found similar results in their study of 15-year-olds. In another study of adolescents, Leung, Lau, and Lam (1998) found that that academic achievement was negatively related to authoritarianism. In a study of adolescent minority students (Hispanic American, African American, and Asian American), Boveja (1998) found that adolescents who perceived their parents to be authoritative engaged in more effective learning and studying strategies.

Based on Belsky's (1984) model and the reviewed literature, the primary objective of the current study was to investigate the influence of authoritative, authoritarian, and permissive parenting styles on children's cognitive ability. We expected that higher levels of authoritative and lower levels of authoritarian and permissive parenting practices were related to higher levels of cognitive ability. A secondary objective was to compare parenting styles and socioeconomic-demographic variables as predictors of young elementary school-aged children's cognitive ability

Procedures

Participants and Sampling

Following Institutional Review Board approval, permission was secured from 19 schools to recruit first and third grade children and their families from a medium-sized southern city in the U.S. From these 19 schools, parental permission was received from 431 families. A parental survey that assessed internal family processes, including parenting styles and socioeconomic-demographic characteristics, was mailed to each participating family in 2001. Families were offered a compensation of \$25.00 for participating in the study. Parental surveys were returned from 290 families (278 mothers and 143 dads) for a 67% response rate.

The children were interviewed at their schools during the spring. From the 290 families, 133 first graders and their families and 148 third graders and their families were interviewed. Nine of the 290 children were not able to be interviewed because they either moved out of the area, transferred to a school that was not participating in the study, or did not meet the sampling criteria (e.g., they were too old or had a disability). In addition, a few of the mothers and fathers did not complete the entire parenting styles assessment so they were removed from the analyses of the current study, yielding a final sample size of 267 mother-child pairs and 127 father-child pairs.

The majority of the mothers or female legal guardians (in all cases either a grandmother or aunt) were African American (51%) or White (43%); 11 mothers were Native American, Hispanic/Spanish/Latino, or Asian or Pacific Islander. The ages of the mothers ranged from 20 to 61 years of age, and the majority of the mothers (66%) were married or cohabiting. About 43% of the mothers had attended some college or trade school, and most of the mothers (67%) were employed and worked full-time (at least 40 hours per week). Slightly over 27% of the mothers

reported a household income of between \$20,000 and \$40,000. Compared to the residents of the catchment area, the mothers of the current study are typical.

As far as the fathers or male legal guardian, the majority were White (62%), although 32% were African American; less than a handful of fathers were Native American, Hispanic/Spanish/Latino, or Asian or Pacific Islander. The ages of the fathers ranged from 21 to 68 years old, and the majority of the fathers (88%) were married. About 39% of the fathers had attended some college or trade school, and most were employed (96%) and worked full-time (at least 40 hours per week). Slightly over 30% of the fathers reported a household income of between \$20,000 and \$40,000, and another 29% reported a household income of between \$40,000 and \$60,000. Compared to the residents of the catchment area, the fathers of the current study are not typical with respect to race and income.

Variables and Assessments

Parenting Styles

Scores from the Primary Caregivers Practices Report (PCPR—Robinson, Mandlco, Olsen, & Hart, 1995) assess the level of a parent's or guardian's parenting style with respect to Baumrind's primary parenting styles typologies: authoritarian (high control, low warmth), permissive (low control, high warmth), and authoritative (high control, high warmth). The original PCPR consists of 62 items in which the parents or guardians indicate how often the stated behavior is used when interacting with their children. For the purposes of the larger study, 10 items (3 authoritarian, 4 permissive, and 3 authoritative) with low factor loading scores (<0.40) were removed from the copy of the PCPR received by the participants in this study, leaving 52 items in the assessment. Examples of the remaining items include (a) "I encourage my child to talk about her/his troubles" (authoritative), (b) "I find it difficult to discipline my child"

(permissive), and (c) “I spank my child when my child is disobedient” (authoritarian). Response choices ranged from “almost never” to “almost always” on a 5-point Likert-type scale.

Because parenting styles were conceptualized as contextual and not mutually exclusive typologies by the creators of the PCPR (Robinson et al., 1995), a summed score was tabulated as directed for each parent or guardian on each of the three parenting styles, which means that the higher the score the more the caregiver exhibited that particular parenting style. Thus, the same parent or guardian may have had high authoritative scores, moderate permissive scores, and low authoritarian scores depending upon that person’s self-reported parenting practices. There were 17 items measuring authoritarian parenting, 11 items measuring permissive parenting, and 24 items measuring authoritative parenting style type. The measure of authoritarian parenting (potential range 0-85) was obtained by summing the scores of the 17 items that assess authoritarian parenting. The measure of permissive parenting (potential range 0-55) was obtained by summing the scores of the 11 items that assess permissive parenting. The measure of authoritative parenting (range 0-120) was obtained by summing the scores of the 24 items that assess authoritative parenting. Authoritarian items have a Cronbach alpha of .86, permissive items have a Cronbach alpha of .75, and authoritative items have a Cronbach alpha of .91 (Robinson et al., 1995). The PCPR has been validated in the United States (Robinson et al., 1995) and more recently in Russia (Hart et al., 1998).

Children's cognitive ability

Children's cognitive performance was assessed using the Brief Intellectual Ability (BIA) portion of the latest version of the well-established *Woodcock-Johnson Tests of Cognitive Ability* (Woodcock, McGrew, & Mather, 2001). The *Woodcock-Johnson (W-J)* measures the cognitive ability of persons from kindergarten through adulthood. The BIA is the recommended portion of

the *W-J* battery for research, rather than diagnostic purposes, and includes cognitive tests of verbal comprehension, concept formation, and visual matching that are computed into a single score based upon the mean score of all three tests. The median reliability coefficient for the BIA is .95, with a range of .94 to .98 across ages (McGrew & Woodcock, 2001).

Statistical Analyses

Because some socioeconomic-demographic characteristics are known to be related to parenting style type (e.g., Bornstein, 1995), they were included as control variables in the current study. Depending on the metric of the variables, either Pearson's or Spearman's correlations were performed between these variables and the parenting style types. Control variables not significantly related to the three parenting style types or to children's cognitive ability were not included in the regression analyses of the current study. The first step of the regression analyses was to examine the influence of the control variables on children's cognitive ability. The second step of the regression analyses was to add parenting styles as a predictor of children's cognitive ability. As conventional, a $p < .05$ was used to indicate statistical significance.

Findings

The descriptive statistics (mean and standard deviation) of both mothers and fathers are listed in Tables 1 and 2. For the mothers' PCPR, the authoritarian scores ranged from 17 to 55; the permissive scores ranged from 7 to 34; and the authoritative scores ranged from 21 to 96. For fathers' PCPR, the authoritarian scores ranged from 18 to 62; the permissive scores ranged from 13 to 37; and the authoritative scores ranged from 58 to 96. For the BIA, the standardized scores ranged from 66 to 148 for children with participating mothers and from 79 to 148 for children with participating fathers, with no scores of any child more than four standard deviations from the mean.

For mothers, four of the variables representing socioeconomic-demographic characteristics were significantly correlated with children's cognitive ability (Table 1). These findings indicate that children with White married mothers with higher levels of education and from families with higher levels of income have higher cognitive ability scores. In addition, two of the three parenting style variables were significantly correlated with children's cognitive ability. Both authoritarian and permissive parenting styles were negatively related to children's cognitive ability indicating that children with mothers who report higher levels of authoritarian and permissive parenting practices have lower cognitive ability scores.

For fathers, four of the variables representing socioeconomic-demographic characteristics were significantly correlated with children's cognitive ability (Table 2). Coincidentally, these are the same variables that were significantly correlated with children's cognitive development using the mothers' data. These findings indicate that children with White married fathers with higher levels of education and from families with higher levels of income exhibit higher cognitive ability. In addition, one of the three parenting style variables was significantly correlated with children's cognitive ability. Permissive parenting style was negatively related to children's cognitive ability indicating that children with fathers who report higher levels of permissive parenting practices have lower cognitive ability scores.

The results of the first step of the regression analyses indicate that the socioeconomic-demographic variables contributed significantly to children's cognitive ability for both mothers and fathers (Tables 3 & 4). For mothers, the control variables explained 20% of variance in children's cognitive ability. For fathers, the control variables explained 15% of variance in children's cognitive ability.

The results of the second step of regression analyses indicate that the control variables and parenting styles together contributed significantly to children's cognitive development although the change in R^2 was not significant for either mothers or fathers. For mothers, three of the control variables but none of the parenting style variables were significant predictors of children's cognitive development. For fathers, two of the control variables and one of the parenting styles variables were significant predictors of children's cognitive development. Authoritative parenting practices were positively related to children's cognitive ability indicating that children with fathers who report high levels of authoritative parenting have higher cognitive ability. In general, these findings indicate that parenting styles are not better predictors of children's cognitive ability than socioeconomic-demographic characteristics.

Conclusions

The results of this study were inconclusive and difficult to interpret due to a mixture of expected and unexpected results and few significant and powerful relationships between parenting styles and children's cognitive ability. However, the inconclusive results of this study indicate the need for further investigation into how parenting behaviors influence the development of young children's cognitive development. It also promotes the need to study mothers and fathers separately in regard to how their possibly different parenting styles influence child outcomes, particularly in African-American families with young children.

A review of Belsky's model of the determinants of parenting (1984) reveals several factors that could possibly affect child outcomes more directly than previously considered, such as parent's work and the quality of the parents' marriage. As indicated in Belsky's model, child characteristics also influence child outcomes. It is possible that the results of this study were limited because the child's characteristics were not considered. Perhaps, child characteristics,

such as temperament and resiliency, are a more significant influence on children's cognitive ability than parenting. In addition, other variables, such as parent personality or marital relations, may have needed to be included. Lastly, it could be that parenting has a greater and more direct influence on other aspects of children's development such as social and emotional development rather than cognitive development. Perhaps, the influence of parenting on children's cognitive development has an indirect effect or is mediated by other areas of development or even child characteristics

The inconclusive results of this study offer several implications for future research. The PCPR (Robinson, et al., 1995) was specifically developed for use with parents of young children. Future research might involve the use of a different measure of parenting styles, such as a measure developed to assess children's perceptions of their parents' style of parenting. Another possibility would be to divide the parenting style measure into more specific dimensions of each style such as warmth and support, reasoning/induction, democratic participation, physical coercion, verbal hostility, punitive strategies, and indulgence (Robinson, Mandlco, Olsen, & Hart, 2001). This division would allow for the investigation of how specific parenting behaviors rather than global parenting style may influence the development of young children's cognitive development. Another possibility would be for future research to investigate parenting styles and children's cognitive ability in a longitudinal study as it would allow researchers to make stronger inferences of causality. Lastly, more studies of young elementary school-aged children are needed as this age of childhood is understudied.

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Table 1
Descriptive Statistics and Intercorrelations for all Variables (n=267 mothers)

Variable	M	SD	1	2	3	4	5	6	7	8	9	10
Children's Cognitive Ability	102.66	12.65	.20*	.37*	.00	-.01	.04	.23*	.37*	.07	-.10*	-.12*
Predictor Variable												
1. Marital status		.66 ^a	1.0	.28*	.01	.49*	.12*	.17*	.55*	.06	-.01	-.02
2. Race		.43 ^b		1.0	.01	.00	.04	.09	.47*	-.04	.02	-.05
3. Employment status		.70 ^c			1.0	-.13*	-.01	.12*	.09	.07	-.05	-.04
4. Household size	4.15	1.28				1.0	-.02	-.07	.07	-.00	.09	.04
5. Age	35.24	6.66					1.0	.17*	.21*	.08	-.06	.06
6. Education	5.83 ^d	.99						1.0	.41*	.19*	.04	.02
7. Family income	4.26 ^{*e}	1.65							1.0	.14*	.01	-.02
8. Authoritative parenting style	80.74	9.45								1.0	-.12*	.09
9. Authoritarian parenting style	35.49	6.59									1.0	.44*
10. Permissive parenting style	20.73	3.73										1.0

* $p < .05$

^a proportion married; ^b proportion white; ^c proportion employed; ^d represents education level between college and some college; ^e represents income level between \$20,000 and \$40,000

Table 2

Descriptive Statistics and Intercorrelations for all Variables (n=134 fathers)

Variable	M	SD	1	2	3	4	5	6	7	8	9	10
Children's Cognitive Ability	105.94	12.24	.18*	.29*	.02	.13	.09	.18*	.32*	.12	-.02	-.18*
Predictor Variable												
1. Marital status		.92 ^a	1.0	.16*	-.05	.31*	.01	-.03	.25*	-.06	-.03	-.17*
2. Race		.62 ^b		1.0	-.05	-.08	.19*	.31*	.41*	-.04	.08	-.10
3. Employment status		.96 ^c			1.0	.00	-.12	.06	.22*	-.03	.05	-.11
4. Household size	4.35	1.19				1.0	-.11	-.16*	.01	-.12	.00	-.06
5. Age	38.13	7.26					1.0	.11	.17*	-.15*	-.02	.19*
6. Education	5.96 ^d	1.03						1.0	.47*	-.01	.10	.03
7. Family income	4.96 ^e	1.39							1.0	.00	.05	-.13
8. Authoritative parenting style	78.51	8.13								1.0	-.33*	-.19*
9. Authoritarian parenting style	37.22	6.63									1.0	.41*
10. Permissive parenting style	20.67	3.63										1.0

* $p < .05$

^a proportion married; ^b proportion white; ^c proportion employed; ^d represents education level of some college or trade or technical school; ^e represents income level between \$40,000 and \$60,000

Table 3

Summary of Hierarchical Regression Analysis for Variables Predicting Children's Cognitive Ability (n=267 mothers)

<u>Variable</u>	<u>Step 1</u>				<u>Step 2</u>			
	<u>B</u>	<u>se</u>	<u>β</u>	<u>t</u>	<u>B</u>	<u>se</u>	<u>β</u>	<u>t</u>
Education	1.54	.79	.12	1.94*	1.55	.80	.12	1.94*
Income	1.31	.60	.17	2.20*	1.29	.60	.17	2.16*
Marital status	1.15	1.78	.04	.65	1.08	1.78	.04	.61
Race	6.88	1.64	.27	4.20*	6.85	1.65	.27	4.16*
Authoritative					.00	.08	.00	.04
Authoritarian					-.14	.13	-.08	-1.17
Permissive					-.29	.22	-.09	-1.31
Constant		83.43				90.55		
F		15.83*				9.85		
R ²		.20				.22		
Δ in R ²						.02		

* $p < .05$

Table 4

Summary of Hierarchical Regression Analysis for Variables Predicting Children's Cognitive Ability (n=134 fathers)

<u>Variable</u>	<u>Step 1</u>				<u>Step 2</u>			
	<u>B</u>	<u>se</u>	<u>β</u>	<u>t</u>	<u>B</u>	<u>se</u>	<u>β</u>	<u>t</u>
Education	.00	1.17	.00	.02	.00	1.16	.00	.02
Family income	1.82	.89	.21	2.04*	1.56	.89	.18	1.75*
Marital status	4.83	3.82	.11	1.26	4.81	3.82	.11	1.26
Race	5.09	2.28	.20	2.23*	4.71	2.27	.19	2.07*
Authoritative					.23	.13	.16	1.76*
Authoritarian					.17	.18	.09	.94
Permissive					-.52	.32	-.15	-1.62
Constant		82.24				66.09		
F		4.56*				3.66*		
R ²		.15				.19		
Δ in R ²						.04		

* $p < .05$